Aviation within H2020/Heurope

Sevilla, 20 de febrero de 2020
Juan Francisco Reyes Sánchez

CDTI Centro para el Desarrollo Tecnológico Industrial | E.P.E.
EU Framework Programme for Research and Innovation (2014-2020)

Excellent Science
- ERC (European Research Council)
- ERC Future and Emerging Technologies (FET)
- Marie Skłodowska-Curie actions on skills, training and career development
- European Research Infrastructures

Industrial Leadership
- ICT
- Nanotechnology
- Biotechnology
- Advanced Materials
- Advanced Manufacturing & Processing
- Space
- Access to Risk Finance
- Innovation in SMEs

Societal Challenges
- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated Transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world-Inclusive, innovative and reflexive societies
- Secure Societies: Protecting freedom and security of Europe and its citizens
# Horizon 2020. Transporte

## Work Programme (2014...2020)

### Grandes iniciativas

<table>
<thead>
<tr>
<th>Nombre</th>
<th>Tipo</th>
<th>Alcance</th>
<th>Aportación CE (M€)</th>
</tr>
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<tbody>
<tr>
<td>Clean Sky 2</td>
<td>JU</td>
<td>Construcción aeronáutica</td>
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<td>JU</td>
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<td>450</td>
</tr>
</tbody>
</table>

**ESTRUCTURA WP 2014/2015 & WP 2016/2017**

MOBILITY FOR GROWTH

Aviation  
Rail  
Road  
Waterborne  
Safety  
Urban Mobility  
Logistics  
Intelligent Transport Systems  
Infrastructures  
Socio-Economics...

**AUTOMATED ROAD TRANSPORT**

**GREEN VEHICLES**

**«NUEVA» ESTRUCTURA WP 2018-2020**

MOBILITY FOR GROWTH

BUILDING A LOW-CARBON, CLIMATE RESILIENT FUTURE: LOW-CARBON AND SUSTAINABLE TRANSPORT

SAFE, INTEGRATED AND RESILIENT TRANSPORT SYSTEMS

GLOBAL LEADERSHIP AND COMPETITIVENESS

ACCOUNTING FOR THE PEOPLE

BLUE GROWTH

Digitising and Transforming European Industry and Services:

AUTOMATED ROAD TRANSPORT

Building a low-carbon, climate resilient future:

GREEN VEHICLES
WP2020 – Overview of Transport related topics

- **25** topics split among three calls:

  a) **the Mobility for Growth Call (MG): 19** topics (including the Blue Growth topic) – **€191 million**
    
    a) **Two stages:** Opening 3 Sept 2019
    
    a) **09 Jan 2020** (First Stage)
    
    b) **08 Sep 2020** (Second Stage)

  b) **Single Stage:** Opening: 03 Dec 2019. **Deadline 21 Apr 2020**

  b) **The Automated Road Transport Call (ART): 2** topics - **€50 million**

  c) **The Green Vehicles (GV) call:** 4 topics – **€55 million**

- **2** topics to be funded by the transport WP part following the creation of the cross-cutting call on batteries: **LC-BAT call 2020 – €60 million**

- Contribution to part 10 of the WP (SC3-Energy) with **€ 13 million** (Smart Cities and Elena facility)
1. BUILDING A LOW-CARBON, CLIMATE RESILIENT FUTURE: LOW-CARBON AND SUSTAINABLE TRANSPORT

<table>
<thead>
<tr>
<th>Topic</th>
<th>Titulo</th>
<th>Tipo</th>
<th>Budget (Million EUR)</th>
<th>Etapas</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC-MG-1-13-2020</td>
<td>Decarbonising long distance shipping</td>
<td>RIA</td>
<td>20</td>
<td>Two Stages</td>
</tr>
<tr>
<td>LC-MG-1-14-2020</td>
<td>Understanding and mitigating the effects on public health of emerging non-regulated nanoparticle emissions issues and noise</td>
<td>RIA</td>
<td>10</td>
<td>Two Stages</td>
</tr>
<tr>
<td>LC-MG-1-15-2020</td>
<td>Towards global environmental regulation of supersonic aviation</td>
<td>RIA</td>
<td>15</td>
<td>Single Stage</td>
</tr>
</tbody>
</table>
# Horizonte 2020. Transporte. WP 2020

## 2. SAFE, INTEGRATED AND RESILIENT TRANSPORT SYSTEMS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Titulo</th>
<th>Tipo</th>
<th>Budget (Million EUR)</th>
<th>Etapas</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG-2-10-2020</td>
<td>Enhancing coordination between Member States' actions in the area of infrastructure research with a particular focus on biodiversity and ameliorating environmental impacts and full automated infrastructure upgrade and maintenance</td>
<td>CSA</td>
<td>3</td>
<td>Single Stage</td>
</tr>
</tbody>
</table>

1. **CSA subtopic**: Substantial national and EU funds are spent on transport infrastructure development in all modes of transport. The efficiency of these expenditures is closely related to the level of use of modern innovative and sustainable solutions and on coordination among Member States. ..... 

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>MG-2-10-2020</td>
<td>Enhancing coordination between Member States' actions in the area of infrastructure research with a particular focus on biodiversity and ameliorating environmental impacts and full automated infrastructure upgrade and maintenance</td>
<td>RIA</td>
<td>17</td>
<td>Two Stages</td>
</tr>
</tbody>
</table>

2. **RIA subtopic**: An area where research and coordination is needed is the use of robotised equipment, drones or other (semi)-automated remote-piloted solutions .....
## Horizonte 2020. Transporte. WP 2020

### 2. SAFE, INTEGRATED AND RESILIENT TRANSPORT SYSTEMS

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<tr>
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<th>Etapas</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG-2-11-2020</td>
<td>Network and traffic management for future mobility</td>
<td>RIA</td>
<td>20</td>
<td>Two Stages</td>
</tr>
<tr>
<td>MG-2-12-2020</td>
<td>Improving road safety by effectively monitoring working patterns and overall fitness of drivers</td>
<td>RIA</td>
<td>7</td>
<td>Two Stages</td>
</tr>
<tr>
<td>MG-2-13-2020</td>
<td>Coordination and support for an integrated freight transport and logistics system</td>
<td>CSA</td>
<td>1</td>
<td>Single Stage</td>
</tr>
<tr>
<td>MG-2-14-2020</td>
<td>The effects of automation on the transport labour force, future working conditions and skills requirements</td>
<td>CSA</td>
<td>2,5</td>
<td>Single Stage</td>
</tr>
</tbody>
</table>
## 3. GLOBAL LEADERSHIP AND COMPETITIVENESS

<table>
<thead>
<tr>
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<th>Budget (Million EUR)</th>
<th>Etapas</th>
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<tbody>
<tr>
<td>MG-3-4-2020</td>
<td>Innovative electric network architectures and systems, optimising global energy, electrical power, data and communication for aviation</td>
<td>RIA</td>
<td>10</td>
<td>Single Stage</td>
</tr>
<tr>
<td>MG-3-5-2020</td>
<td>Next generation multifunctional and intelligent airframe and engine parts, with emphasis on manufacturing, maintenance and recycling</td>
<td>RIA</td>
<td>15</td>
<td>Single Stage</td>
</tr>
<tr>
<td>MG-3-6-2020</td>
<td>Towards sustainable urban air mobility</td>
<td>RIA</td>
<td>15</td>
<td>Single Stage</td>
</tr>
<tr>
<td>MG-3-7-2020</td>
<td>Improved Production and Maintenance Processes in Shipyards</td>
<td>IA</td>
<td>15</td>
<td>Single Stage</td>
</tr>
<tr>
<td>MG-3-8-2020</td>
<td>'First of a Kind' solutions for sustainable transport and mobility: EU initiative for accelerating EU-wide market access, scale up and derisking</td>
<td>CSA</td>
<td>1,5</td>
<td>Single Stage</td>
</tr>
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</table>
SESAR 2020 Programme

EU Multiannual Financial Framework 2014-2020 contribution

1.585M€

Exploratory Research
85M€

Applied Research & Validation
1.200 M€

Very Large Scale Demonstrations
300M€

SESAR JU PPP
500 M€

CDTI Centro para el Desarrollo Tecnológico Industrial | E.P.E.
20 M € aprox, single Stage

30 January - 29 April 2020 17:00:00 Brussels time

Q&A functional mailbox (info-call@sesarju.eu) is Friday 17 April 2020 (eob).

Topic 1: Optimised use of Airspace

Topic 2: Integrated Trajectory Management

Topic 3: U-space capabilities and services to enable Urban Air Mobility

Topic 4: Environmental sustainability
Clean Sky 2 Programme Set-up

EU Funding: ~1.8bn€
Private Members: ~2.2bn€

Innovative Aircraft
Demonstrator Platforms (IADPs)

- Large Passenger Aircraft
- Regional Aircraft
- Fast Rotorcraft

Integrated Technology Demonstrators (ITDs)

- Airframe ITD
- Engines ITD
- Systems ITD

Transverse Activities (TAs)

- Eco-Design
- Technology Evaluator

- Small Air Transport
CS2 Participation

≤ 40% of EU funding reserved for CS2 Leaders

> 60% of EU funding open to competition via open calls:

1477 participations (over 800 unique entities)

Up to 30% for Core Partners (becoming Members once selected)
At least 30% for CfP (i.e. Partners as in CS) plus CfTs

>1bn€ of EU funding in play, via calls

CS2 Participation

334
Industry Members

420
SMES

373
Research Centres

350
Universities

28
Countries

110
Regions

>466
Grants

CDTI Centro para el Desarrollo Tecnológico Industrial | E.P.E.
11th Call for Proposal at a glance

Key dates to remember*

- Call Launch: ~14 January 2020
- Call Closure: 28 April 2020, 17:00 (Brussels Time)
- Evaluation Phase: May - July 2020
- Q&A last publication**: ~26 March 2020
- Technical sessions & GAP preparation: Q3-Q4 2020
- Indicative Start date of activities: > Q4 2020

* Dates are provided as indicative/target dates.
** Questions received until 13th March 2020, 17.00 (Brussels Time) will be answered after analysis and published when appropriate.

IMPORTANT:

The Call is currently open and all background documents related to this Call are available via the H2020 Funding & Tenders Portal since 14 January 2020. Applicants are invited to check regularly the Portal for the Call latest updates incl. Q&A releases.
Final and Valid Call documents via the **H2020 Funding & Tenders Opportunities Portal**

![Download all documents](image-url)

[Info-Call-CFP-2020-01@cleansky.eu](mailto:Info-Call-CFP-2020-01@cleansky.eu) by the 13th March 2020, 17:00 (Brussels Time)

**Important:** For a valid application, only the Call documents published on the **H2020 Funding & Tenders Opportunities Portal** will be considered.

**Note:** Q&A Release nr. 1 available via the H2020 Funding & Tenders Opportunities Portal since 14 January!
CfP11 - Call Overview

The call contains **35 Topics** with total available funding of ~ **45 M€** (including **4 Thematic Topics**):

<table>
<thead>
<tr>
<th>SPD Area</th>
<th>No. of topics</th>
<th>Ind. topic Funding (in M€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IADP Large Passenger Aircraft</td>
<td>16</td>
<td>19.60</td>
</tr>
<tr>
<td>IADP Regional Aircraft</td>
<td>1</td>
<td>0.80</td>
</tr>
<tr>
<td>IADP Fast Rotorcraft</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ITD Airframe</td>
<td>4</td>
<td>2.85</td>
</tr>
<tr>
<td>ITD Engines</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ITD Systems</td>
<td>7</td>
<td>5.35</td>
</tr>
<tr>
<td>Technology Evaluator</td>
<td>3</td>
<td>1.50</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>31</strong></td>
<td><strong>30.10</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thematic Topics</th>
<th># of topics</th>
<th>Ind. topic funding (M€)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>4</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

not legally binding
## List of Topics for Calls for Proposals (CFP11) – Part B

<table>
<thead>
<tr>
<th>Identification Code</th>
<th>Title</th>
<th>Type of Action</th>
<th>Value (Funding in M€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JTI-CS2-2020-CFP11-THT-11</td>
<td>High power density/multifunctional electrical energy storage solutions for aeronautic applications</td>
<td>RIA</td>
<td>1.20</td>
</tr>
<tr>
<td>JTI-CS2-2020-CFP11-THT-12</td>
<td>Advanced High Power Electrical Systems for High Altitude Operation</td>
<td>RIA</td>
<td>1.00</td>
</tr>
<tr>
<td>JTI-CS2-2020-CFP11-THT-13</td>
<td>Sustainability of Hybrid-Electric Aircraft System Architectures</td>
<td>RIA</td>
<td>1.60</td>
</tr>
<tr>
<td>JTI-CS2-2020-CFP11-THT-14</td>
<td>Scalability and limitations of Hybrid Electric concepts up to large commercial aircraft</td>
<td>RIA</td>
<td>0.80</td>
</tr>
</tbody>
</table>
A tener en cuenta....

Admissibility conditions

70-page limitation for non-thematic topics, 30-page limitation for thematic topics

Excellence: For Thematic Topics to determine the ranking, the score for the criterion ‘excellence’ will be given a weight of 1.5

Impact: For Innovation actions to determine the ranking, the score for the criterion ‘impact’ will be given a weight of 1.5

Implementation: Efficient and well justified application of resources

Ethical Issues raised in Calls for Partners in Clean Sky

Dissemination & Exploitation plan, communication. Open access

CDTI Centro para el Desarrollo Tecnológico Industrial | E.P.E.

not legally binding
Spain reaches fourth position in Clean Sky 2 returns on investment, with more than 110 M€, more than 13,5 % of total budget (grants) in open calls (up to date).
Break-down of Spanish participation in Clean Sky

Break-down of Spain's participation in CS2 ITD/IADPs

Profile of participating organisations in CS2 calls
Clean Sky working with Member States and Regions

Memoranda of Understanding between Clean Sky and Member States / Regions

18 MEMORANDA OF UNDERSTANDING AT NATIONAL OR REGIONAL LEVEL

- OCCITANIE (FR)
- CATALONIA (ES)
- CASTILLA LA MANCHA (ES)
- VÄSTRA GÖTALAND (SE)
- ÖSTERGÖTLAND (SE)
- ROMANIA (NATIONAL LEVEL)
- ANDALUCÍA (ES)
- CAMPANIA (IT)
- CZECH REPUBLIC (NATIONAL LEVEL)
- ZUID-HOLLANDE (NL)
- FLEVOLAND (NL)
- PORTUGAL (NATIONAL LEVEL)
- CASTILLA Y LEÓN (ES)
- PODKARPACIE (PL)
- GREECE (NATIONAL LEVEL)
- STEREA ELLADA (GR)
- BRANDENBURG (DE)
- NOUVELLE-AQUITAINE (FR)

By November 2019

- 18 MoUs
- > 40 Pilot projects
- Approx. 50m€ funding
- 11 Synergy Labels

>60 Regions/Countries with priorities in RIS3
European Green Deal

“We are on track to meet our ambitious Paris Agreement goals and 2030 targets. But we need to go further and faster if we are serious about climate neutrality in 2050. We currently have a goal of 40% emissions reduction by 2030. But we have to be more ambitious. Carbon emissions must have a price. Every person and every sector will have to contribute.

Ursula von der Leyen, President-elect of the European Commission
European Green Deal
The Green Deal Call

- As stated in the Green Deal Communication, “tackling climate and environmental-related challenges is this generation’s defining task”.

- The new call should respond to the urgency of the current situation and the ambition of the new Commission.

- It should therefore follow a different logic than the typical Horizon 2020 calls.

- Budget of the order of 1 billion EUR
TOWARDS FP9: Programme Structure (work in progress)

The key novelties under discussion for FP9 are:

- the **mission-approach** to enhance the impact of European R&I funding, and
- a fully-fledged **European Innovation Council**

**PART I: Excellent Science**

- ERC
- MSCA
- Research Infrastructures

**PART II: Global Challenges & European Industrial Competitiveness**

- Thematic clusters
  - Health
  - Culture, Creativity and Inclusive Society
  - Civil Security for Society
  - Digital, Industry & Space
  - **Climate, Energy & Mobility**
  - Bioeconomy, Food, Natural Resources, Agriculture and Environment

Implemented via:
- (i) regular calls for proposals,
- (ii) partnerships and
- (iii) missions.

JRC (non nuclear actions)

**PART III: Innovative Europe**

- EIC
  - European Innovation Ecosystem

Improve access to risk finance

Widening Participation and Strengthening the European Research Area
Budget
€100 billion*

Clusters: implemented through usual calls, missions & partnerships

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Budget (€ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>€ 7.7</td>
</tr>
<tr>
<td>Inclusive and Secure Societies</td>
<td>€ 2.8</td>
</tr>
<tr>
<td>Digital and Industry</td>
<td>€ 15</td>
</tr>
<tr>
<td>Climate, Energy and Mobility</td>
<td>€ 15</td>
</tr>
<tr>
<td>Food and Natural Resources</td>
<td>€ 10</td>
</tr>
<tr>
<td>Joint Research Centre</td>
<td>€ 2.2</td>
</tr>
</tbody>
</table>

* This envelope includes EUR 3.5 billion allocated under the InvestEU Fund.
## Horizonte Europa. Candidatos Partnerships

### HEALTH
- EU-Africa Global Health
- Innovative Health Initiative
- Chemicals Risk Assessment
- Fostering an ERA for Health research
- Large-scale innovation and transformation of health systems in a digital and ageing society
- Pre-clinical / clinical health research
- Personalised Medicine
- Rare Diseases

### DIGITAL, INDUSTRY AND SPACE
- High Performance Computing
- Key Digital Technologies
- Smart Networks and Services
- AI, data and robotics
- Photonics Europe
- Clean Steel - Low Carbon Steelmaking
- European Metrology
- Made in Europe
- Carbon Neutral and Circular Industry
- Global competitive space systems

### CLIMATE, ENERGY AND MOBILITY
- Transforming Europe's rail system
- Integrated Air Traffic Management
- Clean Aviation
- Clean Hydrogen
- Built environment and construction
- Towards zero-emission road transport
- Mobility and Safety for Automated Road Transport
- Batteries
- Clean Energy Transition
- + Waterborne (TBD) + SSCC(TBD) ?

### FOOD, BIOECONOMY, NATURAL RESOURCES, AGRICULTURE AND ENVIRONMENT
- Accelerating farming systems transition
- Animal health: Fighting infectious diseases
- Environmental Observations for a sustainable EU agriculture
- Rescuing biodiversity to safeguard life on Earth
- A climate neutral, sustainable and productive Blue Economy
- Safe and Sustainable Food System for People, Planet & Climate
- Circular bio-based Europe
- Water4All: Water security for the planet

### PILLAR III AND CROSS-PILLAR
- EIT Climate KIC
- EIT Health
- EIT Manufacturing
- EIT Food
- EIT InnoEnergy
- EIT Manufacturing
- EIT Raw Materials
- EIT Digital
- EIT Urban Mobility
- Innovative SMEs
- European Open Science Cloud (EOSC)

---

Institutionalised partnerships

---
Horizonte Europa. Riesgos

....to cut €35 to 85 billion from the EU’s overall 2021-2027 budget

<table>
<thead>
<tr>
<th>Budget size, % of EU27 GNI</th>
<th>Commission proposal for 2021-2027</th>
<th>Finnish proposal for 2021-2027</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget size, euros (2018 prices)</td>
<td>€1.135 trillion</td>
<td>€1.05-€1.1 trillion</td>
</tr>
</tbody>
</table>

Policy area by share of budget

<table>
<thead>
<tr>
<th>Policy Area</th>
<th>Commission proposal for 2021-2027</th>
<th>Finnish proposal for 2021-2027</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohesion (2018 prices)</td>
<td>29.1% (€330.3 billion)</td>
<td>29.6%-29.8% (€310.8-€327.8 billion)</td>
</tr>
<tr>
<td>Agriculture (2018 prices)</td>
<td>28.6% (€324.6 billion)</td>
<td>30.9%-30.5% (€324.45 - €363 billion)</td>
</tr>
<tr>
<td>Other (incl. Horizon Europe) (2018 prices)</td>
<td>35.6% (€404.06 billion, including €83 billion for Horizon Europe, or €94.1 billion in current prices)</td>
<td>32.8%-33.0% (€344.4-€363 billion, including ??? for Horizon Europe)</td>
</tr>
<tr>
<td>Administration (2018 prices)</td>
<td>6.7% (€76.05 billion)</td>
<td>6.7% (€70.35-€73.7 billion)</td>
</tr>
</tbody>
</table>

The EU’s next research programme, Horizon Europe, faces a cut of €12 billion, according to Christian Ehler, one of the MEPs who steered it through the European Parliament.
Timeline of the preparations in Horizon Europe

2019
- June: Consultation on future EU Partnerships
- Sep-Nov: Submission of IA drafts to Regulator
- Dec: Launch of interservice consultations

2020
- Jan: Adoption of EC proposals for initiatives
- Feb: Negotiation with Council (and EP) and adoption
- Mar: High-Level CA Vision handover to EC
- Apr: Start of IA
- May: Submission of CA proposal law EC Template
- Jun: Submission of CA Technical Outline & SRIA/roadmap
- Jul-Aug: Public consultation of SRIA
- Sep-Nov: Hearings with Regulatory Scrutiny Board
- Dec: Launch of 1st EU Partnerships under Horizon Europe

2021
- Jan: Preparation, e.g. first Work plan and Call definitions/roadmap

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The challenge of transforming the aviation paradigm

An Ambitious Vision for Clean Aviation
+ info sobre programas y ayudas para la internacionalización de la I+D+I española


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