SC4-Smart, Green and Integrated Transport
2018-2020

Dr Bob Flynn
Horizon 2020: National Delegate & Contact Point - Smart, Green and Integrated Transport

Horizon 2020 national support network led by Enterprise Ireland
1. Excellent Science
- European Research Council
- Future and Emerging Technologies
- Marie Curie Actions
- Research Infrastructures

2. Industrial Leadership
- Leadership in Enabling & Industrial Technologies
  - Information and communication technologies
  - Nanotechnologies
  - Advanced materials
  - Biotechnology
  - Advanced manufacturing and processing
  - Space
- Access to Risk Finance
- Innovation in SME

3. Societal Challenges
- 7 Challenges
  - Health, Demographic Change and Wellbeing
  - Food security, sustainable agriculture, marine and maritime research and the bio-economy
  - Secure, Clean and Efficient Energy
  - Smart, Green and Integrated Transport
  - Climate Action, Resource Efficiency and Raw Materials
  - Europe in a changing world: Inclusive, Innovative and Reflective Societies
  - Secure Societies – Protecting Freedom and Security of Europe and its Citizens

Joint Research Centre (JRC)
Widening Participation
Science with & for Society
European Institute of Innovation and Technology (EIT)
Joint Programming P2P
Joint Technology Initiatives (JTIs) P2B
SC 4 - Smart, Green and Integrated Transport

Industry Managed Programmes
Focused

Joint Technology Initiatives (JTI’s)

~50% Budget

EU Managed Programme
All modes/policy/inter-modal

Transport Work Programme

~50% Budget

Own call for proposals

2 year WP
Annual Calls for Proposals

Bob Flynn - Horizon 2020 - Launch 18th Oct. 2017
The Transport Work Programme

EUROPEAN TECHNOLOGY PLATFORMS
- ACARE: Aviation
- ERRAC: Rail
- ERTRAC: Road/Automotive
- WATERBORNE: Maritime
- ALICE: Logistics
- EpoSS/ECTP: Smartgrids/Infrastructure

EUROPEAN Parliament

Transport WORK PROGRAMME

ADVISORY GROUPS
Transport Advisory Group

MEMBER STATES
H2020 Transport Programme Committee
Technology Platforms – What are they and what do they do?..

“Industry-led stakeholder forums with the aim of defining the European medium to long term research and innovation agenda”

- They produce Strategic Research & Innovation Agendas / Technology Roadmaps
- Initiators of the large PPP’s (Joint Technology Initiatives) managed directly by the industry e.g. CLEAN SKY, Shift2Rail etc..
- Collaborative PPP’s - e.g. European Green Vehicle Initiative (EGVI)

The Technology Platforms *strongly influence* the content of the Work Programmes in Horizon 2020
Horizon 2020 4 Focus Areas - 2018-2020

• Building a low-carbon, climate resilient future
• Digitising and transforming European industry and services
• The Circular Economy - Connecting economic and environmental gains –
• Boosting the effectiveness of the Security Union
Horizon 2020 4 Focus Areas - 2018-2020

- Building a low-carbon, climate resilient future
- Digitising and transforming European industry and services
- the Circular Economy - Connecting economic and environmental gains –
- Boosting the effectiveness of the Security Union

Transport WP 2018-2020
2018-2020 Calls for Proposals

Three Calls:

• Mobility for Growth (MG) *(Building a low-carbon, climate resilient future)*
• Green Vehicles (GV) *(Building a low-carbon, climate resilient future)*
• Automated Road Transport (ART) *(Digitising and transforming European industry and services)*

Summary WP2018-2020
Types of Actions

• Research and Innovation Actions (RIA) TRL 1-4

  Description: Action primarily consisting of activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution.

  Funding rate: 100%

• Innovation Actions (IA) TRL 4-6

  Description: Action primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. For this purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.

  Projects may include limited research and development activities.

  Funding rate: 70% (except for non-profit legal entities, where a rate of 100% applies)

• Coordination and Support Actions (CSA)

  These are actions that cover not the research itself, but the coordination and networking of projects, programmes and policies. Funding rate: 100%
## Budget 2018-2019 - €614 Million

<table>
<thead>
<tr>
<th>Project Description</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Mobility for Growth Call</td>
<td>197.4</td>
<td>168.7</td>
<td>147.6</td>
<td>513.6</td>
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<tr>
<td>Automated Road Call</td>
<td>15</td>
<td>38</td>
<td>50</td>
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<tr>
<td>Green Vehicle Call</td>
<td>56</td>
<td>78</td>
<td>112</td>
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<tr>
<td>Contribution to Fast Track to Innovation (FTI)</td>
<td>14.8</td>
<td>14.8</td>
<td>14.8</td>
<td>44.4</td>
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<tr>
<td>Smart Cities</td>
<td>3</td>
<td>3</td>
<td>-</td>
<td>6</td>
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<tr>
<td>Other actions/Elena</td>
<td>11.4</td>
<td>13</td>
<td>6.6</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>298.6</strong></td>
<td><strong>315.5</strong></td>
<td><strong>330.9</strong></td>
<td><strong>945</strong></td>
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<tr>
<td>Contribution to SME Instrument</td>
<td>58.2</td>
<td>83.4</td>
<td>95.4</td>
<td>237</td>
</tr>
</tbody>
</table>

Bob Flynn - Horizon 2020 - Launch 18th Oct. 2017
Call - Mobility for Growth

1. Low Carbon and Sustainable Transport
2. Safe, Integrated and Resilient Transport Systems
3. Global leadership, competitiveness: business models and markets
4. Accounting for the people: demand, needs and behaviour; inclusion and access

A number of topics now have a large Social Science aspect (particularly in section 4 "Accounting for the people"). Identified as part of the CIMULACT 6 project (http://www.cimulact.eu) which addressed “European citizens' visions of the future and research and innovation priorities”
**Aims:**

- Support the transition towards zero-emission and quieter mobility across all transport modes.
- Improved tools and mechanisms for monitoring and detection of emissions and noise in road vehicles, ships and aircraft.
- Provide evidence of long term impacts of the current developments in transport technologies and business models on spatial planning to support decision making processes in policy and planning.

**MG-1-1-2018:** InCo flagship on reduction of transport impact on air quality (RIA)

**MG-1-2-2018:** Sustainable multi-modal inter-urban transport, regional mobility and spatial planning (RIA)

**MG-1-3-2018:** Harnessing and understanding the impacts of changes in urban mobility on policy making by city-led innovation for sustainable urban mobility (RIA)

**MG-1-4-2018:** Hardening vehicle environmental protection systems against tampering (RIA)
### LOW-CARBON AND SUSTAINABLE TRANSPORT

| MG-1-5-2019: | Advancements in aerodynamics and innovative propulsion systems for quieter and greener aircrafts (RIA) |
| MG-1-6-2019: | Aviation operations impact on climate change (RIA) |
| MG-1-7-2019: | Future propulsion and integration: towards a hybrid/electric aircraft (RIA) |
| MG-1-8-2019: | Retrofit Solutions and Next Generation Propulsion for Waterborne Transport (IA & RIA) |
| Subtopic A | develop concept for fuel cell powered ship (RIA) |
| Subtopic B | ship propulsion demonstration to TRL 5/6 (IA) |
| MG-1-9-2019: | Upgrading transport infrastructure in order to monitor noise and emissions (RIA) |
| MG-1-10-2019: | Logistics solutions that deal with requirements of the ‘on demand economy’ and for shared-connected and low-emission logistics operations (RIA) |

SAFE, INTEGRATED AND RESILIENT TRANSPORT SYSTEMS

<table>
<thead>
<tr>
<th>Project Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG-2-1-2018</td>
<td>Human Factors in Transport Safety (RIA)</td>
</tr>
<tr>
<td>MG-2-2-2018</td>
<td>Marine Accident Response (RIA &amp; IA)</td>
</tr>
<tr>
<td>MG-2-5-2018</td>
<td>Innovative technologies for improving aviation safety and certification in icing conditions (RIA)</td>
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<tr>
<td>MG-2-3-2018</td>
<td>Airworthiness of mass-market drones (CSA)</td>
</tr>
<tr>
<td>MG-2-4-2018</td>
<td>Coordinating national efforts in modernizing transport infrastructure and provide innovative mobility services (CSA)</td>
</tr>
<tr>
<td>MG-2-6-2019</td>
<td>Moving freight by Water: Sustainable Infrastructure and Innovative Vessels (RIA)</td>
</tr>
<tr>
<td>MG-2-7-2019</td>
<td>Safety in an evolving road mobility environment (RIA)</td>
</tr>
<tr>
<td>MG-2-8-2019</td>
<td>Innovative applications of drones for ensuring safety in transport (RIA)</td>
</tr>
<tr>
<td>MG-2-9-2019</td>
<td>Integrated multimodal, low-emission freight transport systems and logistics (InCo Flagship) (RIA)</td>
</tr>
</tbody>
</table>
GLOBAL LEADERSHIP AND COMPETITIVENESS

Aims:

• Contribute to the development of advanced technological capabilities in transport exploiting both evolutionary and disruptive technologies

• Reinforce European global leadership and competitiveness in disruptive technologies for development of vehicles with the highest level of safety, comfort, connectivity, automation and life-cycle performance comfort, connectivity, automation and life-cycle performance.

• Investigate novel passenger-centric business cases, spanning multiple transport stakeholders.

MG-3-1-2018: Multidisciplinary and collaborative aircraft design tools and processes (RIA)
MG-3-2-2018: The autonomous ship (IA)
MG-3-3-2018: "Driver" behaviour and acceptance of connected, cooperative and automated transport (RIA)
ACCOUNTING FOR THE PEOPLE

Aims:
• to create an innovative and inclusive digital travel environment that improves accessibility and social inclusion, travel experience and citizen well-being

MG-4-1-2018: New regulatory frameworks to enable effective deployment of emerging technologies and business/operating models for all transport modes (CSA)

MG-4-2-2018: Building Open Science platforms in transport research (CSA)

MG-4-3-2018: Demographic change and participation of women in transport (RIA)

MG-4-5-2019: An inclusive digitally interconnected transport system meeting citizens’ needs (RIA)

CIMULACT Citizen and Multi-Actor Consultation on Horizon2020 Project www.cimulact.eu
Call - Green Vehicles (GV) (single stage)

Focus Area: Building a low-carbon, climate resilient future:
Aims to: support the wide introduction of electrified vehicles in Europe

• Advances in electric batteries (production of elementary cells and pack assembly)
• New architectures and components to support the next generation of electrified vehicles
• Methods to improve the recharging experience from end-users view-point
• Development of digitalised production environments and the use of advanced materials
• Address the urban dimension of introducing electrified vehicles
• Battery electrochemistries for BEV and PHEV - NMBP Programme
Call - Green Vehicles (GV) (single stage)

- **LG-GV-01-2018** Integrated, brand-independent architectures, components and systems for next generation electrified vehicles optimised for the infrastructure (IA)

- **LG-GV-02-2018** Virtual product development and production of all types of electrified vehicles and components (RIA)

- **LG-GV-03-2019** User centric charging infrastructure (IA)

- **LG-GV-04-2019** Low-emissions propulsion for long-distance trucks and coaches (IA)

- **LG-GV-05-2019** Urban mobility and sustainable electrification in large urban areas in developing and “emerging economies” (IA)

- (2020) Next generation and realisation of battery packs for BEV and HEV

- (2020) Advanced light materials and their production processes for automotive applications

- (2020) Reducing the environmental impact of hybrid light duty vehicles

- (2020) Next generation electrified vehicles for urban use

Call - Blue Growth (BG) (single stage)

- **MG-BG-01-2018** Unmanned Autonomous surveys at sea (RIA) >TRL 5 >€8m

- **MG-BG-02-2019** Ship emission control scenarios, marine environment, impact and mitigation (RIA) >€8m
Call - Automated Road Transport (ART) Call

Focus Area "Digitising and transforming European industry and services" call

Aims to: To promote market Introduction of Highly Automated Driving Systems to SAE Level 4
Focus on: Large Scale Demonstrations to test performance and safety and the changing role of the “driver”

Will include:

- Digital connectivity (V2V and V2X)
- Satellite navigation technologies (EGNOS and GALILEO)
- Big Data
- Internet of Things (IoT)
- Artificial Intelligence
Call - Automated Road Transport (ART)
Focus Area "Digitising and transforming European industry and services" call

• DT-ART-01-2018: Testing, validation and certification procedures for highly automated driving functions under various traffic scenarios based on pilot test data (RIA)

• DT-ART-02-2018: Support for networking activities and impact assessment for road automation
  Sub topic: Assessment of impacts, benefits and costs of connected, cooperative and automated driving systems (RIA)
  Sub topic: Networking activities to support connected, cooperative and automated driving (CSA)

• DT-ART-03-2019: Human centred design for the new driver role in highly automated vehicles (RIA)

• DT-ART-04-2019: Developing and testing shared, connected and cooperative automated vehicle fleets in urban areas for the mobility of all (IA)

• (2020) Efficient and safe connected and automated heavy-duty vehicles in real logistics operations
• (2020) Large-scale, cross-border demonstration of highly automated driving functions for passenger cars

LOW-CARBON AND SUSTAINABLE TRANSPORT
- Impact of new mobility User behaviour and behavioural analysis
- Needs of vulnerable transport users/cultural issues
- Socio-cultural and spatial impacts of planning in large metropolitan regions
- Overcoming social segregation and inequalities, including gender inequalities
- New business models and new institutional and financing structures
- New policy/legislation/data statistics

SAFE, INTEGRATED AND RESILIENT TRANSPORT SYSTEMS
- User behaviour and behavioural analysis/human factors
- Legal and regulatory issues/governance of complex systems
- Incorporation of economic, social and environmental dimensions to improve the current transport system, increase its robustness and support safety, security and quality of life.
- Drones - public acceptance, privacy issues and legal aspects
- Cultural diversity/age and gender issues in transport safety
- Education and training needs
Social Sciences - Transport WP 2018-2020

- GLOBAL LEADERSHIP AND COMPETITIVENESS
  - Public acceptance of Connected and Automated transport for vulnerable road users
  - HMI
  - Regulatory and legal requirements
  - Ethics/ethical decision making

- ACCOUNTING FOR THE PEOPLE
  Overall objective to improve transport accessibility, and social inclusion, travel experience and citizen well being: See H2020 CIMULACT project ([http://www.cimulact.eu](http://www.cimulact.eu)) which addressed “European citizens' visions of the future and research and innovation priorities”
  - regulatory frameworks, business models,
  - Incorporation of economic, social and environmental dimensions to improve the current transport system
  - Inclusion of economic, political, social, demographic, cultural and historic variables
  - Demographic change and participation of women in Transport related careers / gender assessments
  - Transport systems meeting citizens needs
  - Skills and strategies, vulnerable user exclusion/digital divide due to social and spatial aspects
“Twinning” & International Cooperation (InCo)

- “Twinning”
- International Cooperation 5 - Flagships

  - Reduction of transport impact on air quality and enforcement of relevant EU and international regulations.
  - Integrated, multimodal, low-emission freight transport systems and logistics
  - Urban mobility and sustainable
  - Greener and safer aviation in a smaller world
  - EU-US Road vehicle automation and safety
Twinning (US)

Twinning of projects

- Twinning with entities participating in projects funded by DoT- US

www.transportation.gov

The process

- Identification of project funded by DoT US
- Agreement on common areas for twinning/cooperation
- Projects on both sides agree on twinning activities and respective efforts
- Collaboration could consist of exchanges of information, data, visits, methodologies, researchers, results, joint workshops, publications, etc.
- No merging of services or resources (including financial)- non beneficiary
# International Cooperation Flagships

<table>
<thead>
<tr>
<th>Area</th>
<th>Topic</th>
<th>Title</th>
<th>Targeted Opening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperation on particles in relation to health and climate change</td>
<td>Low-Carbon &amp; Sustainable transport</td>
<td>LC-MG-1-1-2018 InCo flagship on reduction of transport impact on air quality</td>
<td>Asian (e.g. China), CELAC (Latin America) and US</td>
</tr>
<tr>
<td></td>
<td>Integrated multimodal freight transport systems and (the last mile) logistics</td>
<td>LC-MG-2-9-2019 InCo Flagship: Integrated multimodal, low-emission freight transport systems and logistics*</td>
<td>Canada, China, Japan, and US</td>
</tr>
<tr>
<td>Clean Urban transport in medium/mega sized cities in developing and emerging economies</td>
<td>Green Vehicle</td>
<td>LC-GV-05-2019 InCo flagship on “Urban mobility and sustainable electrification in large urban areas in developing and emerging economies</td>
<td>Africa, Asia (e.g. China, India) and CELAC</td>
</tr>
</tbody>
</table>

* Proposals should foresee “twinning” with projects funded by US-DoT
• **LC-MG-1-1-2018 InCo flagship on reduction of transport impact on air quality (Research and Innovation Action)**

  6 Sub - Topics
  
  - A - exploring the impact of the users driving behaviour and maintenance choices on emissions
  - B - development of a vehicle “Green Index” for consumers
  - C - remote sensing of vehicle emissions to support air quality plans and enforcement agencies
  - D - enforcement of shipping emissions
  - E - measurement of pollutants and impact of air quality around airports
  - F - In vivo/vitro assessment of nano-particulate and VOC’s from engines. Focus on biological processes

  International participation with Asian (e.g. China), CELAC and US

  **Budget €30 million - project size €2-5 million**

• **LC-MG-2-9-2019 InCo Flagship: Integrated multimodal, low-emission freight transport systems and logistics (Research and Innovation Action)**

  - New logistic concepts
  - Demonstration of technological and business integration / Physical Internet /GALILEO
  - Issues surrounding new trade routes - Geopolitical and trade aspects
  - Impact of emerging technologies e.g. blockchain, 3D printing, 5G
  - Governance, privacy and cybersecurity with respect to cargo

  International participation with Canada, China, Japan, and US

  **Budget €14 million - project size €3-7 million**
• **LC-GV-05-2019 InCo flagship on “Urban mobility and sustainable electrification in large urban areas in developing and emerging economies (Innovation Action)**
  
  - Development of a toolbox for advance management strategies for more efficient electric mobility
    - Vehicles, infrastructure and operational integration of all electrified road transport
  - Deployment and operation of charging infrastructure
  - Demonstrations in several pilot cities in Europe, Asia, Africa and/or CELAC
  - Implementation concepts to scale up demonstration

  International participation with Asia, (e.g. China), Africa, CELAC and US

**Budget €18 million - project size €15-18 million**
<table>
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<tr>
<th>Area</th>
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<tbody>
<tr>
<td>Aviation International Cooperation Flagship – Safer and Greener in a Smaller world</td>
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<tr>
<td>Low-Carbon &amp; Sustainable transport</td>
<td>LC-MG-1-6-2019</td>
<td>Aviation operations impact on climate change</td>
<td>China (bilateral): 2 out of 4 Sub-areas</td>
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<tr>
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<td>LC-MG-1-7-2019</td>
<td>Future propulsion and integration: towards a hybrid/electric aircraft</td>
<td>Canada and Japan</td>
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<tr>
<td>Safety</td>
<td>LC-MG-2-5-2018</td>
<td>Innovative technologies for improving aviation safety and certification in icing conditions</td>
<td>Australia, Brazil, Canada, Japan, Russia and US</td>
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<tr>
<td>EU-US Road vehicle automation and safety</td>
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<tr>
<td>Automated Road Transport</td>
<td>DT-ART-01-2018</td>
<td>Testing, validation and certification procedures for highly automated driving functions under various traffic scenarios based on pilot test data*</td>
<td>US, Japan, South Korea, Singapore and/or Australia</td>
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<td>DT-ART-02-2018</td>
<td>Support for networking activities and impact assessment for road automation*</td>
<td>US, Japan, South Korea, Singapore and/or Australia</td>
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<td>DT-ART-03-2018</td>
<td>Human centred design of automated vehicles*</td>
<td>US, Japan, South Korea, Singapore and/or Australia</td>
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<tr>
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<td>DT-ART-04-2018</td>
<td>Developing and testing shared, connected and cooperative automated vehicle fleets in urban areas for the mobility of all*</td>
<td>US, Japan, South Korea, Singapore and/or Australia</td>
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</tbody>
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International Cooperation – Funding Agencies

http://ec.europa.eu/research/iscp/index.cfm?pg=countries
## Call Closing Dates

<table>
<thead>
<tr>
<th>Work Programme 2018-2020</th>
<th>2018</th>
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<tr>
<td></td>
<td>Opening</td>
<td>Closing</td>
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<tr>
<td>First Stage of 2 Stages</td>
<td>31/10/2017</td>
<td>24/1/2018</td>
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<tr>
<td>Second Stage of 2 Stages</td>
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<td>19/9/2018</td>
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</table>
Work Programme 2018-2020

UN - Sustainable Development Goals
www.un.org/sustainabledevelopment/sustainable-development-goals

The TRIMIS database: A database of projects at European (FP4, FP5, FP6, FP7 and Horizon 2020), national and international levels.
https://trimis.ec.europa.eu/
• Transport White Paper 2011

• COP21/COP22 UNFCCC - United Nations Framework Convention on Climate Change
  http://unfccc.int/2860.php

• “analysis of the identified measures and features regarding the way forward for EU vehicle safety”

Upcoming Events and Brokerage

29-30th October November 2017, Brussels
EGVIA-ERTRAC 1st European Conference Results from Road Transport Research in H2020

31st October 2017 Birmingham, UK
H2020 Transport Info Day UK

9-10th November 2017 Tallinn, Estonia
Digital Transport Days

16-19 April 2018 Vienna, Austria
TRA 2018
Horizon 2020 Transport Information & Brokerage day
Wednesday, 13th December 2017
Charlemagne Building, Brussels

- Registration for the info day is now open: https://ec.europa.eu/inea/en/registration-form-2017-transport-information-day-horizon-2020-work-programme
- Presentations from EU commission covering the 2018-2020 WP
- Brokerage event organised by the National Contact Points

Separate registration for brokerage event.
Thank you

Dr Bob Flynn
Horizon 2020: National Delegate & Contact Point - Smart, Green and Integrated Transport

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China Science and Technology Exchange Center (CSTEC) Mr. Dong Keqin E-mail: dongkq@cstec.org.cn Tel: +86 1068513370
SAFE INTEGRATED AND RESILIENT TRANSPORT SYSTEMS

MG-2-1-2018: Human Factors in Transport Safety (RIA)
MG-2-2-2018: Marine Accident Response (IA & RIA)
MG-2-3-2018: Airworthiness of mass-market drones (CSA)
MG-2-4-2018: Coordinating national efforts in modernizing transport infrastructure and provide innovative mobility services (CSA)
MG-2-5-2018: Innovative technologies for improving aviation safety and certification in icing conditions (RIA)
MG-2-6-2019: Moving freight by Water: Sustainable Infrastructure and Innovative Vessels (RIA)
MG-2-7-2019: Safety in an evolving road mobility environment (RIA)
MG-2-8-2019: Innovative applications of drones for ensuring safety in transport (RIA)
MG-2-9-2019: Integrated multimodal low-emission freight transport systems and logistics (Inco Flagship) (RIA)
GLOBAL LEADERSHIP AND COMPETITIVENESS

MG-3-1-2018: Multidisciplinary and collaborative aircraft design tools and processes (RIA)

MG-3-2-2018: The Autonomous Ship (IA)

MG-3-3-2018: “Driver” behaviour and acceptance of connected, cooperative and automated transport (RIA)
ACCOUNTING FOR THE PEOPLE

MG-4-1-2018: New regulatory frameworks to enable effective deployment of emerging technologies and business/operating models for all transport modes (CSA)

MG-4-2-2018: Building Open Science platforms in transport research (CSA)

MG-4-3-2018: Demographic change and participation of women in transport (RIA)

MG-4-4-2018-2019: Support for dissemination events in the field of Transport Research (CSA)

MG-4-5-2019: An inclusive digitally interconnected transport system meeting citizens’ needs (RIA)

MG-4-6-2019: Supporting Joint Actions on sustainable urban accessibility and connectivity (ERA-NET CoFund)

CIMULACT Project [www.cimulact.eu]
H2020 Focus areas 2018-200

• Building a low-carbon, climate resilient future
• Digitising and transforming European industry and services
• Connecting economic and environmental gains – the Circular Economy
• Boosting the effectiveness of the Security Union

The Transport part of the Work Programme will contribute to:
Societal Challenges

- Health, demographic change and wellbeing
- Blue Growth - Food security, sustainable agriculture, marine and maritime research & the bio economy
- Secure, clean and efficient energy
- Smart, Green and Integrated transport
- Environment - Climate action, resource efficiency and raw materials
- Security - Inclusive, innovative and secure societies
- Europe in a changing world –inclusive, innovative & reflective societies
## International Cooperation

<table>
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<th>Area</th>
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<tbody>
<tr>
<td>EU-US Road vehicle automation and safety</td>
<td>LC-MG-1-2-2018</td>
<td>Sustainable multi-modal inter-urban transport, regional mobility and spatial planning (RIA)</td>
<td>Australia, Japan, Singapore South Korea and US</td>
</tr>
<tr>
<td>Low-Carbon &amp; Sustainable transport</td>
<td>LC-MG-1-3-2018</td>
<td>Harnessing and understanding the impacts of changes in urban mobility on policy making by city-led innovation for sustainable urban mobility (RIA)</td>
<td>Australia, Japan, Singapore South Korea and US</td>
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<tr>
<td></td>
<td>LC-MG-1-9-2019</td>
<td>Upgrading transport infrastructure in order to monitor noise and emissions (RIA)*</td>
<td>Australia, Japan, Singapore South Korea and US</td>
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<tr>
<td></td>
<td>LC-MG-1-10-2019</td>
<td>Logistics solutions that deal with requirements of the 'on demand economy and for shared-connected and low-emission logistics operations (RIA)</td>
<td>Australia, Japan, Singapore South Korea and US</td>
</tr>
</tbody>
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