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HORIZON 2020

LE PROGRAMME DE RECHERCHE ET
D'INNOVATION DE L'UNION EUROPÉENNE

Présentation du programme de Travail Transport 2018 - 2020

Aix-en-Provence, le 11 octobre 2017

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Sommaire



Le défi sociétal Transports intelligents, verts et intégrés Appels 2018-2020

Appels 2018-2020

**Publication par la Commission Européenne
prévue le 31/10/2017**

Document de travail provisoire:

<https://ec.europa.eu/programmes/horizon2020/en/shaping-work-programme-2018-2020-societal-challenge-4-smart-green-and-integrated-transport>

PROGRAMME DE TRAVAIL 2018-2020

Objectifs

Prise en compte :

- des besoins des citoyens, entreprises et marchés européens
- du développement durable au niveau international et lutte contre le changement climatique (COP 21 et objectifs fixés par l'ONU)
- de l'évaluation mi-parcours H2020 : importance accrue donnée aux activités d'innovation et de démonstration

4 domaines clés :

- Construire un avenir avec faibles émissions de carbone et résistants aux phénomènes climatiques
- Numériser et transformer l'industrie et les services
- Economie circulaire : relier les avantages économiques et environnementaux
- Renforcer l'efficacité de la sécurité

PROGRAMME DE TRAVAIL 2018-2020

Nouveautés

- Structure simplifiée
- Nombre de sujets réduits
- Complémentarité des appels
- Impact plus important

4 orientations stratégiques :

- Utilisation efficace des ressources et respect de l'environnement
- Meilleure mobilité, plus de sécurité et sûreté
- 'Leadership' et compétitivité au niveau international
- Recherche socio-économique et comportementale, soutien pour la prise de décision politique

PROGRAMME DE TRAVAIL 2018-2020

Nouveautés

Coopération internationale renforcée :

- fléchée dans le titre du sujet pour certains appels (INCO)
- encouragée dans les autres
- certains jumelages (twinning) : échanges sur les stratégies R&I et priorités d'investissement

Conseil Européen de l'Innovation (CEI)

- Instrument PME
- pilote Fast Track for Innovation (FTI)
- FET-Open

PROGRAMME DE TRAVAIL TRANSPORT 2018-2020

- **Ouverture des appels : 31/10/2017**
- **Budget : 944.98 M€**
 - dont
 - 298,61 M€ pour 2018
 - 315.51 M€ pour 2019
 - 330.86 M€ pour 2020
- **3 appels principaux**
- **54 topics (dont 21 pour 2018)**
- **d'autres activités**

APPELS 2018-2019 – DATES CLES

Années	Appels	Dates ouverture	Dates clôture		
			En 1 étape	En 2 étapes	
				Etape 1	Etape 2
2018	Mobilité pour la croissance	31/10/2017	04/04/2018	30/01/2018	19/09/2018
	Transport routier automatisé	31/10/2017	Non connu		
	Véhicules verts	31/10/2017	Non connu		
2019	Mobilité pour la croissance (AAP deux étapes)	05/09/2018		16/01/2019	12/09/2019
	Mobilité pour la croissance (AAP une étape)	04/12/2018	24/04/2019		
	Transport routier automatisé	04/12/2018	Non connu		
	Véhicules verts	04/12/2018	Non connu		

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(H2020-MG-2018-2019-2020)

Objectifs

Alliance de la compétitivité et du bien être des citoyens, dans un contexte de réduction des émissions de carbone et de sécurité.



- Transport durable à faible émissions de carbone
- Systèmes de transport sûrs, intégrés et résistants
- Leadership mondial et compétitivité
- Prise en compte des personnes

MOBILITE POUR LA CROISSANCE (1/2)

- **Transport durable à faible émissions de carbone**
 - Vision '0 émission' et mobilité plus silencieuse
 - Innovations technologiques, aspects socio-économiques et réglementaires, sensibilisation du public
 - Nouvelles formes de mobilité, outils et mécanismes améliorés de contrôle et détection des émissions de polluants
 - Conseils auprès des autorités locales, régionales et nationales
- **Systèmes de transport sûrs, intégrés et résistants**
 - Déplacements porte-à-porte pour les passagers et le fret
 - Moyens de transport plus performants et plus efficaces, systèmes de gestion du trafic
 - Construction d'infrastructures et solutions innovantes de maintenance
 - Renforcement de la sécurité et de la qualité de vie des utilisateurs
 - Transport plus résilient et plus sûr

MOBILITE POUR LA CROISSANCE (2/2)

- **Leadership mondial et compétitivité**
 - Dans le domaine de la conception et de la construction
 - Technologies de transport innovantes : matériaux, procédés, technologies de pointe (automatisation & numérique)
 - Nouveaux modèles économiques
 - Environnement, confort et sécurité des transports
 - Outils pour l'analyse et le stockage d'une masse importante de données
- **Prise en compte des personnes**
 - Ecosystème de transport numérique innovateur et inclusif pour le bien-être des citoyens
 - Adoption des solutions de transport et mobilité novatrices
 - Equité et accessibilité, changements démographiques, acceptation
 - Conseils pour la prise de décision politique

Topic	Titre	Action type	Budget (M €)	
			2018	2019
BUILDING A LOW-CARBON, CLIMATE RESILIENT FUTURE: LOW-CARBON AND SUSTAINABLE TRANSPORT				
LC-MG-1-2-2018	Sustainable multi-modal inter-urban transport, regional mobility and spatial planning	RIA	12	
LC-MG-1-5-2019	Advancements in aerodynamics and innovative propulsion systems for quieter and greener aircrafts	RIA		15
LC-MG-1-6-2019	Aviation operations impact on climate change	RIA		10
LC-MG-1-7-2019	Future propulsion and integration: towards a hybrid/electric aircraft	RIA		15
LC-MG-1-8-2019	Retrofit Solutions and Next Generation Propulsion for Waterborne Transport	IA RIA		8 15
LC-MG-1-9-2019	Upgrading transport infrastructure in order to monitor noise and emissions	RIA		7

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*Sustainable multi-modal inter-urban transport,
regional mobility and spatial planning.*

Topic LC-MG-1-2-2018 (RIA)

Challenge

Assessing new forms of mobility in all transport modes, their infrastructures, travel flux evolution, spatial-economic development, environmental and quality-of-life issues...

Scope

Identification of new forms of mobility, comprehensive planning for the entire functional area, sustainable policies with proven environmental impact
→ *International cooperation - Twinning with US DOT*

Expected Impact

Evidence of long term impacts of innovative transport technologies and business models

Estimated EC contrib. per proposal: EUR 5-8 Moi

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Advancements in aerodynamics and innovative propulsion systems for quieter and greener aircrafts

Topic LC-MG-1-5-2019 (RIA)

Challenge

Noise reduction: interaction between engines and aerodynamics surface / engines interaction in aircraft architecture

Scope

Better understanding of noise source mechanisms → TRL 1 to 4

Expected Impact

Targets of the proposal are approaching the ACARE 2050 goals.

Estimated EC contrib. per proposal: EUR 3-5 Moi

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Aviation operations impact on climate change

Topic LC-MG-1-6-2019 (RIA)

Challenge

Mitigation strategies to minimise the negative effects by aviation on climate in the short-medium term and relevant for greener flight trajectories and operations.

Scope

- Propose a better scientific understanding of aviation emissions
- Propose and evaluate mitigation strategies towards operational improvements
- Propose and evaluate mitigation strategies towards greener flight trajectories
- Propose and evaluate mitigation strategies based on the use of alternative jet fuel pathways

Expected Impact

Improvement of climate model and the impact of the impact of aircraft emissions on climate

Estimated EC contrib. per proposal: EUR 2-3 Moi

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Future propulsion and integration: towards a hybrid/electric aircraft

Topic LC-MG-1-7-2019 (RIA)

Challenge

Develop future aviation propulsion and integration technologies with emphasis on hybrid-electric and full-electric propulsion

Scope

Feasibility design studies for aircraft energy system with integrated hybrid/electric propulsion and power generation architectures → TRL 1 to 4

International cooperation → Japan / Canada

Expected Impact

Contribute to Flightpath 2050 goals: emission-free aviation / next-generation European demonstrators

Estimated EC contrib. per proposal: EUR 3-5 Moi

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Retrofit Solutions and Next Generation Propulsion for Waterborne Transport

Topic LC-MG-1-8-2019 (RIA+IA)

Challenge

Reduction of emissions from waterborne transport

Scope

- Develop and validate a concept for a passenger ship powered primarily by high power fuel cells (RIA)
- Develop and validate the next generation high efficiency propulsion systems for ships using electrification and or clean fuels and or renewable energy sources - cost effective retrofit solutions for marine shipping / Inland waterways (IA)

Expected Impact

Retrofit solutions will reduce SO_x, NO_x and PM pollution from waterborne transport

Estimated EC contrib. per proposal: EUR 3-5 Moi (RIA) / EUR 4-6 Moi (IA)

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Upgrading transport infrastructure in order to monitor noise and emissions

Topic LC-MG-1-9-2019 (RIA)

Challenge

Development of innovative sensors (on board/on the side of infrastructure) to allow real-time monitoring and control transport noise and emission

Scope

- Equipement for integration into infrastructure to detect and identify vehicles exceeding the limites noise/emissions
 - New materials and negative emissions solutions
- *Twinning US DOT*

Expected Impact

Reduction of at least 30% in emissions and 20% in noise in targeted zones based on the measured level at the beginning of the project

Estimated EC contrib. per proposal: EUR 4-7 Moi

Topic	Titre	Action type	Budget (M €)	
			2018	2019
SAFE, INTEGRATED AND RESILIENT TRANSPORT SYSTEMS				
MG-2-1-2018	Human Factors in Transport Safety	RIA	18	
MG-2-2-2018	Marine Accident Response	IA RIA	35	
MG-2-5-2018	Innovative technologies for improving aviation safety and certification in icing conditions	RIA	16	
MG-2-6-2019	Moving freight by Water: Sustainable Infrastructure and Innovative Vessels	RIA		30
MG-2-8-2019	Innovative applications of drones for ensuring safety in transport	RIA		15

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Human Factors in Transport Safety

Topic MG-2-1-2018 (RIA)

Challenge

Improve transport safety through adoption of human factors in the design of road or rail vehicles, vessels or aircraft, infrastructure and the mobility system - taking advantage of automation - knowledge of HMI.

Scope

1. Understand the limitations, interaction and range of factors that influence and degrade human performance when controlling a vehicle/aircraft/vessel and apply solutions that overcome these limitations
2. Improve the assessment of human risk factors in risk based design and operation within waterborne / air transport

→ *International cooperation encouraged*

Expected Impact

Decrease in collisions and incidents attributable to human factors

Estimated EC contrib. per proposal: EUR 4-8 Moi

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Marine Accident Response

Topic MG-2-2-2018 (RIA+IA)

Challenge

Develop solutions that address risks linked to marine accidents in order to reduce loss of life/damage to environment.

Scope

1. Improve probabilistic damage and consequence safety assessment (RIA)
2. Radical re-think of evacuation systems for passenger ships -high passenger capacity (RIA)
3. Enhance the prevention and management of fires at sea without recourse to external intervention --> application to passenger and crew safety (IA)
4. Enhance the prevention and management of fires at sea without recourse to external intervention --> application to container vessels and crew safety (IA)

→ *International cooperation encouraged*

Expected Impact

Improvement of the safety of shipping : revision of relevant international IMO safety rules, realistic procedures and systems to maintain stability sufficiently to enable safe evacuation, intuitive evacuation, detection of board fires ...

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Innovative technologies for improving aviation safety and certification in icing conditions

Topic MG-2-5-2018 (RIA)

Challenge

Advancements in understanding, modelling, detection, avoidance and mitigation of in-flight performance degradation linked to weather hazards.

Scope

Improved understanding of icing phenomena in engines / rotorcrafts

Reduction of power consumption of in-flight anti/de-icing devices (TRL 1 to 5)

→ *International cooperation: USA, Canada, Russia, Japan, Brazil, Australia*

Expected Impact

Increase passenger safety by fewer accidents, decrease costs, decrease delays (less damages, less repairs).

Estimated EC contrib. per proposal: EUR 3-5 Moi

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Moving freight by Water: Sustainable Infrastructure and Innovative Vessels

Topic MG-2-6-2019 (RIA)

Challenge

Improvements in efficient and seamless integration between transport modes and last mile connection, inland waterway bottlenecks, capacity of small ports, loading times, efficiency of transferring cargo between modes, cost effectiveness of partial cargo loads, environmental impacts and the feasibility of mixed passenger/freight services.

Scope

Development of innovative inland waterway / connectivity IT infrastructure / Automated and connected inland waterway / infrastructure maintenance/

Expected Impact

Decongest road and/or city infrastructure. Reduce the CO2 and air pollutant emissions of intra-European freight transport

Estimated EC contrib. per proposal: EUR 5-10 Moi

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Innovative applications of drones for ensuring safety in transport

Topic MG-2-8-2019 (RIA)

Challenge

Drones can be enablers of safety and security of current transport means (monitoring large vehicles/vessels/air vehicles, transport infrastructure, transport operations and users in nominal and contingency conditions - search and rescue) → public acceptance, privacy issues, legal aspects should be addressed.

Scope

Development / test for application of drones to increase safety, security, efficiency of air ...
Development of innovative technologies for pilot services (TRL 3 to 5)

Expected Impact

Increase safety and security in civil transport systems, contribute to economic growth (new markets/industries/high added value jobs), public acceptance.

Estimated EC contrib. per proposal: EUR 3-5 Moi

Topic	Titre	Action type	Budget (M €)	
			2018	2019
GLOBAL LEADERSHIP AND COMPETITIVENESS				
MG-3-1-2018	Multidisciplinary and collaborative aircraft design tools and processes	RIA	12	
MG-3-2-2018	The Autonomous Ship	IA	20	
MG-3-3-2018	"Driver" behaviour and acceptance of connected, cooperative and automated transport	RIA	12	

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Multidisciplinary and collaborative aircraft design tools and processes

Topic MG-3-1-2018 (RIA)

Challenge

Transform potential design concepts into aircraft products, including supply chain.

Scope

Develop and validate by both numerical and experimental means the new multidisciplinary and collaborative aircraft design and optimisation paradigm → TRL 2 to 5

Expected Impact

Advanced multidisciplinary and collaborative capabilities for whole aircraft / reduced aircraft design cycle and higher complexity decision trade-offs / synergies on visualisation methods and big-data anal

Estimated EC contrib. per proposal: EUR 2-4 Moi

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The Autonomous Ship

Topic MG-3-2-2018 (IA)

Challenge

Develop and demonstrate integrated automation technologies within a real environment.

Scope

Demonstrate a fully autonomous vessel within a realistic environment including collision avoidance, interaction with waterway and/or port infrastructure, interaction with waterborne traffic, connectivity, control, navigation and docking, condition monitoring, smart maintenance, fail safe operation... (TRL7)

Expected Impact

Establishment of the first commercial automated water transport services within 5 years.

Estimated EC contrib. per proposal: EUR 10-20 Moi

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

Topic MG-3-3-2018 (RIA)

Challenge

Study of public acceptance of connectivity and automation, the development of user-friendly and appropriate HMI, "driver"/vehicle interaction and ethical decision making, to "driver" training and certification for new technologies/levels of automation..

Scope

Public acceptance of higher levels of connectivity/automation and different user-groups, analysis of driver behaviour/reaction, safety impacts, HMI analysis...

Expected Impact

Integration of higher levels of connectivity/automation / Increase of safety and security

Estimated EC contrib. per proposal: EUR 3-4 Moi

Topic	Titre	Action type	Budget (M €)	
			2018	2019
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	2	

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New regulatory frameworks to enable effective deployment of emerging technologies and business/operating models for all transport modes

Topic MG-4-1-2018 (CSA)

Challenge

Devise new regulatory approaches, frameworks and governance models through evidence based research

Scope

Identification of new technologies, services, business /operating models and mobility solutions having the potential to disrupt and overhaul the current regulatory approaches in both passenger and freight transport / comparative responses and governance / analysis of economic, political, social variables ...

Expected Impact

EU's better regulation agenda

Estimated EC contrib. per proposal: EUR 1-2 Moi

Topic	Titre	Action type	Budget (M €)	
			2018	2019
BLUE GROWTH				
MG-BG-01-2018	Unmanned and autonomous survey activities at sea	RIA	8	
MG-BG-02-2019	Ship emission control scenarios, marine environmental impact and mitigation	RIA		8

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Unmanned and autonomous survey activities at sea

Topic MG-BG-01-2018 (RIA)

Challenge

Reduction of costs of sea floor survey through autonomous technology which enables the possibility of an underwater vehicle which can operate with a high level of independence and survey large areas .

Scope

- Develop and demonstrate to TRL5 an autonomous sea bed survey vehicle, including energy and propulsion systems capable of supporting several months of autonomous survey operation over large areas
- Minimising deep sea deployment and recovery costs
- Robust and secure data transmission and Compatible survey equipment

Expected Impact

Massive reduction of sea survey activities

Estimated EC contrib. per proposal: max EUR 8 Moi

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Ship emission control scenarios, marine environmental impact and mitigation

Topic MG-BG-02-2019 (RIA)

Challenge

Understand the environmental impacts from the wide scale adoption of a range of potential emission reduction solutions

Scope

- Assess the range of emission reduction technologies and designs which may be deployed, consider their cost benefits.
- Experimentally characterise waste streams from emission control technologies
- Considering several possible scenarios for the wide scale adoption of different emission control technologies / bio accumulation /waste stream costs and their cost effective treatment

Expected Impact

Comprehensive information concerning the predicted dispersion of discharges from shipping and any long term environmental impact

Estimated EC contrib. per proposal: max EUR 8 Moi

OTHER ACTIONS

Joint Undertaking

CLEAN SKY



Objectif: mettre au point des technologies innovantes pour réduire le bruit et les émissions de CO2 et d'autres gaz des avions.

SESAR



Objectif: moderniser la gestion du trafic aérien

OTHER ACTIONS

Joint Undertaking CleanSky 2



<http://www.cleansky.eu/>

7^{ème} appel à proposition prévu début novembre 2017
→ 73 topics

Liste indicative des prochains appels :

http://cleansky.eu/sites/default/files/inline-files/CS-GB-2017-10-19%20Annex%20III%20of%20WP%20-%20CFP07%20PP1_0.pdf

Infoday à Bordeaux le 24/10/2017

<http://www.horizon2020.gouv.fr/cid119073/journees-information-europeennes-nationales-regionales-evenements-brokerage-2017.html>

OTHER ACTIONS

Joint Undertaking SESAR



<https://www.sesarju.eu/>

Appel à projets CEF* publié le 06/10/2017

Dont 290 M€ pour SESAR

Date limite: 15/03/2018

Informations: <https://ec.europa.eu/inea/en/connecting-europe-facility/cef-transport/apply-funding/2017-cef-transport-sesar-call-proposals>

*Connecting Europe Facilities

Contacts utiles

Recherche de partenaires:

➤ EEN

➤ ETNA 2020: EU Horizon 2020 – Transport Partner Search

<http://transport.ideal-ist.eu/partner-search/pssearch>



Informations utiles

Sites internet :

- <http://www.horizon2020.gouv.fr/>
- http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=h2020-documents
- <https://ec.europa.eu/programmes/horizon2020/en/shaping-work-programme-2018-2020-societal-challenge-4-smart-green-and-integrated-transport>

Contacts au PCN Transport

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Merci de votre attention

