



The EU Framework Programme for Research and Innovation

HORIZON 2020

**Smart, green and integrated Transport
Work Programme 2016-2017**



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European Commission

Hungarian Transport R&I Info Day
National Research, Development and Innovation Office
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Research and
Innovation

- **GHG emissions – climate + health impacts**
- **Oil dependency - volatile oil prices**
- **Congestion – liveability of cities**
- **Infrastructure capacity vs mobility demand**
- **Urbanisation – role of public transport**
- **Demographic trends – ageing populations**
- **Global competition**

Policy goals: efficiency and sustainability

Resource efficiency vs. climate change and oil dependency

Transport accounts for 32% of all energy consumption

- **Boost alternative fuels and infrastructure**

Curb noxious emissions, improve air quality

24% of CO₂, 20% of GHG come from transport

400 000 premature deaths in EU, 1/5 due to transport

- **Achieve the 2030 energy-climate targets: GHG -40%, 27% renewables, 27% energy savings**

Network capacity and modal shift vs saturation and congestion

Congestion costs: 1 to 2 % of GDP

- **30% of road freight > 300 km moving to rail/water by 2030**

Smart solutions for safety and security

26000 road fatalities/year

- **Vision zero: ½ road fatalities by 2020 (vs 2010), towards none by 2050**

Fierce international competition

Expanding markets but shrinking market shares

- **Innovate to preserve market-shares and jobs**

Objectives of Societal Challenge 4 'Smart, green and integrated Transport':

Achieving a European transport system that is

- resilient
- resource-efficient
- climate and environmentally friendly
- safe
- seamless
- competitive

...and that benefits citizens, economy and society

Four lines of activities:

1. Resource efficient transport that respects the environment
2. Better mobility, less congestion, more safety and security
3. Global leadership for the European transport industry
4. Socio-economic and behavioural research and forward looking activities for policy making

➤ **6339 M € for 7 years 2014-2020**

➤ **50/50 JTIs/collaborative calls**

- *Clean Sky*
- *SESAR*
- *Shift2Rail*
- *Fuel Cells & Hydrogen (contribution)*

➤ **938 M € for WP 2016-17**



- **Public calls, competitive selection, peer review**
- **Multi-partner transnational consortia**
- **Evaluation criteria:**
 - *Excellence, impact, implementation*
- **Work Programme cycle:**



- Improve **energy/resource efficiency**
- Accelerate **automation** in road transport
- Support deployment of innovative **mobility solutions**
- **Modernise infrastructure**, increase its resilience and optimise its use
- **Optimise efficiency** and **interoperability** of transport systems
- Improve **safety** across the transport system
- Anticipate technological developments and their impacts on **industrial competitiveness**
- Understand **demographic trends, societal developments**, and **future skills** requirements



Work Programme 2016-17

Transport Work Programme

Calls for proposals:

- 1) Mobility for Growth
- 2) Automated Road Transport  **New**
- 3) European Green Vehicles Initiative

Other activities

- Blue Growth (SC2/Food)
- ELENA Facility (SC3/Energy)
- SME Instrument
- Fast Track to Innovation
- LEIT/NMBP, ICT, Space; SC/Energy, Security, Climate; Smart Cities

Plus other actions (public procurements, ...)

***Complementarities with
Clean Sky 2, SESAR, Shift2Rail, FCH2***

2016-17 WP: continuity...

- Competitiveness + sustainability
- Systemic approach + modal specificities
- Research + Innovation = greater impact

...and novelties

- New Call: Automation in Road Transport
- New area: safety
- An inducement prize for the cleanest engine
- Better embedding of user needs, SSH, gender...
- International cooperation in many selected topics

Objectives

- **Reconcile competitiveness and sustainability, improved mobility and economic impact**
- Boost interconnection of infrastructure, transport means, travellers, goods
- Optimise door-to-door mobility, increase safety and resilience, reduce environmental impact and operational costs
- Make equipments and systems smarter, cleaner, quieter, more efficient, less dependent on fossil fuels
- Focus on aviation, waterborne, cross-modal aspects



Contents and structure

A) Mode-specific challenges

- 1) Aviation
- 2) Waterborne

C) Cross-cutting issues

- 8) Socio-economic and behavioural research and forward-looking activities for policy making

B) Cross-modal / transport integration challenges

- 3) Safety
- 4) Urban
- 5) Logistics
- 6) Intelligent Transport Systems
- 7) Infrastructure

Aviation: topics and budget

Total EU contribution: EUR 146 Mio

Topic	Title	Action type	Stages	Budget (EUR Mio)	
				2016	2017
MG-1.1	Reducing energy consumption and environmental impact of aviation	RIA	2	40	
MG-1.2	Reducing aviation noise	RIA	2		20
MG-1.3	Maintaining industrial leadership in aeronautics	RIA	2		45
MG-1.4	Breakthrough innovation	RIA	2	15	15
MG-1.5	Identification of gaps, barriers and needs in aviation research	CSA	1	4	7

CSA = Coordination and Support Action

RIA = Research and Innovation Action



Waterborne: topics and budget

Total EU contribution: EUR 78 Mio

Topic	Title	Action type	Stages	Budget (EUR Mio)	
				2016	2017
MG-2.1	Innovations for energy efficiency and emission control in waterborne transport	IA	2		40
MG-2.4	Complex and value-added specialised vessels	IA	2		
MG-2.2	Development, production and use of high performance and lightweight materials for vessels and equipment	IA	2	38	
MG-2.3	New and improved transport concepts in waterborne transport	RIA	2		

IA = Innovation Action; RIA = Research and Innovation Action



Safety: topics and budget

Total EU contribution: EUR 66 Mio

Topic	Title	Action type	Stages	Budget (EUR Mio)	
				2016	2017
MG-3.1	Addressing aviation safety challenges	RIA	2	15	
MG-3.2	Protection of all road users in crashes	RIA	2		14
MG-3.3	Safer waterborne transport and maritime operations	RIA	2	22	
MG-3.5	Behavioural aspects for safer transport	RIA	2		
MG-3.4	Transport infrastructure innovation to increase the transport system safety at modal and intermodal level	RIA	2	12	
MG-3.6	Euro-African initiative on road safety and traffic management	CSA	1	3	

RIA = Research and Innovation Action; CSA = Coordination and Support Action

Urban mobility: topics and budget

Total EU contribution: EUR 36 Mio

Topic	Title	Action type	Stages	Budget (EUR Mio)	
				2016	2017
MG-4.1	Increasing the take up and scale-up of innovative solutions to achieve sustainable urban mobility	IA	2		22
MG-4.2	Supporting "smart electric mobility" in cities	IA	2		
MG-4.3	Innovative approaches for integrating urban nodes in the TEN-T core network corridors	CSA	1		2
MG-4.4	Facilitating public procurement of innovative sustainable transport and urban mobility solutions	CSA	1	2	
MG-4.5	New ways of supporting development and implementation of neighbourhood-level and urban-district-level transport innovations	RIA	2	10	

CSA = Coordination and Support Action

RIA = Research and Innovation Action; IA = Innovation Action

Logistics: topics and budget

Total EU contribution: EUR 27 Mio

Topic	Title	Action type	Stages	Budget (EUR Mio)	
				2016	2017
MG-5.1	Networked and efficient logistics clusters	RIA	2	12	
MG-5.2	Innovative ICT solutions for future logistics operations	RIA	2		→ 12
MG-5.4	Potential of the physical internet	RIA + CSA	2 1		
MG-5.3	Promoting the deployment of green transport, towards Eco-labels for logistics	CSA	1	2	

CSA = Coordination and Support Action

RIA = Research and Innovation Action



ITS: topics and budget

Total EU contribution: EUR 30 Mio

Topic	Title	Action type	Stages	Budget (EUR Mio)	
				2016	2017
MG-6.1	Innovative concepts, systems and services towards 'mobility as a service'	RIA	2	25	
MG-6.2	Large-scale demonstration(s) of cooperative ITS	IA	2		
MG-6.3	Roadmap, new business models, awareness raising, support and incentives for the roll-out of ITS	CSA	1	5	

CSA = Coordination and Support Action

RIA = Research and Innovation Action

IA = Innovation Action

Infrastructure: topics and budget

Total EU contribution: EUR 38 Mio

Topic	Title	Action type	Stages	Budget (EUR Mio)	
				2016	2017
MG-7.1	Resilience to extreme (natural and man-made) events	RIA	2		
MG-7.2	Optimisation of transport infrastructure including terminals	RIA	2		→ 37
MG-7.3	The Port of the future	RIA CSA	2 1		→ 1

CSA = Coordination and Support Action

RIA = Research and Innovation Action

Socio-economic: topics and budget

[1/2] – Total EU contribution: EUR 13,6 Mio

Topic	Title	Action type	Stages	Budget (EUR Mio)	
				2016	2017
MG-8.1	Research, technology, development and market trends for the European transport manufacturing industries	CSA	1	1,5	
MG-8.2	Big data in Transport: Research opportunities, challenges and limitations	CSA	1		2
MG-8.3	Assessing future requirements for skills and jobs across transport modes and systems	RIA	1	3	

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CSA = Coordination and Support Action
RIA = Research and Innovation Action



Socio-economic: topics and budget

[2/2] – Total EU contribution: EUR 13,6 Mio

Topic	Title	Action type	Stages	Budget (EUR Mio)	
				2016	2017
MG-8.4	Improving accessibility, inclusive mobility and equity: new tools and business models for public transport in prioritised areas	RIA	1		7,5
MG-8.5	Shifting paradigms: Exploring the dynamics of individual preferences, behaviours and lifestyles influencing travel and mobility choices	RIA	1		
MG-8.6	Innovation awards for students and researchers in the context of the Transport Research Arena conference – TRA 2018	CSA	1	0,6	

CSA = Coordination and Support Action
RIA = Research and Innovation Action



Automated Road Transport: topics and budget – Total EU contribution: EUR 114 Mio

Topic	Title	Action type	Stages	Budget (EUR Mio)	
				2016	2017
ART-01	ICT infrastructure to enable the transition towards road transport automation	IA	2		50
ART-03	Multi-Brand platooning in real traffic conditions	IA	2		
ART-07	Full-scale demonstration of urban road transport automation	IA	2		
ART-02	Automation pilots for passenger cars	IA	2	48	
ART-04	Safety and end-user acceptance aspects of road automation in the transition period	RIA	2		
ART-05	Road infrastructure to support the transition to automation and the coexistence of conventional and automated vehicles on the same network	RIA	2	13	
ART-06	Coordination of activities in support of road automation	CSA	1	3	

CSA = Coordination and Support Action
IA = Innovation Action; RIA = Research and Innovation Action



Green Vehicles [1/2]

Total EU contribution: EUR 206,5 Mio

Topic	Title	Action type	Stages	Budget (EUR Mio)
				2016
GV-02	Technologies for low emission light duty powertrain	RIA	1	65
GV-03	System and cost optimised hybridisation of road vehicles	IA	1	
GV-11	Stimulating European research and development for the implementation of future road transport technologies	CSA	1	3,5
GV-12	ERA-NET Co-fund on electromobility	ERA-NET	1	10

CSA = Coordination and Support Action

RIA = Research and Innovation Action

IA = Innovation Action

ERA-NET = ERA-NET Cofund Action



Green Vehicles [2/2]

Total EU contribution: EUR 206,5 Mio

Topic	Title	Action type	Stages	Budget (EUR Mio)
				2017
GV-01	Optimisation of heavy duty vehicles for alternative fuels use	IA	1	128
GV-04	Next generation electric drivetrains for fully electric vehicles, focussing on high efficiency and low cost	RIA	1	
GV-05	Electric vehicle user-centric design for optimised energy efficiency	RIA	1	
GV-06	Physical integration of hybrid and electric vehicles batteries at pack level aiming at increased energy density and efficiency	IA	1	
GV-07	Multi-level modelling and testing of electric vehicles and their components	RIA	1	
GV-08	Electrified urban commercial vehicles integration with fast charging infrastructure	IA	1	
GV-09	Aerodynamic and flexible trucks	IA	1	
GV-10	Demonstration (pilots) for integration of electrified L-category vehicles in the urban transport system	IA	1	

IA = Innovation Action; RIA = Research and Innovation Action

Horizon prize for the cleanest engine

Challenge

- Helping the development of technologies to reduce emissions of pollutants in real driving conditions

Scope

- Two prizes addressing (A) the existing fleet (retrofittable technology) and (B) future vehicles

Expected impact

- Reduce noxious emissions

Indicative budget: EUR 1,5 (A) + 3,5 (B) Mio

Target audience: individuals, SMEs, research centres, universities, suppliers of components, car manufacturers

Measures to promote close-to-market innovation :

- **SME instrument**

Small business innovation research for transport and smart cities mobility

- **Fast track to innovation (FTI)**

Pilot action to:

- > Reduce time from idea to market
- > Stimulate the participation of first-time applicants to EU research funding
- > Increase private sector investment in R&I

Other actions: tenders

Title	Budget (EUR Mio)	
	2016	2017
Sustainable infrastructure charging	1	
ELTIS: supporting exchange of knowledge, information and experiences in the field of urban mobility	2	
The role of urban mobility in supporting the 2011 White Paper objectives – data collection		1,9
Establishment of Transport Research and Innovation Monitoring and Information System		1,5
Dissemination and exploitation of results		0,2
Support to the development, implementation, monitoring and evaluation of transport research and innovation policy activities	1	

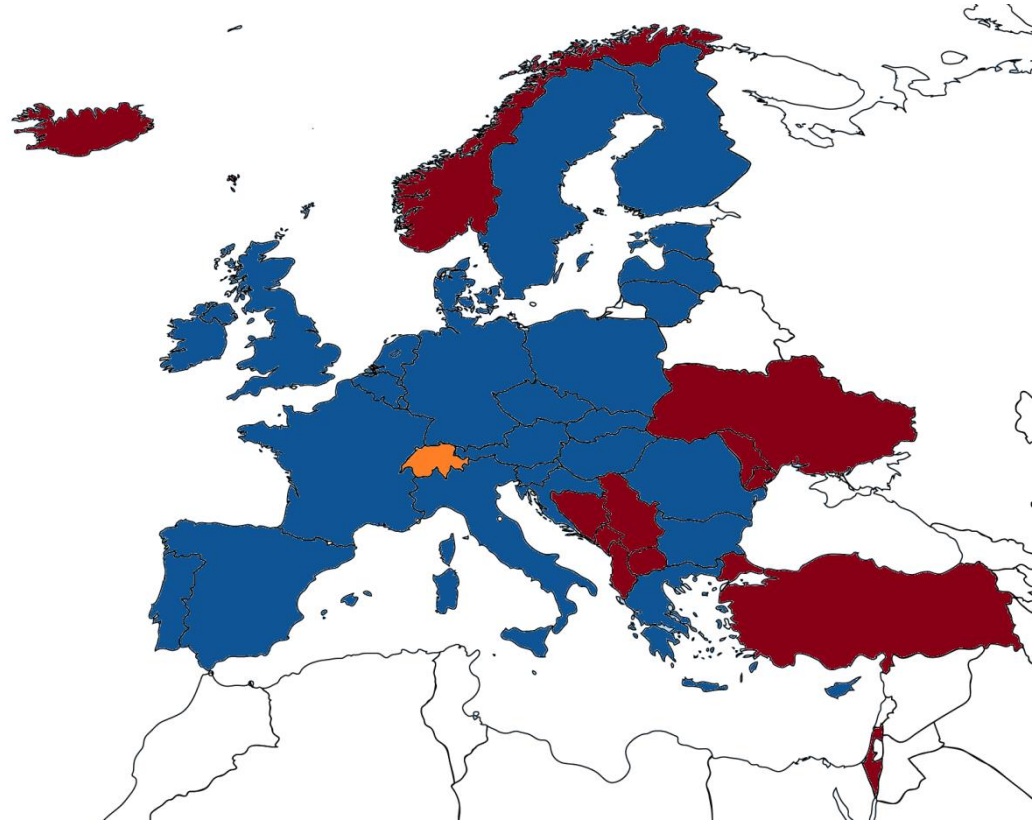
From submission to Grant Agreement preparation: overview

- **One project = One funding rate** for all beneficiaries / activities in the grant
- Funding **up to 100% of eligible costs** for 'Research and Innovation Actions' (RIA) and for 'Coordination and Support Actions' (CSA)
- Funding **up to 70%** for 'Innovation Actions' (IA), except non-profit organisations (up to 100%)
- **Indirect costs** (overheads): 25% flat rate
- **Minimum conditions**
 - **IAs, RIAs**: minimum three legal entities each established in a different Member State or an Associated Country
 - **CSAs**: one legal entity established in a Member State or in an Associated Country
 - Plus **additional conditions** as indicated in the WP
- **Time to Grant** (from call closure date) maximum **eight months**
 - Proposers to be informed within **five months**

28 Member States

12+1 Associated Countries

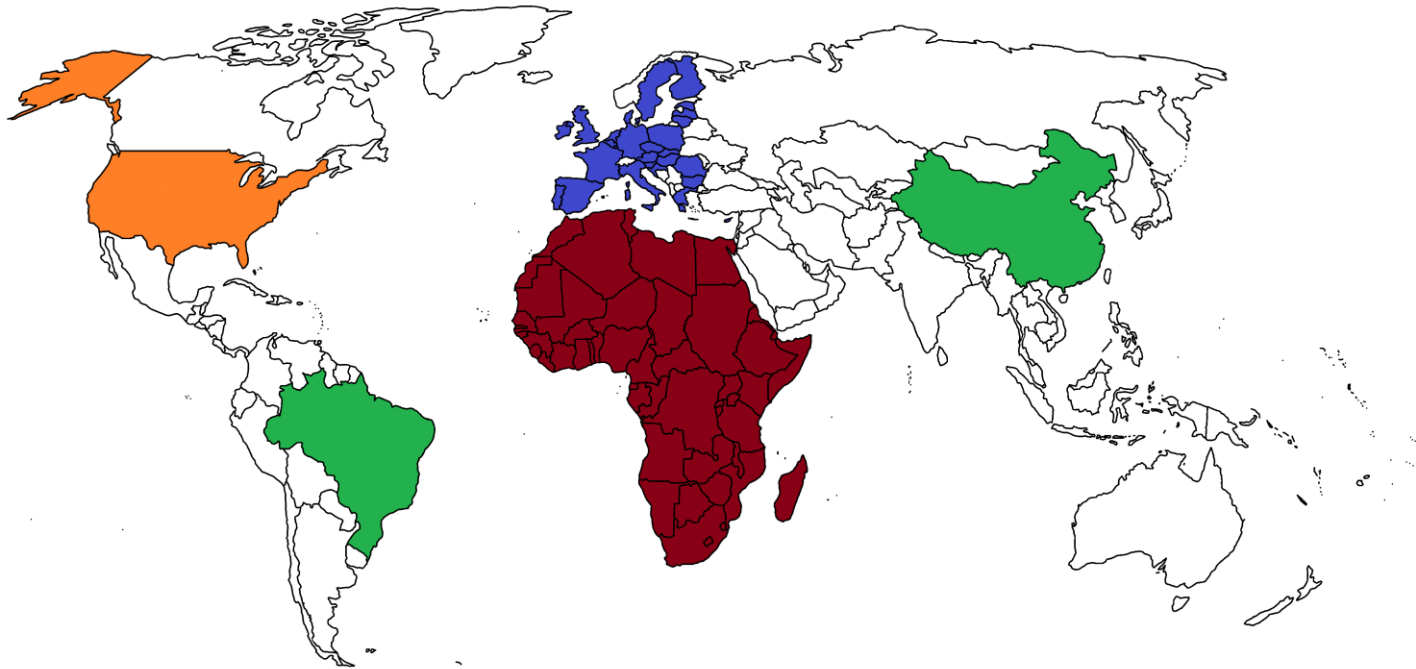
- Iceland
- Norway
- Albania
- Bosnia and Herzegovina
- FYROM
- Montenegro
- Serbia
- Turkey
- Israel
- Moldova
- Faroe Islands
- Ukraine (*excl. Crimea*)
- Switzerland (*partial: not for transport*)



Participants from any other Country can participate

Those from developing Countries can also get funded

Targeted Countries in WP 2016-17



US: Road transport automation, Green Vehicles, Safety, Infrastructure, Climate Change

China, Brazil and others: Green Vehicles, Safety

Africa: Road Safety and Traffic Management

+ many topics encouraging international cooperation

2016-17 calls: key dates

Date		Calls / topics
2015	15 October	Opening of 2016 calls
2016	20 January	Closing Two-stage topics: 1st stage proposals
	26 January	Single-stage topics
	29 September	Two-stage topics: 2nd stage proposals
2016	20 September	Opening of 2017 calls Calls Mobility for Growth & Autom. Road Transport
	4 October	Call Green Vehicles
2017	26 January	Closing Two-stage topics: 1st stage proposals
	1 February	Single-stage topics
	27 September	Two-stage topics: 2nd stage proposals - call ART
	19 October	Two-stage topics: 2nd stage proposals - call MG

Tips for a successful proposal

- competition is tough, only the very best proposals get funded
- read carefully the WP, match the topic description
- pay attention to the evaluation criteria (see WP annexes), including 'expected impact'
- write clearly and concisely, respect the limits of number of pages
- don't inflate the budget, over-estimation will be penalised
- get the right partners, ensure each has clear role and added value

Thank you for your attention



Find out more:

www.ec.europa.eu/research/horizon2020

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