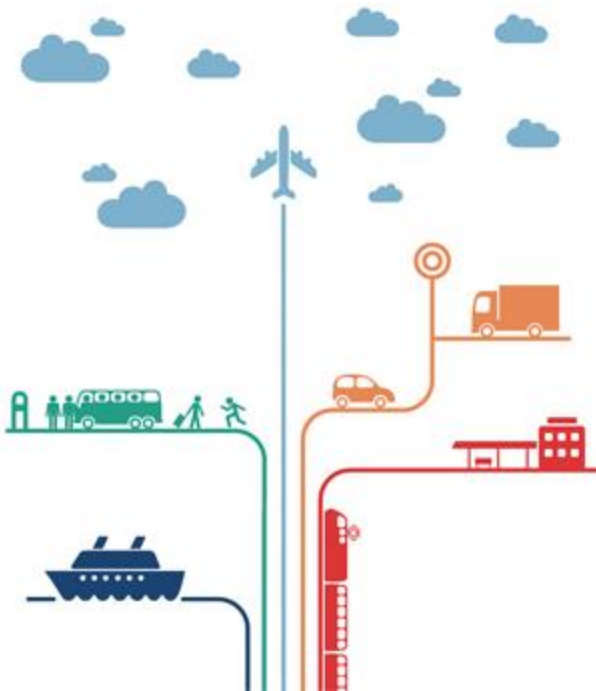


HORIZON 2020: IL NUOVO PROGRAMMA QUADRO PER LA RICERCA E L'INNOVAZIONE 2014-2020.

Focus sulla 4[°] societal challenge
'Smart, green and integrated Transport'



Valentina Tegas
National Contact Point «Smart, Green & Integrated
Transport» APRE

What is Horizon 2020

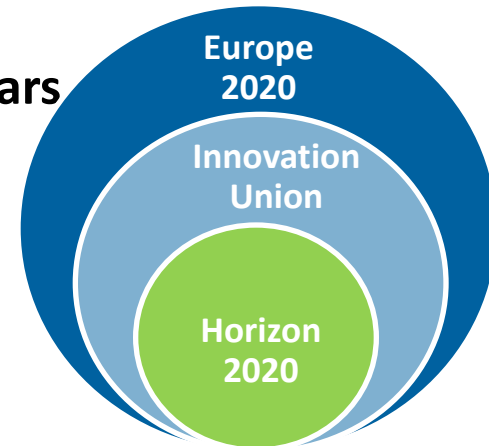
The new EU Framework Programme for Research and Innovation, 2014-2020



A budget of € 78.6 billion (current prices) for 7 years



A core part of Europe 2020, Innovation Union and the European Research Area.



What's new?

- Coupling research to innovation – from research to deployment
- Focus on the challenges that the EU society is facing, e.g. health, clean energy, transport,...
- Simplified access for participants
- A single programme bringing together three previously separate programmes/activities*

*the 7th Research Framework Programme (FP7), innovation aspects of Competitiveness and Innovation Framework Programme (CIP), EU contribution to the European Institute of Innovation and Technology (EIT)

H2020 Architecture

Excellent Science

- **European Research Council**
 - Frontier research by the best individual teams
- **Future and Emerging Technologies**
 - Collaborative research to open new fields of innovation
- **Marie Skłodowska Curie actions**
 - Opportunities for training and career development
- **Research infrastructures** (including e-infrastructure)
 - Ensuring access to world-class facilities

Industrial Technologies

- **Leadership in enabling and industrial technologies**
 - Information and Communication Technologies (ICT), nanotechnologies, materials, biotechnology, manufacturing, space
- **Access to risk finance**
 - Leveraging private finance and venture capital for research and innovation
- **Innovation in SMEs**
 - Fostering all forms of innovation in all types of SMEs

Societal Challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture, marine and maritime research & the bioeconomy
- Secure, clean and efficient energy
- **Smart, green and integrated transport**
- Climate action, resource efficiency and raw materials
- Inclusive, innovative and reflective societies
- Security society

European Institute of Innovation and Technology (EIT)

Spreading Excellence and Widening Participation

Science with and for society

Joint Research Center (JRC)

RULES FOR PARTICIPATION

WHO CAN PARTICIPATE?

Any legal entity, regardless of its place of establishment, or international organization (art. 6, RfP):

- Any legal entity established in a Member State or Associated Country
- Joint Research Centre (JRC)
- Any international organization.
- Any legal entity established in a Third Country (adding to minimum requirements)

WHO CAN BE FUNDED?

- Any legal entity established in a Member State and Associated Country.
- JRC
- Among Third Countries: Low-income countries (Former ICPC countries)
The list is available at page 3 of the General Annex (http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/annexes/h2020-wp1415-annex-a-countries-rules_en.pdf)
- Any international European interest organization.

International organizations or legal entities established in a HIGH INCOME third country, in a BRICS (Brazil, Russia, India, China, South Africa) country or in Mexico DO NOT RECEIVE AUTOMATIC FUNDING.

Minimum Conditions for participation (art.9, RfP)

3 LEGAL ENTITIES independent of each other and established in different Member States or associated countries.

1 LEGAL ENTITY

ERC, SME Instrument, Co-fund actions, CSA and Marie S. Curie Actions.



ADDITIONAL/SPECIAL CONDITIONS might be identified in the work programme or work plan (n. of participants, type of entities, etc...)

FORMS OF FUNDING

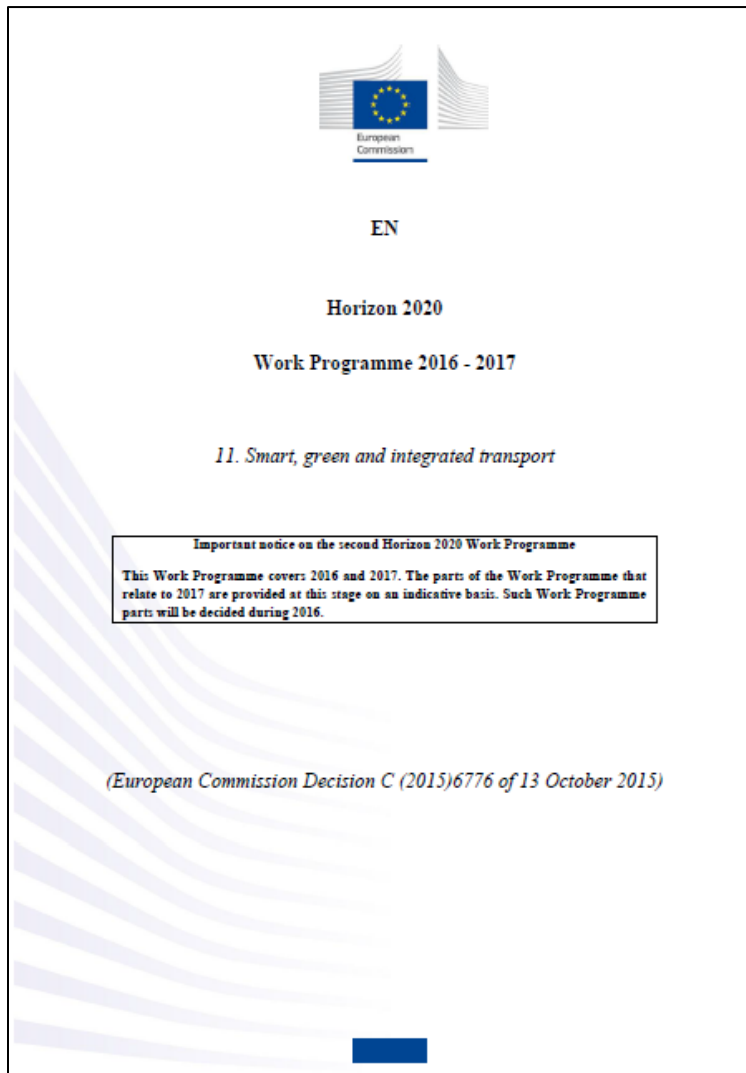
“Funding may take one or several of the forms provided for by the [Financial Regulation], in particular grants, prizes, procurement and financial instruments.”

(art.5 RfP)

Types of action

- Research and Innovation action (RIA)
- Innovation action **NEW** (IA)
- Fast Track to Innovation **NEW**
- The SME Instrument **NEW**
- Coordination and Support Actions (CSA)
- Programme Co-funding Actions
- Pre-Commercial Procurement (PCP)
- Public Procurement of Innovative Solutions (PPI)
- Prizes **NEW**

H2020 Implementation: work programmes, calls, topics



*HORIZON 2020 - Work Programme 2016 - 2017
 Smart, green and integrated transport*

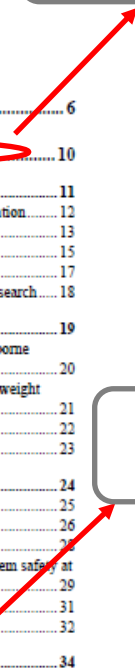
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call

topic





The Specific Programme: 4 lines of activities

- **Resource efficient** transport respecting **climate** and **environment** (including clean and silent aircraft, vehicles and vessels and alternative energy)
- **Better mobility**, less congestion, more safety and security (including **logistics** and inter-transport management)
- **Global leadership** for for a **seamless** European Transport industry (**competitiveness**)
- **Socio-economic and behavioural research** and **forward looking activities** for policy making



Transport challenge budget

➤ **6339 M € for 7 years 2014-2020**

➤ **50/50 JTI/collaborative calls**

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

➤ **938 M € for WP 2016-17**





Implementation of H2020

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





WP 2016-17: General objectives

- 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



What's new?

2016-17 WP: continuity...

- Competitiveness + sustainability
- Systemic approach + modal specificities

...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



International cooperation [1/2]

Global challenges call for global solutions

- Emissions, pollution, climate impact
- Oil dependency, energy efficiency
- Transport safety and security
- Standardisation of services, products and procedures

...



Local issues benefit from exchange of best practices

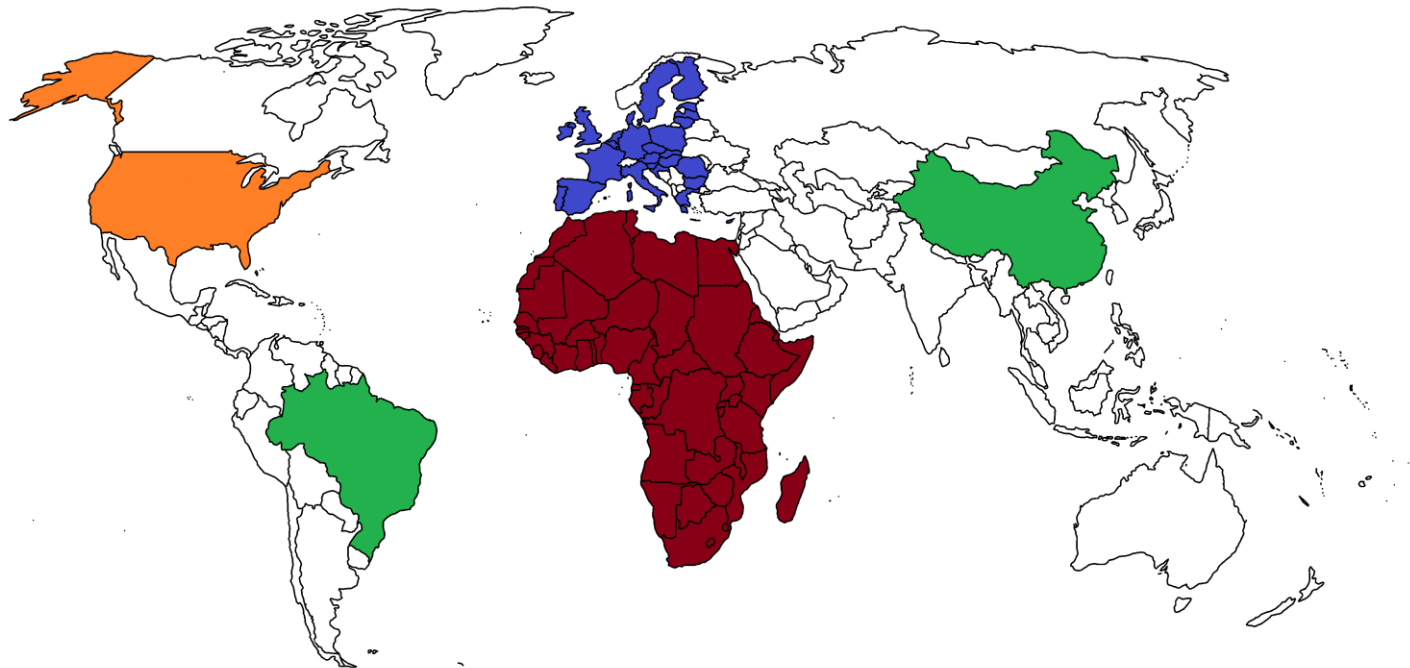


- Traffic congestion
- Land use planning
- Behavioural issues

...



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



2016-2017 Calls

Calls for proposals:

1) Mobility for Growth



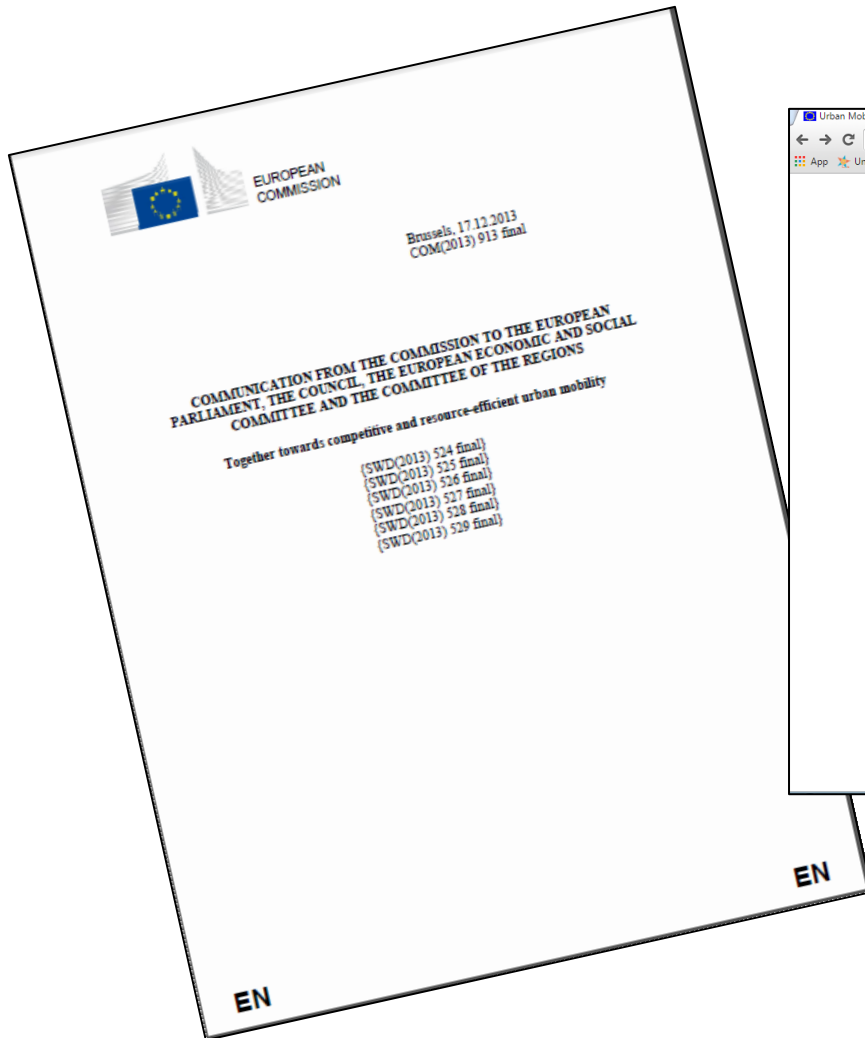
**URBAN
MOBILITY**

2) Automated Road Transport

3) European Green Vehicles Initiative



URBAN MOBILITY



Urban Mobility Package - X

ec.europa.eu/transport/themes/urban/urban_mobility/ump_en.htm

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MOBILITY AND TRANSPORT

European Commission > Transport > Transport themes > Clean transport, Urban transport > Urban mobility

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Clean transport, Urban transport

Urban Mobility Package

Cities are home to over 70 % of the EU population and account for some 85 % of the Union's GDP. Most journeys begin and end in cities. In many urban areas, however, increasing demand for urban mobility has created a situation that is not sustainable: severe congestion, poor air quality, noise emissions and high levels of CO2 emissions. Urban congestion jeopardises EU goals for a competitive and resource-efficient transport system.

With the Urban Mobility Package, the Commission reinforces its supporting measures in the area of urban transport by:

- Sharing experiences, show-casing best practices, and fostering cooperation
- Providing targeted financial support,
- Focusing research and innovation on delivering solutions for urban mobility challenges,
- Involving the Member States and enhance international cooperation.

The central element of the Urban Mobility Package is the Communication ["Together towards competitive and resource-efficient urban mobility"](#) [1100 KB] [PDF]. It is complemented by an [annex](#) [54 KB] [PDF] that sets out the concept of Sustainable Urban Mobility Plans, as well as four Staff Working Documents on [urban logistics](#) [93 KB], [urban access regulations](#) [163 KB], [deployment of Intelligent Transport System solutions in urban areas](#) [119 KB], and [urban road safety](#) [61 KB].

Urban Mobility Video

Clean transport, Urban transport

- > Cycling
- > Clean Power for Transport
- > Clean and energy efficient vehicles...

Urban mobility

- > Urban Mobility Package
- > Urban mobility actions
- > Action plan on urban mobility
- > Green Paper on urban mobility
- > Commission's support
- > Programmes and projects
- > Studies

Call "Mobility for Growth"

(H2020-MG-2016-17)

Objectives

- **Reconcile competitiveness and sustainability, improved mobility and economic impact**
- Focus on aviation, waterborne, cross-modal aspects
- 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





Call "Mobility for Growth"

(H2020-MG-2016-17) – Total EU contribution: EUR 434 Mio

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

Safety



*2016-17: 6 topics open
 EUR 66 Mio EU budget*

Context

- Safety improved across all modes over last 10 years
- Aim: **reducing accident rates**, fatalities and injuries in each mode
- Target: **halving road casualties** by **2020**, towards zero fatalities by 2050
- Increasing **knowledge and awareness**, developing technologies, products, services, solutions

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



*2016-17: 5 topics open
EUR 36 Mio EU budget
Expanding the CIVITAS initiative; links with
Connecting Europe and ELENA Facilities*

Context

- Efficiency of urban transport, **mitigation of its negative effects**: crucial for performance of **cities**
- Need for **change in use of vehicles patterns**, more efficiency, less impacting city **logistics**
- Transport White Paper targets:
 - By 2030: CO₂-free city logistics in major centers
 - By 2050: **phasing out of conventionally fuelled cars in cities**

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



*2016-17: 4 topics open
 EUR 27 Mio EU budget
 Complements relevant topics under Urban
 Mobility and Intelligent Transport Systems*

Context

- In 2012, 45% of freight transport (tkm) on the road, 40% by sea, 9% by rail, 3% by inland waterways
- **One in four trucks in the EU runs empty, overall efficiency** (weight-based) as low as 43%
- Need for an **increase in efficiency and sustainability**
- Opportunities provided by **digitalisation**
- Need to remove bottlenecks

Logistics: topics and budget

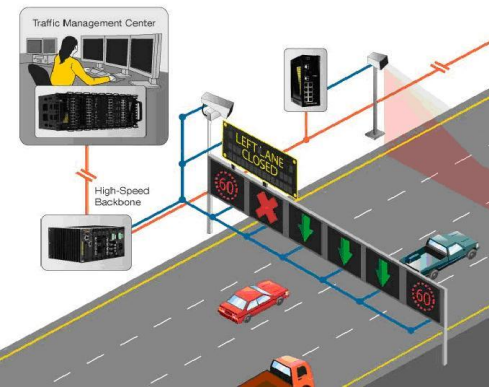
Total EU contribution: EUR 27 Mio



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

Intelligent Transport Systems



*2016-17: 3 topics open
 EUR 30 Mio EU budget
 Complements topics under the Call on
 Automated Road Transport*

Context

- By connecting all elements of the transport system, ITS are key to achieving **seamless passengers and goods transport**
- ITS enable **better use** of existing infrastructure
- Need for **Europe-wide real-time transport information data** combining information from all transport modes



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



*2016-17: 3 topics open
 EUR 38 Mio EU budget
 Proposals addressing Rail (in a multimodal approach) and Aviation infrastructure: ensure complementarity with activities in 'Shift to Rail' and 'SESAR' respectively*

Context

- Growing need to make **infrastructure more resilient** (growing mobility needs and extreme events)
- Coping with **declining resources** to maintain and upgrade transport infrastructure
- Challenge: identify innovative solutions to **increase efficiency and robustness** of transport infrastructure





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



Call "Automated Road Transport"

(H2020-ART-2016-17)

Objectives

- Increase safety, efficiency, user convenience, livability of cities
- Meet the next competitiveness challenge: new frontier for industrial leadership, growth and jobs



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	48	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



Call "Green Vehicles"

(H2020-GV-2016-2017)

Objectives

Boost competitiveness and growth
Clean transport, de-carbonise society



- Promote energy efficiency, use of **non conventional energies** (electricity, CNG, LNG, renewables), **alternative fuels**
- **Reduce pollution**, noise, impacts on health
- **Improve engines**, power-trains, vehicle architecture, manufacturing processes





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



Other activities [1/2]

Horizon prizes for the cleanest engine

- Helping the development of technologies to reduce noxious emissions of pollutants in real driving conditions
- Two prizes addressing (A) the **existing fleet** (retrofittable technology) and (B) **future vehicles**

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

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



Other activities [2/2]

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 Activities and Actions

- Blue Growth (SC2/Food)
- ELENA (European Local Energy Assistance) Facility (SC3/Energy)
- Public Procurement actions
- LEIT/NMBP, ICT, Space; SC/Energy, Security, Climate; Smart Cities
- Complementarities with *Clean Sky 2*, *SESAR*, *Shift2Rail*, *FCH2*

2016-17 calls: key dates

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



Thank you!

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