

Mobilità Intelligente e Sostenibile: tematiche attuali, visione UE e finanziamenti futuri

Ing. Stefano Mainero – Presidente EPN Consulting

Webinario AIT, 09 Febbraio 2021

EPN Consulting is

- **Consultancy**
- **International Network of Professionals**

EPN Consulting Limited was founded in 2009 in London by Dr Ing Stefano Mainero who holds a 5-year degree in Electronics Engineering awarded by the *Politecnico di Torino* University (Italy) and has 25+ years of experience in Consultancy services.

Stefano is a specialist in European Business, European Projects, Intelligent Transport Systems & Sustainable Transport, MaaS and Smart Mobility in Smart Cities.

The EPN Consulting's core team is made of a selected group of high-level professionals with decades of International experience to exceed Clients' expectations.

EPN Consulting is able to provide Clients with an exclusively tailored professional service that large consulting firms find hard to supply.



Outline

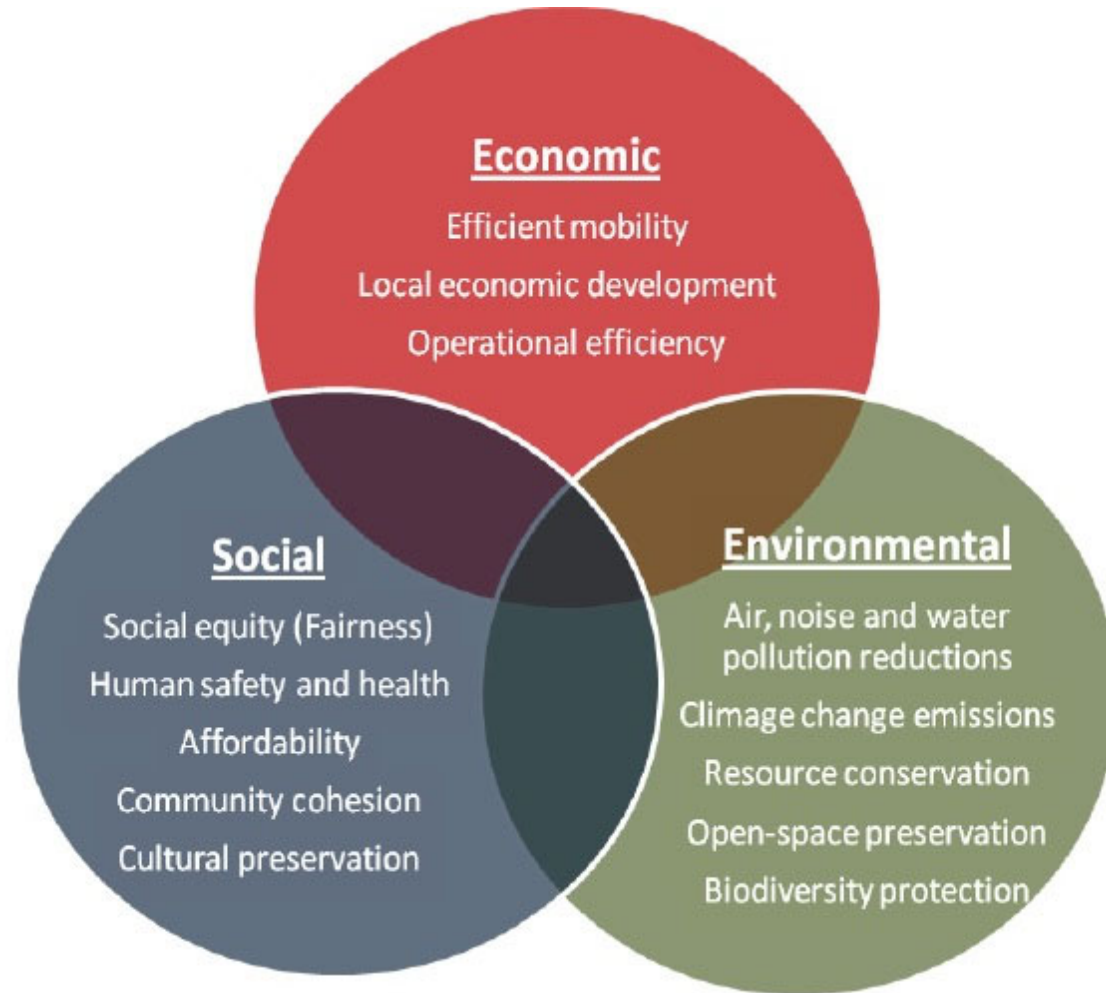
- **Parte 1 - Tematiche attuali**
 - Intro
 - ITS+MaaS
 - Green Vehicles
 - Elettrificazione
 - Batterie
 - Veicoli Automatici
- **Parte 2 - Visione UE**
 - Roadmap to Single European Transport Area
 - European Green Deal
 - Sustainable and Smart Mobility Strategy
 - Esempi di progetti Europei Horizon 2020 sui Trasporti (in corso)
- **Parte 3 - Finanziamenti Europei futuri (cenni)**
 - EU Multi-Financial Framework (MFF) 2021-2027
 - Horizon Europe (2021-2027)
 - Altri programmi (2021-2027)

Parte 1

Tematiche attuali

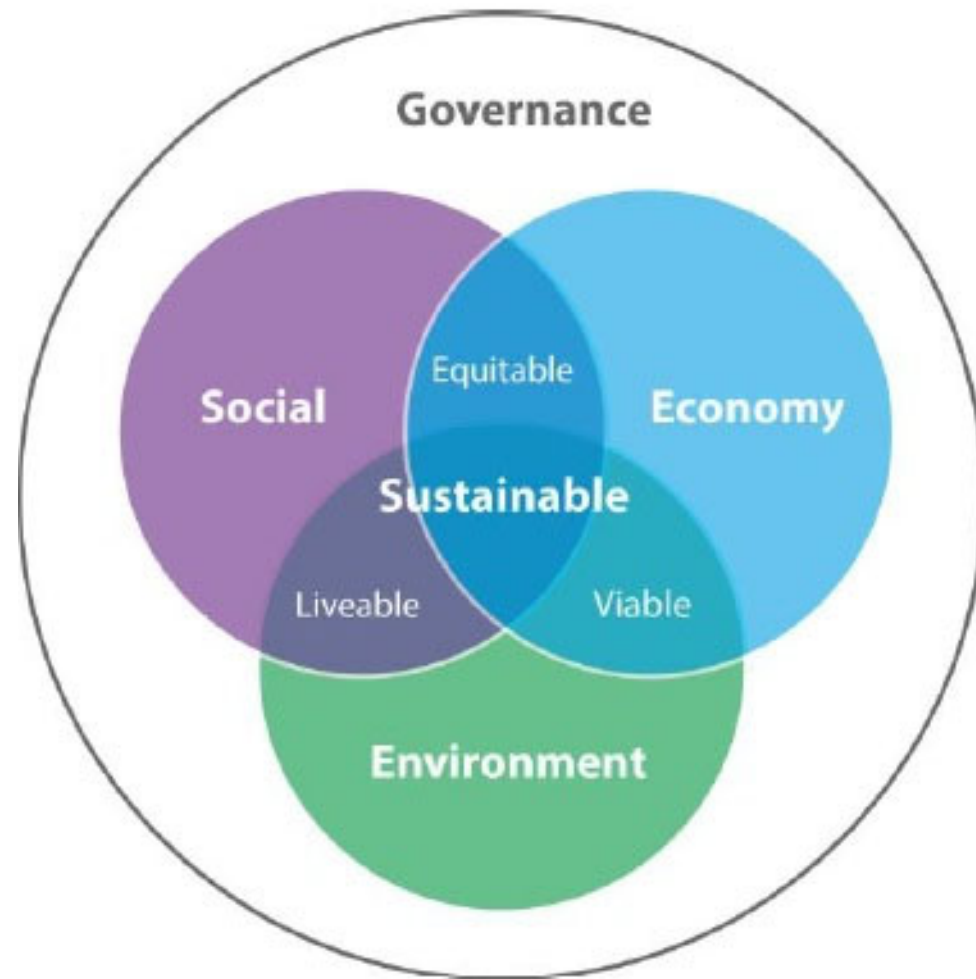
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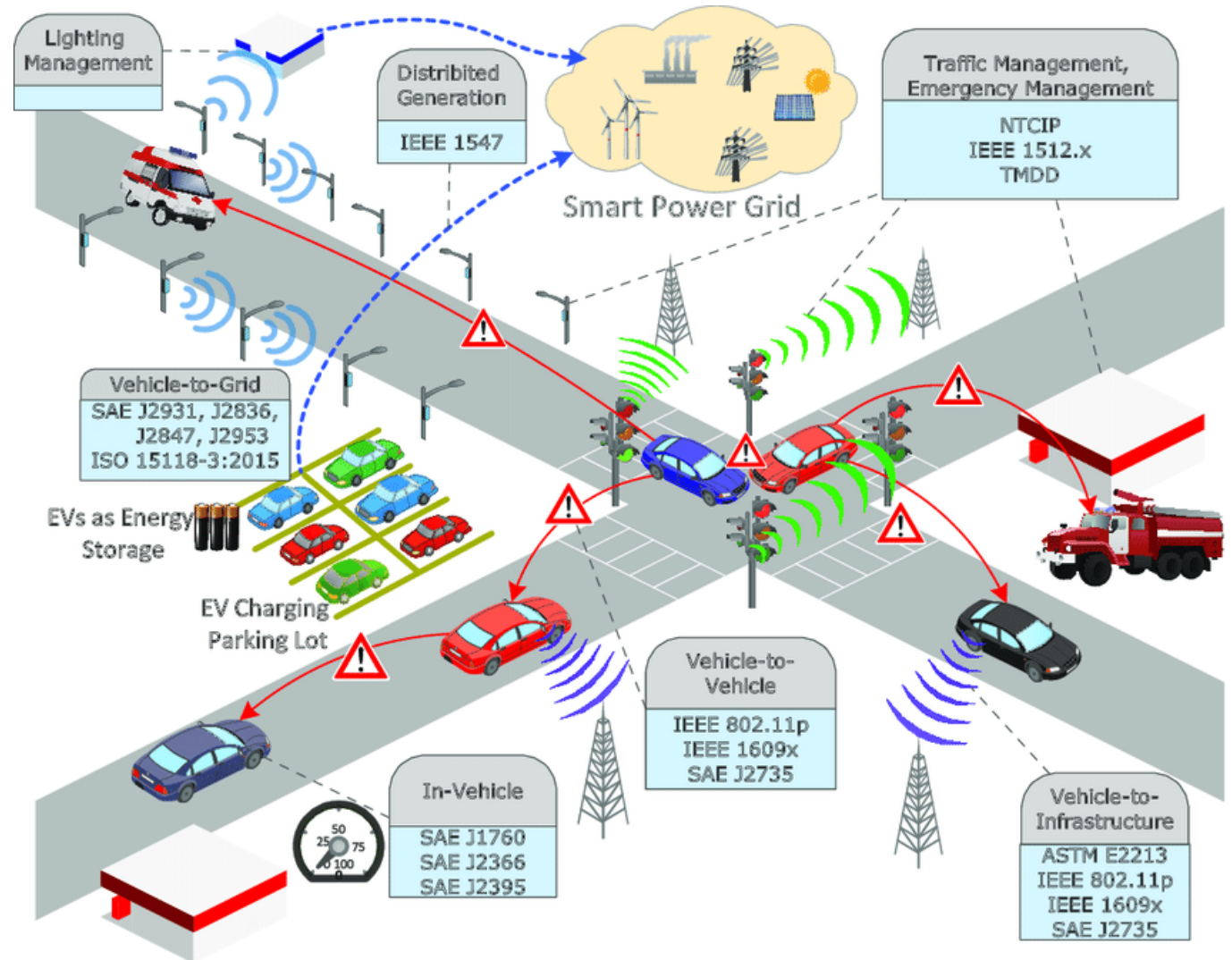
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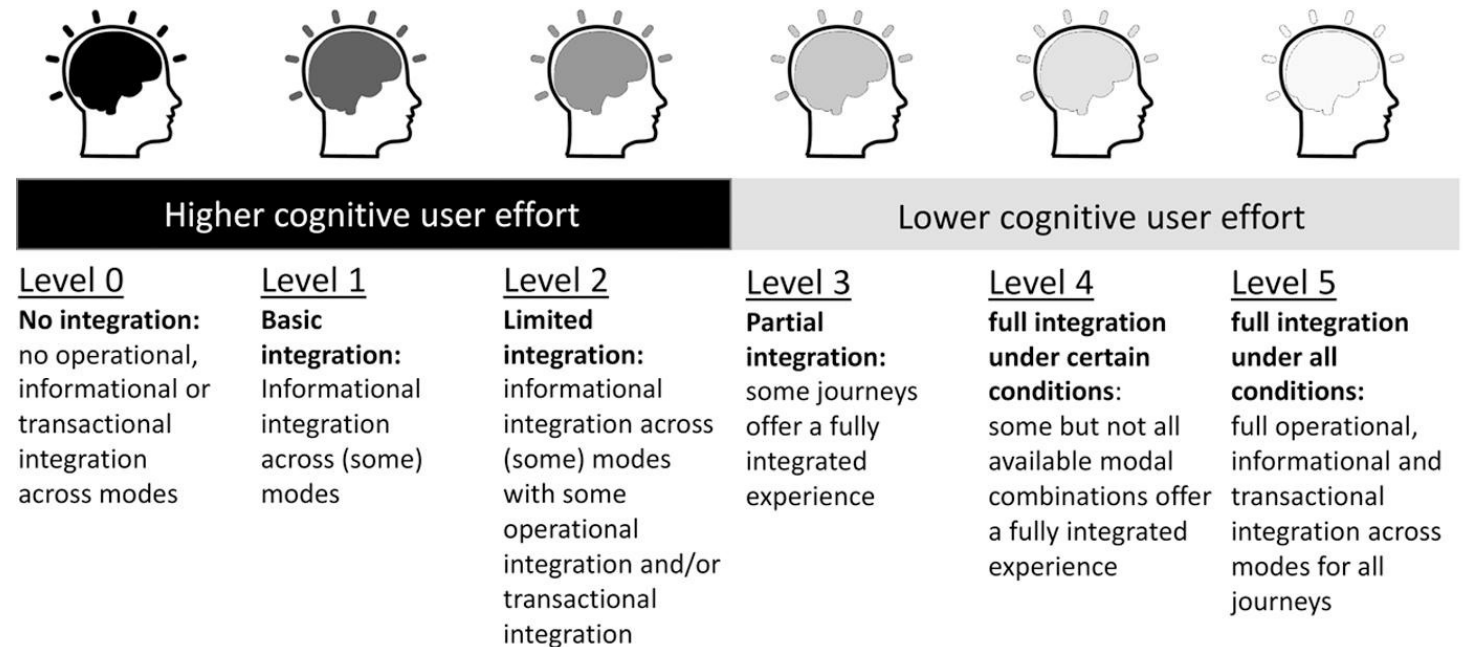
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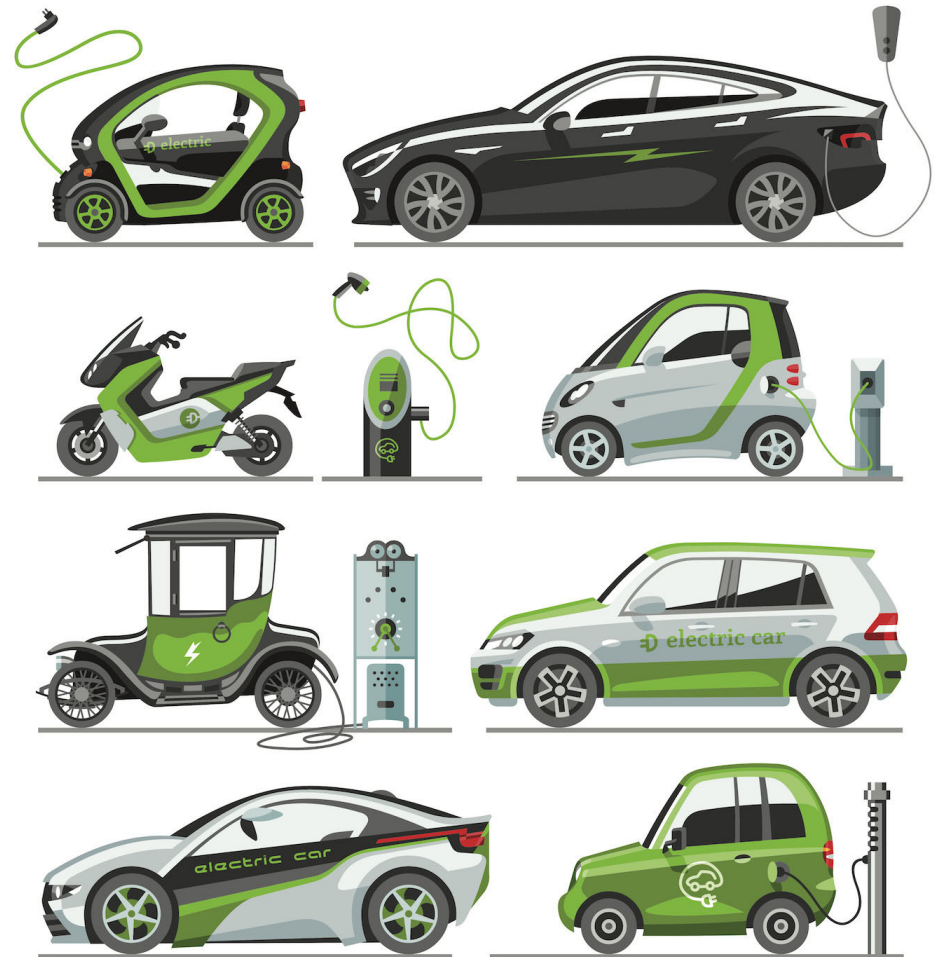
Levels of MaaS Integration



cognitive user effort: the effort involved in relying upon the mobility system beyond the private car to fulfil mobility goals
operational integration: interchange penalties are low and door-to-door journey experience is 'seamless'
informational integration: journey planning and execution information for available modes is offered through one interface
transactional integration: payment and any required booking and ticketing is offered through one interface

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SAE J3016™ LEVELS OF DRIVING AUTOMATION

What does the human in the driver's seat have to do?

SAE LEVEL 0	SAE LEVEL 1	SAE LEVEL 2	SAE LEVEL 3	SAE LEVEL 4	SAE LEVEL 5
You are driving whenever these driver support features are engaged – even if your feet are off the pedals and you are not steering			You are not driving when these automated driving features are engaged – even if you are seated in “the driver’s seat”		
You must constantly supervise these support features; you must steer, brake or accelerate as needed to maintain safety			When the feature requests, you must drive	These automated driving features will not require you to take over driving	

What do these features do?

These are driver support features			These are automated driving features		
These features are limited to providing warnings and momentary assistance	These features provide steering OR brake/acceleration support to the driver	These features provide steering AND brake/acceleration support to the driver	These features can drive the vehicle under limited conditions and will not operate unless all required conditions are met	This feature can drive the vehicle under all conditions	
<ul style="list-style-type: none"> • automatic emergency braking • blind spot warning • lane departure warning 	<ul style="list-style-type: none"> • lane centering OR • adaptive cruise control 	<ul style="list-style-type: none"> • lane centering AND • adaptive cruise control at the same time 	<ul style="list-style-type: none"> • traffic jam chauffeur 	<ul style="list-style-type: none"> • local driverless taxi • pedals/steering wheel may or may not be installed 	<ul style="list-style-type: none"> • same as level 4, but feature can drive everywhere in all conditions

Example Features

Parte 2

Visione UE

Visione UE – Roadmap to Single European Transport Area

STRIA (Strategic Transport Research and Innovation Agenda) è l'Agenda Strategica della UE nell'ambito dei Trasporti per un Sistema Europeo integrato che utilizzi al meglio innovazione e tecnologia. È stata pubblicata il 31/05/2017.

Ci sono sette “roadmaps” che coprono le seguenti priorità di medio e lungo termine:

- 1) Electrification
- 2) Alternative fuels
- 3) Vehicle Design and Manufacturing
- 4) Connected and Automated Transport
- 5) Infrastructure
- 6) Network and Traffic Management Systems
- 7) Smart mobility and services

Lettura
consigliata!

<https://ec.europa.eu/transport/sites/transport/files/swd20170223-transportresearchandinnovationtomobilitypackage.pdf>

Visione UE – EU Green Deal

- Firmato il 11/12/2019, l'European Green Deal fa parte delle Priorità strategiche della UE nel periodo 2019-2024 - https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en
- Alla fine di Horizon 2020 era stata lanciata una mega-call cui fu allocato **1 miliardo di EUR** per affrontare le seguenti tematiche:
 - Increasing climate ambition;
 - Clean, affordable and secure energy;
 - The industry for a clean and circular economy;
 - Energy and resource-efficient buildings;
 - **Sustainable and smart mobility;**
 - Farm to fork (including precision farming);
 - Biodiversity and ecosystems; and
 - Zero-pollution and toxic-free environments



Per questa call, scaduta il 26/01/2021, sono state presentate 1,550 proposte progettuali.

Visione UE – Sustainable and Smart Mobility Strategy

Questa strategia è stata pubblicata il 09/12/2020 tenendo conto dell' **European Green Deal** siglato l'11/12/2019 e la **EU's Digital Strategy**.

La strategia di mobilità si articola su **82 iniziative** raggruppate in **10 aree-chiave** (denominate “*flagships*”) per azioni concrete da implementarsi entro il 2024.

Vi sono *milestones* da raggiungere entro il 2030, 2035 e 2050 e riguardano **tutte le modalità di trasporto**: veicoli stradali, treni, aerei e imbarcazioni marittime.

Sono inclusi anche porti, aeroporti e vie fluviali.

Tra l'altro, il **2021** è stato identificato **European Year of Rail** per promuovere i benefici del trasporto via ferro.

<https://ec.europa.eu/transport/sites/transport/files/legislation/com20200789-annex.pdf>

Lettura
consigliata!

Visione UE – Esempi di Progetti H2020 sui Trasporti (in corso)

- **STEVE** - Smart-Taylored L-category Electric Vehicle demonstration in hEterogeneous urbanuse-cases

By involving human science and transportation specialists, the STEVE partners have developed a framework to interpret these forces. Focus will be on mature cities of medium size [**Torino**: 800.000 inhabitants, Villach 60.000, Calvià 60.000, **Venaria (Torino)** 35.000], where STEVE will generate data to support the design of next generation Light Electric Vehicles (EL Vs) and provoke the mind-shift necessary for swift market penetration of them.

The primary idea of STEVE is to implement and test a human-centric approach to electro-Mobility-as-a-Service (eMaaS), according to the “Move2Me” vision of the consortium.

Duration: Nov 2017 – Feb 2021. **Led by** INFINEON TECHNOLOGIES AUSTRIA AG (Austria) + 20 partners (7 Italiani)

Project value: €9.48m ; **EU funding:** €7.43m - <https://cordis.europa.eu/project/id/769944>

- **GECKO** - Governance for new mobility solutions

The overall goal of GECKO is to support authorities in developing the most appropriate regulatory framework and governance model, through guidance, recommendations and case studies, for the transition to a new mobility era of cooperative, inclusive, competitive, sustainable and interconnected mobility across all modes, through evidence-based research.

Duration: Dec 2018 – May 2021. **Led by** UITP (Belgium) + 9 partners (2 Italiani)

Project value = EU Funding: €1.996m - <https://cordis.europa.eu/project/id/824273>

Visione UE – Esempi di Progetti H2020 sui Trasporti (in corso)

- **X2Rail-4 (Shift2Rail)** - Advanced signalling and automation system - Completion of activities for enhanced automation systems, train integrity, traffic management evolution and smart object controllers

It will develop railway line capacity increase by integrating and testing Obstacle Detection tools and environment sensors and will develop complete On-Board Train Integrity system prototypes applicable in both passengers and cargo trains with or without wired communication. Additionally, the project will design a communication platform for the management of communication and data exchange between different services.

Duration: Dec 2019 – Feb 2023. **Led by** ALSTOM (France) + 19 partners (2 Italiani)

Project value: €41.1m ; **EU funding:** €17.9m - <https://cordis.europa.eu/project/id/881806>

- **HADRIAN** - Holistic Approach for Driver Role Integration and Automation Allocation for European Mobility Needs

It will develop a holistic driving system solution, focusing on the utility of dynamically adjusting (fluid) human-machine interfaces that take environmental and driver conditions into account. The project will increase the safety of automated driving. The project's findings (demonstrators and metrics) will be translated into guidelines and recommendations.

Duration: Dec 2019 – May 2023. **Led by** VIRTUAL VEHICLE RESEARCH GMBH (Austria) + 15 partners (nessun Italiano)

Project value = EU Funding: €7.995m - <https://cordis.europa.eu/project/id/875597>

Visione UE – Esempi di Progetti H2020 sui Trasporti (in corso)

- **Drones4Safety** - Inspection Drones for Ensuring Safety in Transport Infrastructures

It aims to build a cooperative, autonomous, self-recharging and continuously operating drone system for autonomous, accurate and frequent inspections of transport infrastructures. This new system will be made available to railway and bridge operators to remotely monitor the status of their infrastructures and notifying them if a fault is detected.

Duration: June 2020 – May 2023. **Led by** SYDDANSK UNIVERSITET (Denmark) + 8 partners (3 Italiani)

Project value: €3.7m ; **EU funding:** €3.5m - <https://cordis.europa.eu/project/id/861111>

- **ULaaDS** - Urban Logistics as an on Demand Service

Its vision is to develop sustainable and liveable cities through re-localisation of logistics activities and re-configuration of freight flows at different scales. Specifically, ULaaDS will use a combination of innovative technology solutions (vehicles, equipment and infrastructure), new schemes for horizontal collaboration (driven by the sharing economy) and policy measures and interventions as catalysers of a systemic change in urban and peri-urban service infrastructure.

Duration: Sept 2020 – Aug 2023. **Led by** FREIE HANSESTADT BREMEN (Germany) + 23 partners (1 partner)

Project value = EU Funding: €3.15m - <https://cordis.europa.eu/project/id/861833>

Visione UE – Esempi di Progetti H2020 sui Trasporti (in corso)

CIVITAS is a network of cities for cities dedicated to cleaner, better transport in Europe and beyond. **Over 800** innovative urban transport measures and solutions in **over 80 Living Lab cities** across Europe **since 2002** show why CIVITAS stands for **City VITALity and Sustainability**.

- **Sustainable Urban Mobility Plans:** SUITS, SUMP-PLUS, PARK4SUMP
- **Sustainable neighbourhood mobility planning:** METAMORPHOSIS, MUV – Mobility Urban Values, SUNRISE, Cities-4-People
- **Cycling:** HANDSHAKE
- **Electromobility:** MEISTER, GREEN CHARGE
- **Clear Urban Freight:** CCCB-CityChangerCargoBike, LEAD, SENATOR
- **Urban Vehicle Access Regulations:** ReVeal
- **Emerging Transport Solutions:** HARMONY, MOMENTUM, SPROUT

<https://civitas.eu/projects/research>

Parte 3

Finanziamenti Europei Futuri

Finanziamenti EU Futuri – MFF 2021-2027 (il Budget della UE)

22.12.2020

EN

Official Journal of the European Union

L 433 I/11

COUNCIL REGULATION (EU, Euratom) 2020/2093

of 17 December 2020

laying down the multiannual financial framework for the years 2021 to 2027

(EUR million – 2018 prices)

Commitment appropriations	2021	2022	2023	2024	2025	2026	2027	Total 2021-2027
1. Single Market, Innovation and Digital	19 712	19 666	19 133	18 633	18 518	18 646	18 473	132 781
2. Cohesion, Resilience and Values	49 741	51 101	52 194	53 954	55 182	56 787	58 809	377 768
2a. Economic, social and territorial cohesion	45 411	45 951	46 493	47 130	47 770	48 414	49 066	330 235
2b. Resilience and values	4 330	5 150	5 701	6 824	7 412	8 373	9 743	47 533
3. Natural Resources and Environment	55 242	52 214	51 489	50 617	49 719	48 932	48 161	356 374
of which: Market related expenditure and direct payments	38 564	38 115	37 604	36 983	36 373	35 772	35 183	258 594
4. Migration and Border Management	2 324	2 811	3 164	3 282	3 672	3 682	3 736	22 671
5. Security and Defence	1 700	1 725	1 737	1 754	1 928	2 078	2 263	13 185
6. Neighbourhood and the World	15 309	15 522	14 789	14 056	13 323	12 592	12 828	98 419
7. European Public Administration	10 021	10 215	10 342	10 454	10 554	10 673	10 843	73 102
of which: Administrative expenditure of the institutions	7 742	7 878	7 945	7 997	8 025	8 077	8 188	55 852
TOTAL COMMITMENT APPROPRIATIONS	154 049	153 254	152 848	152 750	152 896	153 390	155 113	1 074 300
TOTAL PAYMENT APPROPRIATIONS	156 557	154 822	149 936	149 936	149 936	149 936	149 936	1 061 058

MFF – Multi-
Financial
Framework:
€ 1,074bn

+

Next Generation
EU: € 750bn

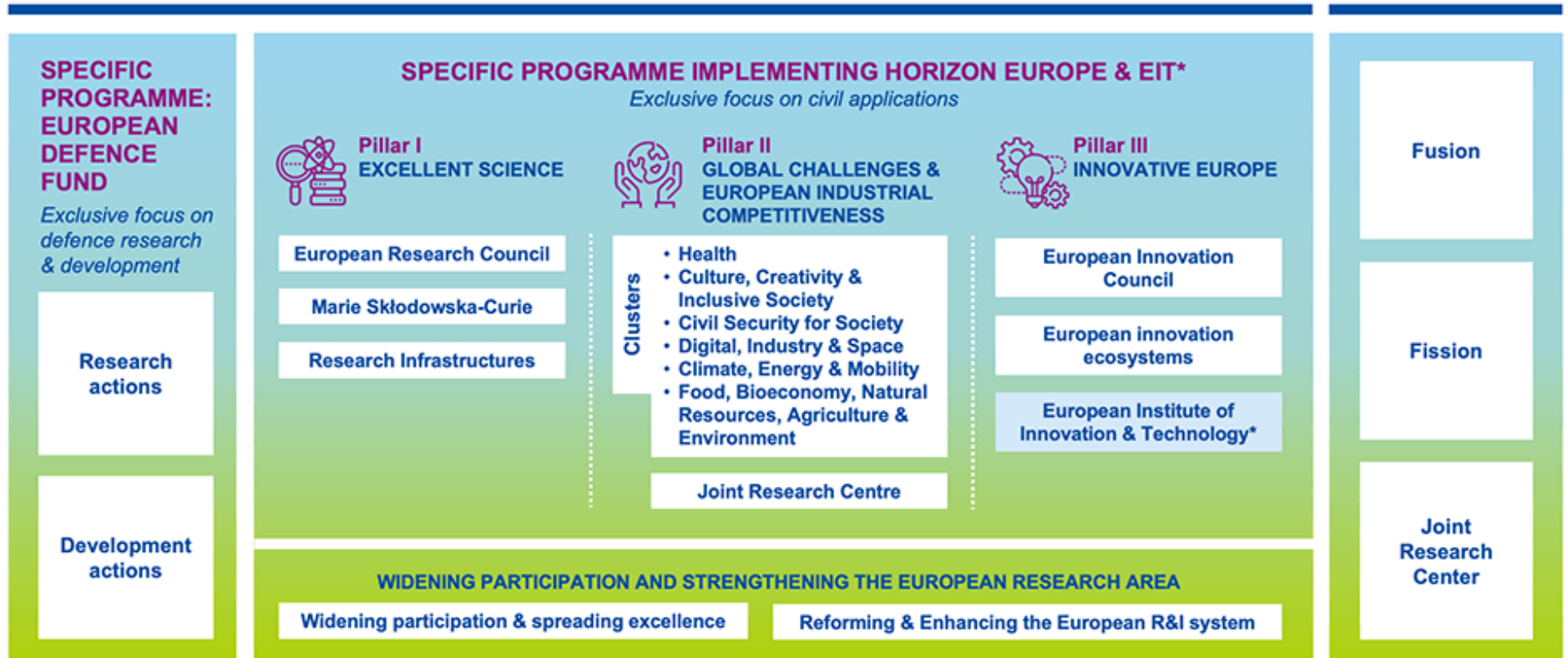
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Total: € 1,824bn =
€ 1.8 trillion

Finanziamenti EU Futuri

HORIZON EUROPE

EURATOM



* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme

Finanziamenti EU Futuri – EIC+EIT = MoU *firmato il 08/01/2021*



- The EIT supports institutions in Knowledge Triangle (research, business, education) to build ecosystems and innovation capacity;
- The EIC intends to support individual start-ups/SMEs to scale up innovations and innovative research teams (universities, research organisations, industry) to develop emerging technologies;
- The EIT KICs have thematic focus and cover any forms of innovation;
- EIC will follow a mainly bottom up approach, funding any technology/application area, with a focus on disruptive deep tech innovations.

Finanziamenti EU Futuri – Horizon Europe v Horizon 2020

Horizon 2020 (H2020) era identificato come “Research & Innovation” Programme

Horizon Europe (HEU) viene identificato come “Research & Innovation” **Investment** Programme

Horizon 2020 (H2020) aveva un budget di EUR 77 miliardi

Horizon Europe (HEU) avrà un budget indicativo di **EUR 95.5 miliardi**

Horizon 2020 (H2020) non aveva “Missions”

Horizon Europe (HEU) avrà 5 “Missions” riguardanti:

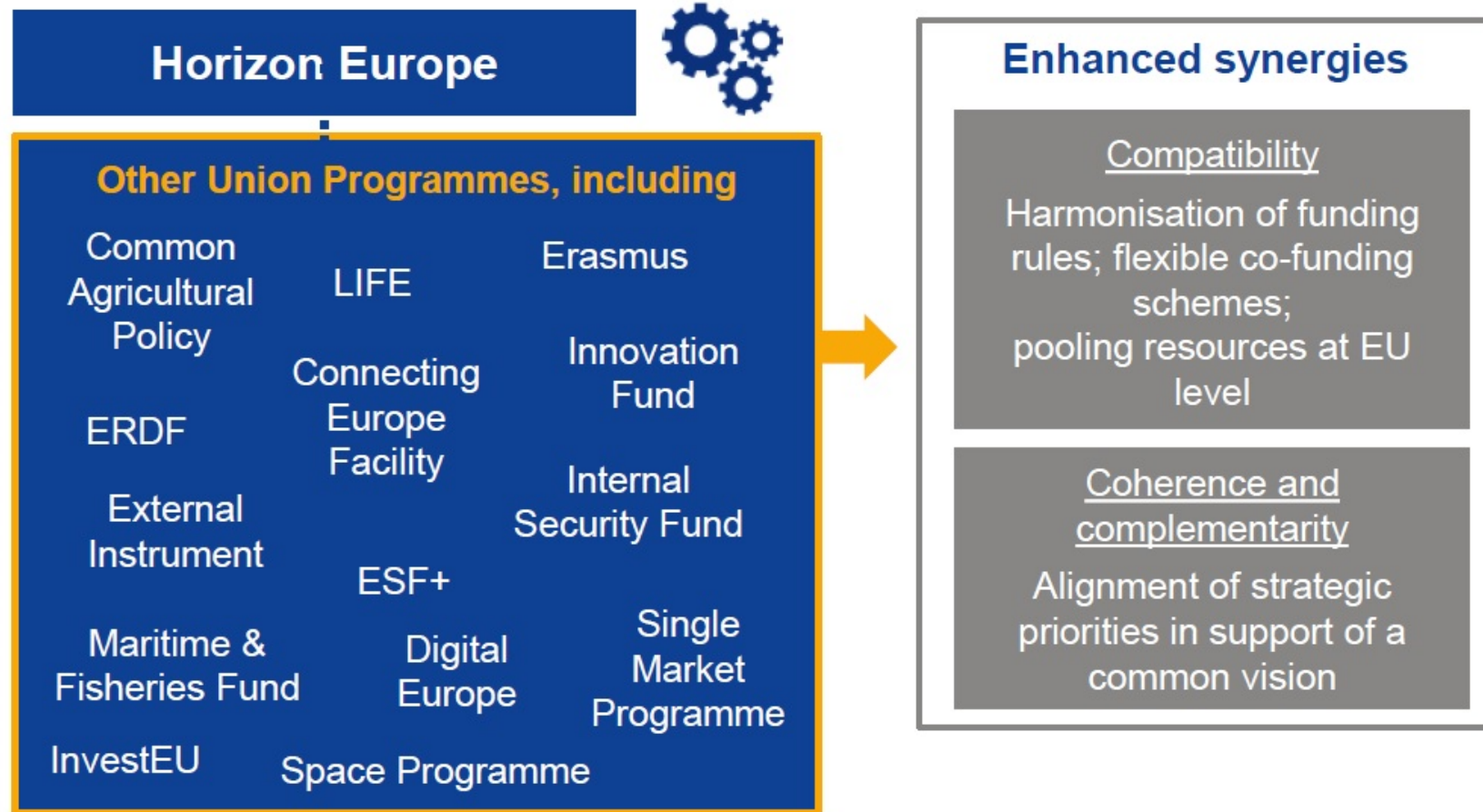
- Cancer
- Adaptation to climate change including societal transformation
- Healthy oceans, seas coastal and inland waters
- **Climate-neutral and smart cities**
- Soil health and food

Oltre il 35% dei fondi di finanziamento di **Horizon Europe** sarà destinato a obiettivi climatici

Per ogni “Mission” verrà costituito un *board* il quale consisterà di un Gruppo di esperti (fino a 15) appartenenti a vari campi

Horizon Europe avrà il medesimo schema di finanziamento di H2020: 100% per progetti di ricerca (Research and Innovation Actions, RIA) e 70% per progetti implementativi (Innovation Actions, IA))

Finanziamenti EU Futuri – Altri programmi



Grazie dell'attenzione!

Credits: "Well Measured - Developing Indicators for Sustainable and Livable Transport Planning", 18/3/2019 - Victoria Transport Policy Institute, Canada; "Green Pact 2016-2020" - Montreal's Local sustainable development plan; ScienceDirect - The importance of user perspective in the evolution of MaaS; EGVI - European Green Vehicles Initiative; SmartCityWorld.net; CleanEnergyWire.org; Researchgate.net



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