Annex

Coherence and Synergies of candidate European Partnerships under Horizon Europe

Directorate-General for Research and Innovation

A4 Partnership Sector

October 2020

Contents

Additional information

This annex complements the mapping report on coherence and synergies of candidate European Partnerships under Horizon Europe and reflects the situation of October 2020. It does not reflect the final position of the Commission.

Short descriptions of Partnership candidates are available on the webpage.

List of partnership candidates and abbreviations used in the tables:

EU-Africa Global Health Partnership	
European Partnership for Innovative Health	
European Partnership for Chemical Risk Assessment	
European Partnership – ERA for Health	ERA Health
European Partnership on Health and Care Systems Transformation	
European Partnership for Personalised Medicine	
European Partnership on Rare Diseases	
European Partnership on One Health / Antimicrobial Resistance (AMR)	One Health / AMR
European Partnership for High Performance Computing	HPC
European Partnership for Key Digital Technologies	KDT
European Partnership for Smart Networks and Services	SNS
European Partnership on AI, Data and Robotics	
European Partnership for Photonics	
European Partnership for Clean Steel - Low Carbon Steelmaking	Clean Steel
European Partnership on Metrology	Metrology
European Partnership Made in Europe	
European Partnership for Climate Neutral and Circular Industry	Circular Industry
European Partnership for Globally competitive Space Systems	Space
European Partnership for Transforming Europe's rail system	
European Partnership for Integrated Air Traffic Management	ATM
European Partnership for Clean Aviation	
European Partnership on Clean Hydrogen	
People-centric sustainable built environment	Built4People
European Partnership - Towards zero-emission road transport	2ZERO
European Partnership on Connected, cooperative and Automated Mobility	CCAM
European Partnership on Zero-emission Waterborne Transport	
European industrial battery value chain	
European Partnership - Driving Urban Transitions to a sustainable future	DUT
European Partnership for Clean Energy Transition	
European Partnership Accelerating farming systems transition: agroecology living labs and research infrastrustures	Agroecology living labs/AELL
European Partnership for Animal Health and Welfare	Animal health and Welfare/PAHW
Agriculture of Data ((European Partnership on environmental observations for sustainable EU-agriculture)	Agriculture of Data
European Partnership Rescuing biodiversity to safeguard life on Earth	Rescuing Biodiversity
European Partnership for A climate neutral, sustainable and productive Blue Economy	Blue Economy
European Partnership for Safe and Sustainable Food System	Food system
European Partnership for a Circular bio-based Europe	CBE
European Partnership Water security for the planet (Water4All)	Water4All
Innovative SMEs	
European Open Science Cloud Partnership	EOSC
EIT Climate-KIC	
EIT InnoEnergy	
EIT Digital	
EIT Health	
EIT Food	
EIT Manufacturing	
EIT Raw Materials	
EIT Urban Mobility	
KIC Cultural and Creative Industries	

Coding in tables:

	Both Partnerships indicate coherence
	Only left column Partnership indicates coherence
	No Partnership mentions coherence, but might have some
x	Priority for collaboration
o	Exchange of information suggested

● Proposers indicated possible synergy

❍ Possible additional synergies

1 Health – Cluster 1

Table 1 Cluster 1 - Coherence with other partnerships

Both mentioned
Only left column
Partnership indicates coherence
Suggested by COM services
x Priority
o Inform
Programme 2023-24

		Cluster 1								Cluster 4									Cluster5										Cluster 6									Other Pillars												
		EU-Africa Global Health	Innovative Health	Chemical Risk Assessment	ERA Health	Transforming Health and Care Systems	Personalised Medicine	Rare Diseases	One Health / AMR	HPC	Key Digital Technologies	Smart Networks and Services	AI, data and robotics	Photonics Europe	Clean Steel	Metrology	Made in Europe	Carbon Neutral and Circular Industry	Globally competitive Space Systems	Transforming Europe's rail system	Integrated Air Traffic Management	Clean Aviation	Clean Hydrogen	Built4People	2ZERO	CCAM	Zero-emission waterborne transport	European industrial battery value chain	DUT	Clean Energy Transition	Agroecology living labs	Animal Health and Welfare	Agriculture of Data	Rescuing biodiversity to safeguard life on Earth	Blue Economy	Safe and Sustainable Food System	Circular bio-based Europe	Water4All	Innovative SMEs	European Science Cloud	EIT Climate-KIC	EIT InnoEnergy	EIT Digital	EIT Health	EIT Food	EIT Manufacturing	EIT Raw Materials	EIT Urban Mobility	KIC Cultural and Creative Industries
Cluster 1	EU-Africa Global Health		x						x			o	o	o		o																						o										
	Innovative Health	x			x	x			x	x	x	o	x			o																						o				x						
	Chemical Risk Assessment		x		x	-										o		o															o	x		o	x	o										
	ERA Health	x	x	x		x	x	x	x			o	o	o		o																						o				x						
	Transforming Health and Care Systems	o	x	o	x		x	x	x		x	o	x	o		o																						o				x						
	Personalised Medicine		x		x	x		x				o	o	o		o																						o				x						
	Rare Diseases		x		x	x	x				x	o	x	o		o																						o				o						
	One Health/AMR	x	x		x	x						o	o	o		o															x							o										

Table 2 Cluster 1 - Synergies with other programmes

● Proposers indicated possible synergy
❍ Possible additional synergies

	Cluster 1							
	EU-Africa Global Health	Innovative Health	Chemical Risk Assessment	ERA Health	Transforming Healnd and Care Systems	Personalised Medicine	Rare Diseases	One Health/AMR
Other Programmes and Initiatives								
Connecting Europe Facility (CEF)		❍					❍	
Digital Europe Programme (DEP)		●		●	❍		❍	
InvestEU	❍	●		●	❍		❍	
Structural Funds (ERDF/Cohesion)		●	●	●		❍	❍	
European Social Fund + (ESF+)		●	●	❍	❍			
Important Project of Common European Interest (IPCEI)								
ETS Innovation Fund								
Modernisation Fund								
European Investment Bank	❍							
Circular Bioeconomy Thematic Investment Programme								
Programme for Environment & Climate Action (LIFE)			●					
European Maritime and Fisheries Fund (EMFF)		❍	●					
Copernicus								
GEOSS								
European Innovation Council		❍		●				
Erasmus Plus	❍		●			❍		
National Energy and Climate Change Plans								
Research Fund for Coal and Steel								
Covenant of Mayors								
EU Malaria Fund	●							
European Medicines Agency (EMA)	●							❍
European Space Agency								
Standardisation Bodies								
HE Mission Areas								
Adaptation to Climate Change, including Societal Transformation								
Climate-neutral and Smart Cities								
Cancer		●			●	❍		
Healthy Oceans, Seas, Coastal and Inland Waters		❍	●					
Soil Health and Food			●					

1.1 EU-Africa Global Health Partnership

1.1.1 Summary

The European & Developing Countries Clinical Trials Partnership (EDCTP3) will support international research partnerships accelerating the clinical evaluation of drugs, vaccines and diagnostics for key infectious diseases affecting sub-Saharan Africa, including novel approaches for surveillance and control of emerging/re-emerging infections. It will also strengthen clinical research capacity in the region. Building on the two previous EDCTP programmes, EDCTP3 will ensure that more people gain access to new medical interventions and help protect global health security.

1.1.2 Coherence and coordination among partnerships

Table 3 Overview of Partnerships identified in the EU-Africa Global Health Partnership proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health			
Digital, Industry and Space			
Climate, energy and mobility			
Food, Bioeconomy, Natural Resources, Agriculture and Environment			
Other Pillars			

Notes for further development:
The proposal does not map coherence with other European Partnerships. Especially coherence and coordination within cluster 1 should be developed.

Key issues to address:

- Please identify the other relevant European Partnerships that should be a priority for collaboration and explain their relevance.

1.1.3 Synergies with other Programmes

Table 4 Overview of synergies identified in the EU-Africa Global Health Partnership proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Global Research Collaboration for Infectious Disease Preparedness (GloPID-R)	▪ Opportunities for alignment of activities related to outbreak preparedness and clinical evaluation of interventions in outbreak settings.	
Joint Programming Initiative on Antimicrobial Resistance	▪ Opportunities for collaboration to enhance new antimicrobial development against priority organisms, enhanced antibiotic stewardship, and vaccine development to reduce reliance on antimicrobials.	

EU Malaria Fund	▪ Opportunities for complementary funding of late-stage clinical trials.	
European Medicines Agency (EMA)	▪ Early engagement to prepare for future registration of new or improved medicinal products especially for use in individuals with major unmet medical need, such as children.	
Other initiatives in Horizon Europe		

Notes for further development:

The proposal states that the partnership will explore opportunities for collaboration with other EU initiatives with interests in infectious disease control, capacity building, education, health security and emergency responses, and health and development. It says that in several of these areas, discussions will build on links already established in the European and Developing Countries Clinical Trials Partnership (EDCTP) programmes. According to the proposal the goal is to develop mutually beneficial arrangements that enable both parties to better achieve their aims through aligned activities and joint initiatives.

Participating States-Initiated Activities (PSIAs) are mentioned as representing an important component of the partnership's portfolio.

- The section includes references to other Union programmes, but not to policies and priorities. Please introduce references to those (and the relevant SDGs).
- Use also the relevant priorities of the new Commission as a point of reference, Global Health can link to "Promoting our European way of life" and "A stronger Europe in the world".

1.2 European Partnership for Innovative Health

1.2.1 Summary

The Partnership for Health Innovation aims to enable the integration of cross-sectoral technologies, know-how, products, services and workflows for people-centred health care. Its ambition is to support the delivery of timely, well-informed and integrated health interventions along the health care continuum – prevention, prediction, diagnosis, management and treatment - for major diseases & unmet medical needs. By fostering European pre-competitive translational health research, the partnership aims to keep EU citizens in good health, decrease disease burden for patients, care givers and health care professionals. It will contribute to the environmental and fiscal sustainability of health care systems, competitiveness of health industries and EU technological sovereignty.

1.2.2 Coherence and coordination among partnerships

Table 5 Overview of Partnerships identified in the Innovative Health proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health	EU-Africa Global Health	▪ Enable effective prevention, diagnosis and treatment of infectious diseases and to facilitate the uptake of new interventions.	No
	Health and care systems transformation	▪ Efficient uptake of cost-effective, people-centred innovative health solutions into health care systems so that to support their sustainability.	Yes
	Personalised Medicine	▪ Enable delivery of personalised patient centric interventions	No [to be done in the next revision]
	Rare Diseases	▪ Accelerate development of new people-centred solutions and enable early intervention, including diagnosis, treatment, patient support and disease management	No proposal received at this stage (WP 2023/4)
	One Health / AMR	▪ Contribute to preventing and addressing antimicrobial resistance (AMR)	No proposal at this stage (WP 2023/4)
	ERA for Health	▪ Establish a flexible and more effective coordination between programme owners and programme funders	No proposal received
	European partnership for chemical risk assessment	▪ Bring together the European risk assessment and regulatory agencies	No
Digital, Industry and Space	Key Digital Technologies	▪ Delivery of technology that can be used in a highly regulated biomedical environment	No
	High Performance Computing	▪ Establish an integrated world-class supercomputing & data infrastructure and support a highly competitive and innovative HPC and Big Data ecosystem.	No proposal received

	Smart Networks and Services	▪ Enable effective collection and processing of data in real time	No
	Photonics	▪ Development and testing of novel technologies for understanding the molecular basis of disease, diagnostics and remote monitorig	
	Metrology	▪ Implementation of state-of-the-art metrology approaches and technologies into health research	
	AI, Data and Robotics	▪ Structure the European AI community, develop a strategic research agenda and federate efforts around a topic that holds great potential to benefit our society and economy.	No
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Animal healthHealth and Welfare	▪ Bring sustainable and innovative solutions to tackle infectious animal diseases, including those transmitted between animals and humans (zoonoses)	No proposal received
	Climate neutral, sustainable and productive Blue Economy	Biodiscovery and biotechnology ▪ Prospecting new compounds from natural sources and developing new drugs/health tests	
Other Pillars	EIT Health EIT Digital	▪ Knowledge-sharing and capacity building	n/a

Notes for further development:
Links with other partnerships are well described.

Key issues to address:
- Consider including metrology, since they will have a dedicated part on health that should be directly relevant (MedTech, diagnostics)

1.2.3 Synergies with other Programmes

Table 6 Overview of synergies identified in the xxx proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Digital Europe Programme	▪ Wherever large-scale deployment of products and services piloted in the Health PPP would be envisioned	
European Regional Development Fund	▪ Wherever their objectives converge in the fields of infrastructure of innovation, digital agenda, SME support, etc	
Other initiatives in Horizon Europe		
Mission on Cancer	▪ The shared objective is to align the developments in cancer prevention, prediction, detection, diagnosis and treatment including clinical expertise in these areas.	

Mission on Healthy Oceans, Seas, Coastal and Inland Waters	▪ One possible shared objective is to find new compounds from marine resources, which can be used for medical tests and treatment. ▪ Interdisciplinary approach incorporating marine (environment), biomedical, socioeconomic and epidemiological methods.	

Notes for further development:

The proposal states that "*Synergies will also be developed with other Horizon Europe initiatives (EIC, ERC, etc.), EU programmes and actions, such as ESF+, DEP, InvestEU, ERDF, RSP, ESIF, and cross-cluster synergies with Digital and Industry on technologies (such as Robotics, Artificial Intelligence, HPC) to further support innovation pipelines.*"

- Synergies with other EU/national programmes are reflected to some extent, focusing on Digital Europe, ERDF and other Horizon Europe initiatives. Could be elaborated.

Please see whether this paragraph could help: "Other relevant initiatives include: the Connecting Europe Facility (addressing the deployment of cross-border exchange of patients' health data in the EU and enabling Cross Border eHealth Information Services as a leading reference to set up international standards) and the Digital Europe Programme (offering opportunities to deploy, implement and upscale the digital health solutions, including those possibly initiated by the proposed initiative at the level of pre-competitive collaborations, for example in the area of modernising the public health services or advancing digital skills for health and care professionals)."

1.3 European Partnership for Chemical Risk Assessment

1.3.1 Summary

ANSES and its partners - a consortium bringing together institutions from more than 25 countries and several EU agencies - are preparing a "European Partnership for the Assessment of Risks from Chemicals" in the framework of the next European Union Framework Programme for Research and Innovation "Horizon Europe" (2021-2027). The objective is to support EU and national chemical risk assessment and risk management bodies with new data, knowledge, methods, networks and skills to address current, emerging and novel chemical safety challenges. It will facilitate the transition to next generation risk assessment to better protect human health and the environment, in line with the Green Deal's zero-pollution ambition for a toxic free environment and will be an enabler for the future EU "Chemicals Strategy for sustainability". It builds in part on the work undertaken and experience acquired in the European Joint Programme on Human Biomonitoring (HBM4EU) that is ongoing, but goes beyond by its vocation to establish an EU-wide research and innovation risk assessment hub of excellence and in fine to strengthen European capacity in chemical risk assessment. Impacts related to the specific objectives defined are expected on three levels through:
- An EU-wide sustainable cross-disciplinary network to identify and agree on research and innovation needs and support research uptake into regulatory chemical risk assessment.
- Joint EU research and innovation activities responding to identified priorities in support of current regulatory risk assessment processes for chemical substances and emerging challenges.
- Strengthening existing capacities and building new transdisciplinary platforms to support chemical risk assessment.
The Partnership brings together ministries and national public health and risk assessment agencies, as well as research organisations and academia from more than 25 countries. In addition to these national bodies, representatives of Commission Directorates-General and EU agencies involved in the monitoring of chemicals and the assessment of associated risks (including ECHA, EEA, EFSA) are also participating. This Partnership will meet the needs of risk assessment agencies to better anticipate emerging risks and thus respond to the challenges, ambitions and priorities of the new European policies.

1.3.2 Coherence and coordination among partnerships

Table 7 Overview of Partnerships identified in the European partnership for chemical risk assessment proposal

Cluster	Candidate Partnerships	Areas for collaboration
Health	Innovative Health ERA for Health Research	The occurrence of specific substances in the environment or in humans and associated risks, relevant priorities for biomedical research and innovative techniques, will be communicated to the different Health Partnerships as relevant.
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Water4All Blue economy partnership Rescuing Biodiversity	Collaborations with partnerships in charge of water, environment and bio-economy will be developed and strengthened within the framework resulting from the prioritisation of specific activities for the European Partnership for the Assessment of Risks from Chemicals. A specific task will be dedicated to establish links and share knowledge with other partnerships: both to identify possible challenges for chemical risk assessment and management, e.g. most likely related to chemical pollution as well as to share tools, methods and data from the chemical risk assessment partnership for uptake in other partnerships as relevant.

	Circular bio-based Europe	This partnership will work on solutions to capture, purify and use CO/CO2 emissions from process industries for the production of materials and chemicals with a lower environmental footprint compared to current production. The European Partnership for the Assessment of Risks from Chemicals will support this ambition through the implementation of evaluation criteria and toolbox for a safe and sustainable design of chemicals, products, materials, packaging and application processes. Discussions and collaborative activities related to bio-based chemicals, chemical recycling and circular economy will be sought.
Digital, Industry and Space	European metrology	Accurate data is essential for monitoring and managing the environment and health. One of the aims of the European Partnership for the Assessment of Risks from Chemicals is to define the relevant analytical methods for exposure assessment and source monitoring and to support them in the different stages of validation. Some of these methods will be used for regulatory monitoring of the environment or for biomonitoring in occupational environments. Collaboration will be important to assess the performance of new methods and ensure the effective transfer and standardisation of new approaches and methods in the regulatory framework. Next generation chemical risk assessment will increasingly rely on the analytical and interpretative capacity of data from devices with high information content (genomics, transcriptomics, proteomics, high-resolution mass spectrometry, 2D microscopic imaging, dynamic 3D, etc.) used at different scales (from molecule to population in different environments) obtained at different temporal and spatial resolutions. Collaboration with digital sciences and imaging techniques at different scales will be sought to benefit from innovations in these fields in terms of data acquisition, modelling and analysis.
	Carbon Neutral and Circular Industry – Processes4Planet	The Circular bio-based Europe will drive forward the societal transition towards a sustainable and circular bio-based economy and accelerating the transition to a healthy planet towards implementation of the Sustainable Development Goals. Discussions and joint activities related to bio-based chemicals, circular economy and EU policies for a sustainable chemical bio-based development will be sought.
Other Pillars	European Open Science Cloud	The EOSC Partnership will design and support the deployment of the Web of FAIR (Findable, Accessible, Interoperable, Reusable) Data. This will be important for the European Partnership for the Assessment of Risks from Chemicals as setting up the Partnership presupposes the rapid establishment of conditions for access and sharing of data and software, and a good exchange with the partnership on European Open Science Cloud (EOSC) will promote common concepts.
Mission Areas	▪ Soil Health and Food Mission ▪ Healthy Oceans, Seas, Coastal	Like for collaboration with other Partnerships the focus would be needs identified in the missions related to chemical pollution, risk assessment and management as well as sharing of results and data from the European Partnership for the

	and Inland Waters	Assessment of Risks from Chemicals for uptake in the missions.

In addition to the coordination with other partnerships, linkages and collaboration with projects funded under H2020 will also be established. Example of such are the EURION cluster[1], the European Human Exposome Network[2], the HERA project[3] as well as proposals resulting from the last calls under H2020, in particular the Green Deal call topics focusing on mitigating the effects of persistent and mobile chemicals and chemical and pharmaceutical mixtures.
Also, the European Chapter of the International Society for Exposure Science (ISES Europe) is currently establishing an overarching European Exposure Science Strategy[4], which should be closely monitored and synergies created with the Partnership.
Opportunities arising from other Union programmes will also be explored.

1.3.3 Synergies with other Programmes

Table 8 Overview of synergies identified in the European partnership for chemical risk assessment proposal

Programmes at EU, national or regional level	Purpose	Details (form etc.)
Structural Funds (ERDF/Cohesion)	▪ Development of national/regional capacities	MS to explore national opportunities offered and benefit from peer-to-peer learning in the partnership to develop capacities. Possibilities to use structural funds for co-funding to be explored.
European Social Fund Plus (ESF+)	▪ Working environment, Public Health and chemical exposures	More targeted funding opportunities for implementing results from the Partnership or collaborating on key challenges.
LIFE	▪ Environmental pollution	More targeted funding opportunities for implementing results from the Partnership or collaborating on key challenges for projects dedicated to technologies for the environment and climate.
ERASMUS+	▪ Promote actions in the field of education, training and skills development in the area of chemical risk assessment	The different organisations in the Partnership will have to explore funding opportunities to foster innovative skills. Input to programme development with identified needs and to promote actions in the field of education, training and skills development in the area of chemical risk assessment

[1] https://eurion-cluster.eu/
[2] https://www.humanexposome.eu/
[3] https://www.heraresearcheu.eu/
[4] Fantke, P., von Goetz, N., Schlüter, U., Bessems, J., et al., 2020. Building a European exposure science strategy. J Expos Sci Environ Epidemiol. http://10.1038/s41370-019-0193-7

Research Infrastructures	▪ Research Infrastructures	Collaboration on the development of infrastructures, e.g. for human biomonitoring, for the development of technological platforms for physico-chemical analysis, for high throughput or high information content analysis and to establish conditions of sustainability of network of laboratories in exposure and toxicology science.
Marie Sklodowska-Curie Actions	▪ Marie Sklodowska-Curie Actions	To reach its goals for training, the Partnership will develop synergies to support training through doctoral and fellowship programmes and rely on opportunities for training schemes to promote the initial (doctoral) and professional training of scientists in risk assessment in collaboration with academic partners.

1.4 European Partnership - ERA for Health

1.4.1 Summary

Please include 500-space summary.

1.4.2 Coherence and coordination among partnerships

Table 9 Overview of Partnerships identified in xxx proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health			
Digital, Industry and Space			
Climate, energy and mobility			
Food, Bioeconomy, Natural Resources, Agriculture and Environment			
Other Pillars			

1.4.3 Synergies with other Programmes

Table 10 Overview of synergies identified in the xxx proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
	▪	
	▪	
	▪	
Other initiatives in Horizon Europe		
▪	▪	

1.5 European Partnership on Health and Care Systems Transformation

1.5.1 Summary

A public-public partnership aimed at ensuring the transition towards more sustainable, resilient, innovative and high quality people-centred health and care systems. It will pool a critical mass of European/national/regional scientific resources to research, develop and test organisational, service and policy innovations, as well as the conditions for their scaling-up and transfer to other countries and regions. Additionally to strengthening the collaboration between policy makers, users, professionals and researchers from different countries and regions, the partnership will also support the collaboration between local/regional healthcare eco-systems as the crucial intervention/transformation level. The partnership will contribute to a faster dissemination of research results and their uptake into sectoral policies and practice within and across European countries.

1.5.2 Coherence and coordination among partnerships

Table 11 Overview of Partnerships identified in the Health and Care Systems Transformation proposal (THCS) proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health	Innovative Health Initiative	▪ IHI aims to accelerate the development of scientific and technological innovations to address unmet public health needs (in a pre-competitive context). The THCS partnership may contribute to formulating the unmet public health needs, as well as to inform the R&I activities pursued by IHI. ▪ The THCS partnership will facilitate the uptake of effective and efficient innovative solutions developed by IHI. It will also research and test the context specific conditions for scaling-up and transfer of IHI innovations.	Yes
	Personalised Medicine	▪ The PM partnership will support coordinated multidisciplinary PM research across Europe aimed at bringing personalised solutions into clinical practice. It also plans to provide socio-economic evidence for the uptake of personalised medicine by health and care systems. ▪ The THCS partnership will facilitate the uptake of effective and efficient PM solutions. It will provide context-specific evidence on scalability and transfer of PM innovations.	The detailed proposal will be developed at a later stage (WP 2023/4)

	Rare Diseases	▪ The RD partnership will contribute to coordinated and joint R&I to develop diagnostics, treatments and cures for rare diseases, as well as to inform policies in this area. ▪ The THCS partnership will contribute to aligning the RD research to the priority needs of health and care systems across Europe. It will also facilitate the uptake of efficient research results delivered by the RD partnership by providing context-specific knowledge and evidence on scalability and transfer of RD innovations.	The detailed proposal will be developed at a later stage (WP 2023/4)
	One Health/AMR	▪ The One Health/AMR partnership will contribute to aligning national research and improving EU coordination of research activities to provide novel solutions for AMR diagnosis, treatment and control. ▪ The THCS partnership will facilitate the uptake of effective and efficient AMR solutions. It will provide context-specific evidence on scalability and transfer of innovations delivered by the One Health/AMR partnership.	The detailed proposal will be developed at a later stage (WP 2023/4)
	ERA Health	▪ The ERA Health partnership will support joint calls for proposals in priority areas identified by partners. One of the specific objectives of the ERA Health is focused on new, better and more cost-effective health services, technologies, tools and digital solutions. ▪ The THCS partnership will contribute to informing joint calls launched by the ERA Health, based on priority needs of health and care systems across Europe. It will also facilitate the uptake of cost-effective innovative services, tools and solutions, including by providing context-specific knowledge and evidence on their scalability and transfer.	No
Digital, Industry and Space	Key Digital Technologies (KDT)	▪ The KDT partnership will align and coordinate EU efforts aimed at developing new digital technologies to address key	No

		challenges faced by various sectors, including health and care systems. ▪ The THCS partnership will facilitate the uptake of efficient innovative digital solutions, will research the conditions for embedding these solutions into innovative health and care services and systems, and provide knowledge and evidence on their scalability and transfer.	
	AI, Data and Robotics (AIDR)	▪ The AIDR partnership will contribute to development of innovative solutions for various sectors, including health and care systems. ▪ The THCS partnership will facilitate the uptake of efficient AIDR solutions and will provide context-specific evidence on their scalability and transfer.	No
Other Pillars	EIT Health	▪ Collaboration on knowledge transfer and capacity building in R&I in health and care systems. ▪ Activities related to integrated/multi stakeholder care models can be a key driver of their cooperation with EIT Health	n/a
	▪ EU-Africa Global Health ▪ Chemical Risk Assessment (PARC) ▪ Smart Networks and Services ▪ Photonics Europe ▪ Metrology ▪ European Open Science Cloud (EOSC)	▪ The THCS partnership will establish communication channels for mutual exchange of information with these partnerships. ▪ THCS and EOSC partnerships will collaborate to create and populate the EOSC platform with FAIR data allowing EU researchers to store, share and reuse research data.	

Notes for further development[5]:

Links with other Partnerships and EU programmes are overall well described. In some cases it would be good to spell out the opportunity/ purpose. The proposal mentions "*cross-cluster synergies with Digital and Industry on technologies, where possible in order to blend and maximise the different types of funding supports."*

Key issues to address:

- The proposal states that especially links to other partnerships in cluster 1 will be further developed as their agendas are established.
- Same should be done with other partnerships, for instance from cluster 4.

[5] Comments made by RTD/A4 to the previous version of THCS Coherence & Synergies

1.5.3 Synergies with other Programmes

Table 12 Overview of synergies identified in the xxx proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
EU4Health[6]	▪ Transfer, adaptation and roll-out of best practices and innovative solutions between Member States, and country-specific tailor made support to countries through the funding of specific projects including twinning, expert advice and peer support. ▪ Support knowledge transfer actions and EU level cooperation to assist national reform processes towards improved effectiveness, accessibility and resilience. ▪ Support to the digital transformation of health and care systems including development, deployment and uptake of innovative tools and technologies; benchmarking and capacity building; digital upskilling of health care professionals;	
ESF+	▪ Investing in education and training of health and care professionals to support implementation of innovative models and solutions in health and care systems.	
DEP	▪ To support large-scale deployment of EU digital infrastructures and capacities contributing to provision of effective, efficient and high quality health and care services along the continuum of care. Priority areas include secure and effective management of personal health data across borders; better data for research, disease prevention and personalised health and care; and use of digital tools for citizen empowerment and for person-centred care. ▪ To access high-end computing and simulation resources (such as AI Testing and Experimentation Facilities, High Performance Computing, Internet of Things platforms, cybersecurity	

[6] Subject to the final budget of EU4Health

	technologies & certification schemes). ▪ To support the deployment of infrastructures needed to make health data securely accessible across EU borders and improve interoperability to link health data at European and national level. ▪ To supports industry, SME's, and public administration in their digital transformation with a network of European Digital Innovation Hubs	
ERDF	▪ To support deployment of innovations aimed at strengthening health and care systems in the regions. It might include investments in health and care infrastructure, procurement of health goods, building capacities, supporting regional networks, etc. necessary for scaling-up and transfer of innovative health and care policies, services and systems.	
InvestEU	▪ To facilitate investments in development and deployment of health service innovations and new care models, in particular in areas with higher EU added value policy areas. It is also one of the instruments supporting investment in new products/processes with high industrial risk developed by SMEs, start-ups, companies with limited/no track record.	
Resilience and Recovery Facility (RRF) and Technical Support Instrument (TSI)	▪ Financing (RRF) and Technical assistance (TSI) to support the design and implementation of reforms and transformation of health and care systems, in relation to challenges identified in the European Semester.	
Other initiatives in Horizon Europe		
EIC, ERC, etc.	▪ Not specified	

Notes for further development[7]:

The proposal states that the partnership will search for synergies with other Union programmes. It mentions important programmes but does not spell out the opportunity/ purpose. This should be further elaborated.

[7] Comments made by RTD/A4 to the previous version of THCS Coherence & Synergies

1.6 European Partnership for Personalised Medicine

1.6.1 Summary

The overall aim of the partnership is to ensure effective roll out of personalised medicine approaches in Europe. This will be done by aligning priority setting and funding for research projects in the area of personalised medicine between the EU Member States and regions, associated countries and international partner countries.

1.6.2 Coherence and coordination among partnerships

Table 13 Overview of Partnerships identified in xxx proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health			
Digital, Industry and Space			
Climate, energy and mobility			
Food, Bioeconomy, Natural Resources, Agriculture and Environment			
Other Pillars			

Notes for further development:

Key issues to address:

- Please identify among the 49 partnerships candidates those that are most relevant for a collaboration and describe briefly which areas are relevant for a collaboration.
- Relevant might be Innovative Health and Health and Care Systems Transformation.
- To **elaborate further** the **focus and form of collaboration**, including to **prioritise** those that are essential for the achievement of objectives.

1.6.3 Synergies with other Programmes

Table 14 Overview of synergies identified in the xxx proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
	▪	
	▪	
	▪	
Other initiatives in Horizon Europe		
▪	▪	

Notes for further development:

- Synergies with other EU/national programmes are not reflected, please elaborate which are relevant, or explain why not.
- ERDF might be relevant.

1.7 European Partnership on Rare Diseases

1.7.1 Summary

Please include 500-space summary. No proposal at this stage (WP 2023/4).

1.7.2 Coherence and coordination among partnerships

Table 15 Overview of Partnerships identified in xxx proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health			
Digital, Industry and Space			
Climate, energy and mobility			
Food, Bioeconomy, Natural Resources, Agriculture and Environment			
Other Pillars			

1.7.3 Synergies with other Programmes

Table 16 Overview of synergies identified in the xxx proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
	▪	
	▪	
	▪	
Other initiatives in Horizon Europe		
▪	▪	

1.8 European Partnership on One Health / Antimicrobial Resistance (AMR)

1.8.1 Summary

Please include 500-space summary. No proposal at this stage (WP 2023/4).

1.8.2 Coherence and coordination among partnerships

Table 17 Overview of Partnerships identified in xxx proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health			
Digital, Industry and Space			
Climate, energy and mobility			
Food, Bioeconomy, Natural Resources, Agriculture and Environment			
Other Pillars			

1.8.3 Synergies with other Programmes

Table 18 Overview of synergies identified in the xxx proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
	▪	
	▪	
	▪	
Other initiatives in Horizon Europe		
▪	▪	

2 Digital, Industry and Space – Cluster 4

Table 19 Cluster 4 - Coherence with other partnerships

- Both mentioned
- Only left column Partnership indicates coherence
- Suggested by COM services
- x Priority
- o Inform

Cluster 1

Cluster 4	EU-Africa Global Health	Innovative Health	Chemical Risk Assessment	ERA Health	Health and Care Systems Transformation	Personalised Medicine	Rare Diseases	One Health / AMR
HPC		x						
KDT		x					o	
SNS	o	o		o	o	o	o	o
AI, data and robotics	o	x		o	x	o	x	o
Photonics Europe	o	x		o	o	o	o	o
Clean Steel								
Metrology	o	o	o	o	o	o	o	o
Made in Europe		o						
P4P			o					
Space								

Cluster 4

Cluster 4	HPC	Key Digital Technologies	Smart Networks and Services	AI, data and robotics	Photonics Europe	Clean Steel	Metrology	Made in Europe	P4P	Globally competitive Space Systems
HPC		x	x	x	o		o	x		
KDT	x		x	x	x		o	x	o	x
SNS	x	x		x	x		o		o	x
AI, data and robotics	x	x	x		x		o	x		x
Photonics Europe	o	x	x	x			o	x		x
Clean Steel							o	x	x	
Metrology	o	o	o	o	o	o		o	o	o
Made in Europe	x	x	x	x	x	x	o		x	o
P4P			o	x		x	o	x		
Space	x	x	x	x	x		o	x		

Cluster 5

Cluster 4	Transforming Europe's rail system	Integrated Air Traffic Management	Clean Aviation	Clean Hydrogen	Built4People	2ZERO	CCAM	Zero-emission waterborne transport	European industrial battery value chain	DUT	Clean Energy Transition
HPC											
KDT	x	x				x	x	o	x		
SNS	o	x				o	x	o		o	
AI, data and robotics	o	x				o	x	o			
Photonics Europe							o				
Clean Steel				x	o						x
Metrology	o	o	o	o	o	o	o	o	o	o	o
Made in Europe			x	o	o	x	o	o	x		
P4P			o	x	x	o		o	o		x
Space		x					o				

Cluster 6

Cluster 4	Agroecology living labs	Animal Health and Welfare	Agriculture of Data	Rescuing biodiversity to safeguard life on Earth	Blue Economy	Safe and Sustainable Food System	Circular bio-based Europe	Water4All
HPC			o					
KDT			o					
SNS	o							
AI, data and robotics			x					
Photonics Europe	x					x		
Clean Steel								
Metrology					o	o	o	o
Made in Europe							o	
P4P							x	x
Space			x		o			

Other Pillars

Cluster 4	Innovative SMEs	European Science Cloud	EIT Climate-KIC	EIT InnoEnergy	EIT Digital	EIT Health	EIT Food	EIT Manufacturing	EIT Raw Materials	EIT Urban Mobility	KIC Cultural and Creative Industries
HPC	o	x			x	o		o			
KDT	o	x			x			o	x		
SNS	o	o		x	x			o			
AI, data and robotics	o	x			x	o		X		o	
Photonics Europe	o	o						o			
Clean Steel	o	o	o					o	o		
Metrology	o	o						o			
Made in Europe	o	o	o		x			x	o		
P4P	o	o	x	o				x	x		
Space	o	o				o		o			

Table 20 Cluster 4 - Synergies with other Programmes

● Proposers indicated possible synergy
❍ Possible additional synergies

	Cluster 4									
	HPC	Key Digital Technologies	Smart Networks and Services	AI, data and robotics	Photonics Europe	Clean Steel	Metrology	Made in Europe	P4P	Globally competitive Space Systems
Other programmes and initatives										
Connecting Europe Facility (CEF)	●		●			❍		❍	❍	
Digital Europe Programme (DEP)	●	●	●	●	●			❍	❍	❍
InvestEU	●	●	●	●	●	❍		❍	●	●
Structural Funds (ERDF/Cohesion)	●	●	❍	●	●	❍	❍	❍	❍	❍
Important Project of Common European Interest (IPCEI)		❍				●		●	❍	
ETS Innovation Fund						●			❍	
Modernisation Fund								❍		
Just Transition Mechanism						●		❍	❍	
Recovery&Resilience Facility								❍	❍	
Green Deal Investment Plan								❍	❍	
European Investment Bank		●		●		❍		❍	❍	
Circular Bioeconomy Thematic Investment Programme								❍		
Programme for Environment & Climate Action (LIFE)						❍	❍			
Space Programme		❍					❍			●
GEOSS							❍			
European Innovation Council		●		●	●			●	❍	●
Erasmus Plus		❍						●	❍	
National Energy and Climate Change Plans						❍	❍		❍	
Research Fund for Coal and Steel						●				
Covenant of Mayors										
European Space Agency		❍								●
Standardisation Bodies		❍					●	❍	❍	
Next Generation EU - Recovery and Resilience Facility				❍						
Next Generation EU - Health Programme				❍						
HE Mission Areas										
Adaptation to Climate Change, including Societal Transformation					●	❍	❍		❍	
Climate-neutral and Smart Cities		●	❍		●	❍	❍	❍	❍	
Cancer					●		❍			
Healthy Oceans, Seas, Coastal and Inland Waters					●		❍			
Soil Health and Food					●		❍			

2.1 European Partnership for High Performance Computing (HPC)

2.1.1 Summary

Please include 500-space summary.

2.1.1 Coherence and coordination among partnerships

Table 21 Overview of Partnerships identified in xxx proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health			
Digital, Industry and Space			
Climate, energy and mobility			
Food, Bioeconomy, Natural Resources, Agriculture and Environment			
Other Pillars			

2.1.2 Synergies with other Programmes

Table 22 Overview of synergies identified in the xxx proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
	▪	
	▪	
	▪	
Other initiatives in Horizon Europe		
▪	▪	

2.2 European Partnership for Key Digital Technologies (KDT)

2.2.1 Summary

The overall objective of the partnership is to reinforce Europe's potential to innovate through contribution of electronic components and systems, including Micro-Electro-Mechanical Systems, software technologies, sub-assemblies, and systems of systems giving secure and trusted technologies to strategic value chains. It aligns R&I policies and achieves synergies among its participating states to reach the critical mass needed for achieving Europe's sovereignty through the tri-partite involvement of Member States, Associated countries, the EU and industry.

2.2.2 Coherence and coordination among partnerships

Table 23 Overview of Partnerships identified in the KDT proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health	Innovative Health	▪ Wearable electronics and bioelectronics	Yes
Digital, Industry and Space	Smart Networks and Services	▪ Developing underlying technologies (e.g. high-frequency, low-power, antennas) to ensure connectivity in all conditions ▪ Reach out to actions in telecommunications, encompassing 5G and 6G, Internet of Things (IoT), etc.	Yes
	High Performance Computing	▪ providing the requisite components Microcontroller units accelerators, co-processors for special maths, etc.) and embedded software for exascale computing	(proposal not received)
	Photonics Europe	▪ Photonic devices and sub-systems	Yes
	AI, Data and Robotics	▪ Underlying technologies for AI in fog, edge and mist computing	Yes (ECSEL JU mentioned)
	Made in Europe	▪	
	Globally Competitive Space Systems	▪	
Climate, energy and mobility	Cooperative, connected and automated mobility	▪ Components and systems for electric vehicles and automated driving	Yes
	Clean Aviation	▪ Highly reliable and energy efficient components	Yes (ECSEL JU mentioned)
	European industrial battery value chain	▪ E.g. for power electronics	Yes
Other Pillars	EIT Digital EIT Health EIT InnoEnergy EIT Manufacturing	▪ Contents and timing of calls could be better aligned ▪ Lighthouse Initiatives to connect ongoing projects	n/a

	EIT Urban Mobility		

Notes for further development:

The proposal states that reinforced cooperation with other R&I initiatives and partnerships to develop common/shared test beds is foreseen. It suggests that the KDT partnership could provide these other R&I initiatives and partnerships with fast-track and early access to advanced key digital technologies leading to faster market uptake.

Key issues to address:

- To **elaborate further** the **focus and form of collaboration**, including to **prioritise** those that are essential for the achievement of objectives.
- KDT is a cross-modal field that might be important for almost every partnership candidate. This should be considered when developing modes of collaboration (not just bilateral actions). It is also an enabler for future manufacturing and devices for space systems.
- Other Pillars should also be considered for collaboration. For instance, European Open Science Cloud might be relevant additional to the mentioned KICs.
- The proposal should describe in more detail the foreseen collaborations and what will be different from past interventions.

2.2.3 Synergies with other Programmes

Table 24 Overview of synergies identified in the KDT proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Digital Europe Programme (DEP);	▪ Deployment of novel digital technologies and solutions through DEP	▪ Sequential funding
European Structural and Investment Funds (ESIF)	▪ Not specified.	▪ Not specified.
EIC, EIB, InvestEU	▪ Ease access to venture capital as well as debt and equity financing	▪ Executive Director of the KDT partnership should explore possibilities for collaboration
Other initiatives in Horizon Europe		
EUREKA	▪ Improve synergy between the EUREKA clusters in the KDT domain (in particular EURIPIDES, ITEA and PENTA)	

Notes for further development:

- While the obvious synergies opportunities are mapped in the proposal, the purpose and exact mechanisms (in terms of activities, governance etc.) need to be further elaborated. Further synergies with Copernicus and interaction with standardisation bodies would also be relevant.
- The proposal does not mention synergies with certain national programmes or strategies. It generally states that "with national authorities of most or ideally all Member States and probably some Associated Countries sitting on the Governing Board and co-funding the projects of the KDT partnership, coherence and synergies in relation to major national (sectorial) policies, programmes and activities will be ensured." KDT has the national funding programmes as partners/contributors, so the question is foremost to how the remaining national investments that are not put into KDT are influenced/coordinated.

2.3 European Partnership for Smart Networks and Services (SNS)

2.3.1 Summary

The vision is to design and deploy a scalable, robust, secured, distributed, high-performance, energy-efficient and environment-neutral ubiquitous digital infrastructure. This is essential to enable and promote the Next Generation Internet (NGI) and future digital services. Apart for core telecommunication R&I activities, the proposed Programme defines clearly a communication and collaboration framework with Programmes and/or Associations that will be active in the areas Artificial Intelligence and Machine Learning, Data Analytics, High Performance Computing, Security etc., including also business layer enablers. These areas are essential enablers for future networks. Moreover, the Programme is capturing the activities needed to efficiently support Internet of Things (IoT) to provide complete end-to-end solutions.

2.3.2 Coherence and coordination among partnerships

Table 25 Overview of Partnerships identified in the SNS proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Digital, Industry and Space	KDT	▪ Components (micro-electronic components) and devices mainly for IoT and vertical sector applications are essential elements of future secure and trusted networks	▪ Yes ▪
	Photonics Europe		▪ No
	AI, Data and Robotics	▪ Apply appropriate AI algorithms in Smart Networks and Services as well as to provide high-performant and secure networks for AI applications in other areas	▪ Yes
	High Performance Computing	▪ Provide the high-performant and secure networks for the required interconnection to enable HPC applications	▪ (proposal not received)
	Made in Europe	▪	▪
	Globally Competitive Space Systems	▪	▪
Climate, energy and mobility	Transforming Europe`s rail system	▪	▪ Yes (5G cPPP mentioned)
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Climate neutral sustainable and productive Blue Economy	▪ Ocean / sea internet (high bandwidth internet)	▪ No

Notes for further development:

The proposal mentions many other partnership candidates but does not specify on which aspects, and which form of collaboration should be established to ensure coherence. It simply states that the *"SNS Partnership also targets specific information sharing and potential specific dedicated actions with some of the Partnerships with Verticals ecosystem focus (e.g., 2ZERO, Connected and Automated Driving, Integrated Air Traffic Management, Accelerating Farming System Transition, etc.) and some of the Partnerships with Societal Challenge focus (e.g., Carbon Neutral and Circular Industry, etc.). Specific Memoranda of Understanding (MoUs) will be developed with different Partnerships and include (among others) the organisation of joint workshops as discussed in the roadmap."*

Key issues to address:

- To **elaborate further** the **focus and form of collaboration**, including to **prioritise** those that are essential for the achievement of objectives.
- Since CEF seems to be the main channel of deployment more discussion on coherence with transport partnerships is needed.
- Coherence with KICs is not elaborated so far. Especially EIT Digital should be added.
- SNS is a cross-cutting field. The proposal should discuss in this context how coherence with other partnerships can consider this.
- For instance, enabler for Industry 4.0 and Industrial Internet of Things could be discussed in cluster 4.
- In cluster 5 also DUT – especially as it mentions Mission smart cities below – should also be of relevance.

2.3.3 Synergies with other Programmes

Table 26 Overview of synergies identified in the SNS proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Connecting Europe Facility	▪ Deployment of 5G ▪ Support of physical infrastructure by applying new technologies	▪ Very detailed description in the proposal
Digital Europe Programme	▪ Cybersecurity research and innovation actions will be implemented in the Digital Europe Programme and a priori in the context of the forthcoming European Cybersecurity Competence Centre (ECC). ▪ Cooperation with cybersecurity initiatives is essential for SNS to achieve the necessary security level as well as a major application domain for cybersecurity mechanisms for the support of many other vertical use cases	
Other initiatives in Horizon Europe		
Mission "Climate Neutral and Smart Cities"	▪ Bringing specific ICT enablers and solutions to contribute to the reduction of CO2 emissions and improve the overall efficiency in many verticals sectors (e.g. transportation, energy …) including in the context of Smart (and smarter) Cities.	

Notes for further development:

- While the obvious synergies opportunities are mapped in the proposal, the purpose and exact mechanisms (in terms of activities, governance etc.) should be further elaborated.
- Synergies with national or regional programmes are not described.
- Possible additional synergies with Standardisation Bodies could be explored.

- The proposal includes a very broad discussion of collaboration with CEF. It is unclear what will be its ‘share’ compared to HE? Clarifying that allows to better scope the partnership candidate.
- Synergies with Cohesion Funds should be discussed.

2.4 European Partnership on Artificial Intelligence (AI), Data and Robotics

2.4.1 Summary

In order to deliver the greatest economic benefit to Europe from AI, data and robotics this Partnership will drive innovation, uptake and acceptance by building on the opportunities these technologies offer. It will support deployment, foster new markets and novel applications and stimulate public and private investment, to create economic, technical and societal value for business, citizens and the environment. Most importantly it will build bridges between stakeholders that enable a human centric and trustworthy European vision of AI to flourish. In doing so it will establish a focal point for European AI, Data and Robotics.

2.4.2 Coherence and coordination among partnerships

Table 27 Overview of Partnerships identified in the AI, Data and Robotics proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Digital, Industry and Space	Smart Networks and Services	▪ Smart communications will be required to provide high speed and low latency networks to be delivered by 5G infrastructure, ▪ AI will be a key enabler for cost-effective communication networks.	Yes
	Key Digital Technologies	▪ The combination of NanoElectronics, Smart Systems Integration and Embedded Intelligence together with AI, Data and Robotics is central to ▪ continued digitalisation that will help industries to maintain their competitive edge. In addition, AI, Data and Robotics applications have a need for the dedicated hardware and embedded systems that these associations map to.	Yes
	High Performance Computing	▪ (HPC) capabilities are needed by specific AI, Data and in some cases Robotics applications (e.g. healthcare) where faster decision-making is crucial and extremely complex data sets are involved, while AI capabilities improve the development and deployment of HPC solutions	(proposal not received)
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Climate neutral, sustainable and productive Blue Economy	Underwater robotics, marine data and modelling	No
Other Pillars	EIT Digital EIT Health	▪ Not specified.	n/a

Notes for further development:

The proposal discusses that AI, Data and Robotics is a cross-cutting partnership with links to almost all the partnership fields. It indicates that many of the other partnerships will rely on AI, Data and Robotics as a critical enabler to their own endeavours.

The proposal states that in manufacturing, health, energy, food and mobility there are very strong cross links to this Partnership although these are not the only sectors where AI, Data and Robotics has impact.

Links with other partnership candidates are presented and include potential technical fields of collaboration. Structured collaboration with other partnerships is especially important for the proposed partnership, as the field of AI, Data and Robotics is highly applicable in several fields.

Key issues to address:

- The proposal should describe in more detail the foreseen collaborations and what will be different from past interventions?
- Surely also lots of applications in industry and space as well as relevance for some parts of clusters 1,5 and 6 should be discussed.
- Other Pillars should also be considered for collaboration. For instance, European Open Science Cloud might be relevant additional to the mentioned KICs.

2.4.3 Synergies with other Programmes

Table 28 Overview of synergies identified in the AI, Data and Robotics proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
European Investment Bank	▪ providing connections to finance	
European Structural and Investment Funds	▪ providing connections to finance	
DEP	▪ Here the Partnership can make a direct impact through its actions and stakeholders to work to achieve the goals of the Digital Europe Programme.	▪ Setting the orientation of the DEP, ▪ Disseminate outcomes and showcase success from the DEP.
JRC	▪ Not specified.	
EIC	▪ Not specified.	
Other initiatives in Horizon Europe		

Notes for further development:

- Structured collaboration with other Union programmes is especially important for the proposed partnership, as the field of AI, Data and Robotics is highly applicable in several fields. Synergies with CF and ERDF should be discussed.
- The proposal should describe in more detail the foreseen collaborations and what will be different from past interventions? A less generic description of synergies would be helpful.

- The proposal shortly describes the foreseen collaboration with Member States. Further details of the collaboration and its governance model should be described. No synergies with national or regional programmes are mentioned.

2.5 European Partnerships for Photonics

2.5.1 Summary

Photonics is an essential technology building block for the digital transformation of Europe. As a key enabler for Europe's ambitions in Industry 4.0, smart farming, 5G, AI and many other applications, light technologies are critical for the strategic value chains end user sectors in health, food, manufacturing, mobility, digital infrastructure and safety, security and defence. The goal of the new Photonic Partnership is to push the digitization of entire industries in Europe based on strong core technology development, towards greater efficiency and wider societal benefits.

2.5.2 Coherence and coordination among partnerships

Table 29 Overview of Partnerships identified in the Photonics proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposa
Health	Innovative Health	▪ Photonic sensor systems and image processing ▪ Low latency photonic components for AR/VR devices (e.g. assistance to the surgeon ▪ Integrated/embedded micro- and nanophotonic systems (e.g. minimally invasive diagnosis) ▪ Advanced (hyperspectral) sensors and microscopes for the life science	No
Digital, Industry and Space	High Performance Computing	▪ Photonic integrated circuits (PICs) ▪ Optical data transport and processing	
	Key Digital Technologies	▪ Integrated/embedded micro- and nanophotonic devices and systems ▪ Photonic integrated circuits (PICs) ▪	Yes
	Smart Networks and Services	▪ Optical data transport and processing ▪ Networked photonic sensor systems ▪ Integrated/embedded micro- and nanophotonic systems	No
	AI, Data and Robotics	▪ Photonic sensor systems and image processing, e.g. low latency and high reliability recognition for robots/autonomous systems ▪ Smart camera platforms with embedded image processing	No
	Metrology	▪ Photonic sensor systems	No
	Made in Europe	▪ Photonic sensor systems and image processing, e.g. low	

		latency control or autonomous inspection ▪ Laser material processing, subtractive as well as additive ▪ Low latency photonic componentes for AR/VR devices ▪ Integrated/embedded micro- and nanophotonic systems ▪	
	Carbon Neutral and Circular Industry	▪ (Networked) Photonic sensor systems, e.g. low latency control, autonomous inspection or distributed condition monitoring) ▪ Low latency photonic components for AR/VR devices (e.g. assistance systems for maintenance engineers) ▪ Integrated/embedded micro- and nanophotonic systems	
	Global competitive space systems	▪ Photonic sensor systems and image processing, e.g. low latency and high reliability recognition for autonomous space stations ▪ Laser material processing of advanced materials, subtractive as well as additive manufacturing of complex structures ▪ Integrated/embedded micro- and nanophotonic systems ▪ Cosmic radiation proof photonic integrated circuits (PICs) ▪ Optical data transport and processing	
Climate, energy and mobility	Transforming Europe`s rail system	▪ Real time and latency ▪ Free Space optical solutions	No
	ATM		No
	Clean Aviation		No
	Clean Hydrogen	▪ By material treatment, weight reduction/material savings/waste reduction	No
	2ZERO	▪ Real time and latency, Adaptive Driving Beam for mainstream vehicles, Sensing capabilities, etc.	No
	Cooperative, connected and automated mobility		No
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Circular bio-based Europe	▪ Not specified	No

Notes for further development:

The proposal mentions partnership areas for collaboration, which are assigned to partnership candidates in *Table 29*. The proposal considers that Photonics is cross-cutting to the other partnerships since it is working on a key enabling technology. Details on the relation of

Photonics to the other partnerships concerning the cross-cutting aspect are not developed so far. There are only two other partnerships that mention Photonics: KDT and Made in Europe.

2.5.3 Synergies with other Programmes

Table 30 Overview of synergies identified in the Photonics proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
DEP	▪ Creation of Digital Innovation Hubs, network and promotion of Digital Photonics Skills Measures	
ERDF	▪ Establishment of new Digital Innovation Hub nodes in Photonics	
Other initiatives in Horizon Europe		
EIC	▪ Promotion of Photonics Start ups and closer to the market activities	
Mission Areas		
▪ Adapting to climate change, including societal transformation	▪ Metrology, contribution to lower material use, higher yield, less waste, lower energy usage for production	
▪ Cancer	▪ Photonics Screening and guiding, 3-D imaging methods	
▪ Healthy oceans, seas, coastal and inland waters	▪ Metrology, Sensors and Photonics Components, Photonocs in Agriculture	
▪ Climate-neutral and smart cities	▪ Low Power devices – sensors, LED, organic PV, Urban Farming (Light), Energy Savings by LEDs	
▪ Soil health and food	▪ Via Metrology/ Sensors, Photonics in Agriculture, Photonics on a chip, etc.	

Notes for further development:

Synergies with other programmes like DEP and ERDF are mapped but should be further elaborated. The proposal additionally suggests collaborating with Member States via joint calls through ERA-NET Cofound actions that do not exist any longer under Horizon Europe. The proposal states that the partnership plans to map current research programmes to ensure that they are of optimal benefit to each other and that duplication is avoided. Synergies with missions are well mapped in the proposal.

Synergies with Cohesion funds and Member States programmes should be elaborated.

2.6 European Partnership for Clean Steel – Low Carbon Steelmaking

2.6.1 Summary

The European Partnership on clean steel will develop and test at large scale on higher TRL levels (TRL 6-8[8]) the steelmaking technologies in the period 2020-2030 required to achieve a climate neutral EU steel industry by 2050. This shall be pursued by inter-alia taking into account a materials efficient and circular economy with high levels of sector coupling and maintaining competitive primary and secondary steel production in the EU that fulfil the high, diverse and evolving quality standards of existing and new industries in the value chain of the steel industry.

2.6.2 Coherence and coordination among partnerships

Table 31 Overview of Partnerships identified in the Clean Steel – Low Carbon Steelmaking proposal

Partnership candidate and cluster	Collaboration opportunities
Upstream	
Clean Hydrogen (cluster 5)	The proposed partnership "**Clean Hydrogen**" sets the objectives to accelerate the market entry of nearly-zero GHG-emission hydrogen-based technologies across energy, transport and industrial end-users. Hydrogen is one of the most effective solutions to substitute carbon-based energy resources in steelmaking, particularly if the hydrogen is produced from renewable energy sources.[9] Clean Steel has been keeping communication open with the Clean Hydrogen and established formal mechanisms of consultation to prepare the relevant Work Programmes in order to maximise synergies. The two partnerships have agreed on the area of cooperation, according to which (i) hydrogen technological development dealing with clean hydrogen production, distribution and storage will be within the scope of Clean Hydrogen, (ii) development of a new steel production plant or process will be within the scope of Clean Steel, and (iii) the integration of the production, distribution and storage of hydrogen in the steel making process is an area for cooperation between the two partnerships. Clean Steel will be given the opportunity to review the list of topics and projects envisaged by Clean Hydrogen, and the other way around. In addition, the two partnerships committed to exchange information on events and calls, share success stories and ensure harmonious allocation of projects. A Joint Declaration of collaboration between the two partnerships was signed in May 2020.
Clean Energy Transition (cluster 5)	The Clean Steel Partnership also sees potential synergies with the proposed Partnership "**Clean Energy Transition**" insofar as it will help develop new technologies for renewable energy and decarbonise the EU energy sector. In fact, renewable energy is a key input to sustain the decarbonisation of the EU steel sector. In line with what proposed above, to foster synergies, Clean Steel may introduce formal consultation mechanisms with the Clean Energy Transition Partnership, limited to specific parts of the respective Work Programmes.
Midstream	

[8] Starting TRL 5 may be accepted of the project achieves progress of at least TRL 7.

[9] For further details, please see: fch.europa.eu/sites/default/files/FCH%202%20JE%20Annual%20Work%20Plan%20and%20Budget%202019%20%28ID%205167414%29.pdf, p.36

Processes4Planet – Transforming the European Process Industry for a sustainable society (cluster 4)	The proposed Partnership "**Process4Planet**" aims to transform European process industries to (i) make them carbon neutral by 2050, (ii) turn them into circular industries together with material and recycling industries, and (iii) enhance their technological leadership at global level and international competitiveness. The Clean Steel Partnership and Processes4Planet have been working closely to align R&D&I objectives and plans. Shared areas of collaboration between the two Partnerships include, *inter alia*, carbon capture, circular business models and practices. This collaboration has been materialised into a Joint Declaration signed in September 2019 and regular dialogues between the two Partnerships since then. Accordingly, the two Partnerships have agreed that any technological development or innovation aiming at avoiding CO_2 emissions that is specific to the steel production or the steel value chain will be within the scope of Clean Steel Partnership. Meanwhile, technological developments or innovations that would be of cross-sectorial interest will be pursued under Processes4Planet. Formal mechanisms of consultation will be established to prepare the relevant Work Programmes and ascertain that synergies are maximised, while avoiding overlaps. As proposed above, the Clean Steel Partnership may be given the opportunity to review the Roadmap and Work Programmes of Processes4Planet, and the other way around. In addition, a coordination workshop will be arranged on a yearly basis to present and discuss completed, ongoing and planned activities of the two Partnerships.
Downstream	
People-centric sustainable built environment (Built4People) (cluster 5)	The proposed partnership "**Built4People**" focuses on technology and socio-economic breakthroughs for an improved built environment to support the achievement of EU 2050 decarbonisation goals and the transition to clean energy and circular economy, while improving social wellbeing, mobility and competitiveness. Construction is the biggest steel-using industries, accounting for about 35% of steel demand in Europe in 2018.[10] Meanwhile, buildings currently account for 39% of the global energy-related carbon emissions, including 11% from materials and construction.[11] Therefore, a collaboration between the Clean Steel and Built4People Partnerships would contribute to lowering the environmental impacts of the construction sector by relying on clean steel inputs and, in turn, to establish a market for clean steel. In this respect, while there is no risk of overlaps between the two Partnerships, some mechanisms of consultation may be established to prepare relevant Work Programmes and maximise synergies. For instance, the Clean Steel Partnership may be asked to review specific parts of the Built4People Work Programmes and Roadmap, which may be affected by the quality, quantity and carbon content of steel available in the EU.
Made in Europe (cluster 4)	There are strong linkages between Clean Steel and the "**Made in Europe**" Partnerships. "Made in Europe" sets objectives to achieve a competitive discrete manufacturing industry with a world-leading reduction of the environmental footprint whilst guaranteeing the highest level of well-being for workers, consumers and society. The achievements of CO_2 reduction and circularity in the steel industry will have a multiplier effect down the manufacturing chain. Therefore, dialogue and collaboration with

[10] For further details, please see: oecd.org/sti/ind/45145459.pdf; p.2
[11] For further details, please see: Eurofer (2019), 2019 European Steel in Figures, p.25

	the "Made in Europe" partnership can maximize the value creation for society and respond to the customers demand for customized products with a lower impact on the environment. Formal mechanisms of consultation may also be established with this Partnership.

2.6.3 Synergies with other Programmes

Table 32 Overview of synergies identified in the Clean Steel – Low Carbon Steelmaking proposal

Programme	Purpose
Innovation Fund	▪ Alignment in projects to be advanced to higher TRLs from demonstration to first deployments. ▪ Follow up and validation of pipeline in the Clean Steel partnership to steer projects to deployment of technologies at industrial scale.
Important projects of Common European Interest	▪ IPCEI on Low CO2 Technologies ▪ Potential IPCEI on Clean steel
Just Transition Mechanism	▪ Identification of projects in supported regions for blending finance
Research Fund for Coal and Steel	▪ Use of ECSC assets to complement annual RFCS calls. ▪ Shared governance with HE partnership. Complementary funds and calls. ▪ Partnership focused on large demonstrators and breakthrough technologies.
LIFE Programme	▪ ▪ Calls in the areas of resource-efficient, low carbon and climate resilient economy.
European Regional Development Fund - ERDF (under the European Structural and Investment Funds - ESIF).	▪ R&I and the low carbon economy are among the four priority areas of investment of the fund.
InnovFin	▪ InnovFin financing tools cover a wide range of loans, guarantees and equity-type funding.
InvestEU Fund under Invest EU Programme	▪ The Fund mobilises public and private investment using an EU budget guarantee. Among its four main policy areas, the Fund will support sustainable infrastructure, research, innovation and digitisation.

2.7 European Partnership on Metrology

2.7.1 Summary

Accelerating Europe's global lead in metrology research, and creating European networks for emerging metrology areas, which will contribute to Europe's wider competitiveness, and incorporating a wide range of new stakeholders.

2.7.2 Coherence and coordination among partnerships

Table 33 Overview of Partnerships identified in the Metrology proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health			
Digital, Industry and Space			
Climate, energy and mobility			
Food, Bioeconomy, Natural Resources, Agriculture and Environment			
Other Pillars			

Notes for further development:

Metrology is a truly cross-sectorial activity. The Partnership will deliver metrology solutions for industry, innovation, trade, societal challenges (i.e. a selection of the UN SDGs), and will support development of regulations and written standards.

Links with other partnership candidates are not explicitly mentioned.

Key issues to address:

- Given the overarching application possibilities of metrology, priority links with partnerships in Cluster 1, 4, 5 and 6 should be identified.
- Especially, SNS might be relevant for international regulation and harmonised metrology.
- This could be aligned with the description of coherence of Joint Research Projects within Pillar 2 under HE (p. 23 in proposal).
- To **elaborate further** the **focus and form of collaboration**, including to **prioritise** those that are essential for the achievement of objectives.

2.7.3 Synergies with other Programmes

Table 34 Overview of synergies identified in the Metrology proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Other initiatives in Horizon Europe		

Pillar II Clusters	▪ Euramet expects the funded Joint Research Projects to be mostly aligned with Pillar 2 of Horizon Europe – "Global challenges and European Industrial Competitiveness"	

Notes for further development:

- Some Synergies are described, with a focus on interaction with standardisation bodies and Liaison organisations with overlapping aims.
- The proposal mentions collaboration with the European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC) and EURAMET`s Liaison Organisations.

2.8 European Partnership Made in Europe

2.8.1 Summary

The Made in Europe Partnership will address the entire manufacturing value-chain in Europe. It will concentrate on spreading manufacturing excellence and more sustainable production methods among companies, aiming at achieving a truly circular and zero-environmental impact manufacturing in Europe. The objective of the partnership is to defend Europe's technology leadership in the world and to guarantee the competitiveness of Europe`s manufacturing industry as well as the well-being of employees, consumers and society. The Made in Europe Partnership will help embracing the opportunities which new technologies and new business models are offering and it will defend Europe`s number 1 position in providing environmental technologies that enable zero-environmental impact production.

2.8.2 Coherence and coordination among partnerships

Table 35 Overview of Partnerships identified in the Made in Europe proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Digital, Industry and Space	Key Digital Technologies	▪ Provider: industrial process technologies for new materials; ▪ User: new materials (lightweight, recyclable, secondary materials) ▪ Continuous dialogue on priorities and results, demonstrators and pilot lines	No
	AI, Data and Robotics	▪ User: AI in Manufacturing; ▪ Part of the community: Industrial Robots and AI are manufacturing topics ▪ Integrator of AI-technologies in machines and processes ▪ Strategic dialogue	Yes
	Globally competitive Space Systems	▪ Provider of high-performance manufacturing solutions ▪ Dialogue on priorities, potentially validation/piloting activities	No
	Carbon Neutral and Circular Industry	▪ Complementing CE beyond materials streams ▪ User: of recycled materials, or recycling services ▪ Strategic coordination / sharing of activities	Yes
	Clean Steel – Low Carbon Steelmaking	▪ User of products of energie-intensive industries (e.g. steel) ▪ Continuous dialogue	No
Climate, energy and mobility	European industrial battery value chain	▪ Provider of scalable manufacturing technologies	Yes

		▪ Dialogue on priorities, pilot lines & demonstrators	
	2ZERO	▪ Provider of scalable manufacturing technologies ▪ Dialogue on priorities, pilot lines & demonstrators	Yes,
	Zero-emission waterborne transport		No
	Clean Aviation, etc.		No

Notes for further development:

Links with other partnership candidates are presented in an overview image. A table (p. 20) presents intervention areas that are oriented to the partnership candidates.

Key issues to address:

- The proposal should describe in more detail the foreseen collaborations and what will be different from past interventions?
- The proposal should specify the intervention areas and assign them to specific partnerships.
- To **elaborate further** the **focus and form of collaboration**, including to **prioritise** those that are essential for the achievement of objectives.

2.8.3 Synergies with other Programmes

Table 36 Overview of synergies identified in the Made in Europe proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
ERASMUS Plus		
Other initiatives in Horizon Europe		
Eureka (especially the Eureka SMART cluster)		
EIC, ERC		
any IPCEI that might emerge if it has a link to manufacturing		

Notes for further development:

- Coherence and synergies with major national policies are not described so far.
- Coherence with other EU programmes should be described in more detail.
- Coherence with InvestEU and DEP should be included in the proposal.

2.9 European Partnership for Climate- Neutral and Circular Industry

2.9.1 Summary

Transforming European process industries, including materials and recycling sectors, to make them circular, clean and climate neutral by 2050, and to enhance their technological leadership at global level and international competitiveness.

2.9.2 Coherence and coordination among partnerships

Table 37 Overview of Partnerships identified in the Carbon Neutral and Circular Industry proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposa
Digital, Industry and Space	AI, Data & Robotics	▪ Digital Partnerships (AI, data and robotics, High-performance computing and Key Digital Technologies) will be key to accelerate the progress of P4Planet innovations. ▪ The recently released European Commission White Paper on Artificial Intelligence12, for example, underlines the need to create testing and experimentation sites to support the development and subsequent deployment of novel AI applications. AI, cybersecurity and smart data are areas of particular relevance for future collaboration.	
	High Performance Computing		
	Key Digital Technologies		
	Clean Steel	▪ In the case of Clean Steel, A.SPIRE, EUROFER and ESTEP jointly recommend that any technological development or innovation aiming at avoiding CO2 emissions that is specific to the Steel production or the steel Value chain, be within the scope of CS-LCS, while those technological developments or innovations that would be of cross-sectorial interest be pursued under SPIRE-CCNI.	Yes (mentioned as successors of cPPP SPIRE)
	Made in Europe	▪ All the achievements on CO2 reduction and circularity by the Process Industries will have a multiplier effect down the value chain and impact downstream products.	No

[12] COM(2020) 65 final, EU Commission White Paper on Artificial Intelligence - A European approach to excellence and trust

		▪ Concerns customers and final users of materials produced by process industries. A strong alignment of R&I efforts will be required to move towards closed material loops (over a maximised number of lifecycles). Link from materials-to-products-to-recoverable waste.	
Climate, energy and mobility	Clean Hydrogen	▪ Key enabler for process industries to store/use energy and climate-neutral feedstock in several sectors. ▪ CCNI will focus on integrated production of hydrogen developed by the process industry for its own use. Clean Hydrogen will focus on electrolytic production of green hydrogen. ▪ Important to keep awareness of the developments upstream (e.g. renewable energy) to ensure our portfolio of innovations can be fuelled in time through Renewable Energy and the appropriate resources. ▪ Alignments aim also to shorten the value chain and ensure the whole value chain remains in Europe.	Yes
	Clean Energy Transition	▪ Connection possible via SET PLAN IWG 6 to identify right alignments along value chain and ensure good flow of renewable energy into the processes through optimal energy efficiency.	Yes
	Built4People	▪ All the achievements on CO2 reduction and circularity by the Process Industries will have a multiplier effect down the value chain and impact downstream products.	Yes
	2ZERO	▪ Concerns customers and final users of materials produced by process industries. A strong alignment of R&I efforts will be required to move towards closed material loops (over a maximized number of life cycles). Link from materials-to-products-to-recoverable waste.	
	European industrial battery value chain	▪ A strong alignment of R&I efforts will be required to move towards closed material loops (over a maximized number of life	

		cycles). Link from materials-to-products-to-recoverable waste	
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Water4All	▪ Positive and fluent dialogue already takes place with these initiatives to ensure good complementarities, avoidance of overlaps and generation of synergies to maximise impacts across projects and initiatives. The water sector is one of A.SPIRE founding members and as a general point of agreement, the R&I aiming at improving the use of water in the process industries and the connection with industrial-urban symbiosis (incl. link with digitalisation) would be in priority handled by the CCNI, while those developments related to other industries would by default be handled by , as well as innovation related to urban water	Yes
			Yes
	Circular bio-based Europe	▪ All the achievements on CO2 reduction and circularity by the process industries will have a multiplier effect down the value chain and impact downstream products.	Yes
	Climate neutral, sustainable and productive Blue Economy	▪ Energy supply from offshore sources and fish processing industry	No
Other Pillars	EIT Raw Materials	▪ A. SPIRE Working Group incl. EIT Raw Materials has ensured a good identification of the areas for active collaboration and alignment: ○ innovative mining technologies, research and education to sustain access to raw materials, ○ material processing technologies (both for primary and secondary resources), ○ potential bottlenecks in raw materials supply, both for the production of current key technologies as well as the breakthrough of emerging ones (the shift towards renewable energies, e-mobility and Industry 4.0 are examples of extensive innovation processes that trigger the need for new kinds of advanced materials and raise new	n/a

		concerns about the availability of critical raw materials). ○ improvement of both the amount and quality of raw materials recovered from secondary sources (end-of-life products, industrial residues, tailings, urban and landfill mining). ○ Design of products and services for the circular economy. ▪ Important to keep awareness of the developments upstream (e.g. renewable energy) to ensure our portfolio of innovations can be fuelled in time through Renewable Energy and the appropriate resources. ▪ Alignments aim also to shorten the value chain and ensure the whole value chain remains in Europe.	
	EIT Climate-KIC	▪ Link to territorial developments/local climate-neutrality initiatives is key. Alignments necessary for geographical proximity approach and CO2 equivalent emissions reducing initiatives. Special focus on their sustainable production systems and urban transitions and on skills. ▪ Transformation Hubs	n/a
	EIT Manufacturing	▪ Concerns customers and final users of materials produced by process industries. A strong alignment of R&I efforts will be required to move towards closed material loops (over a maximized number of life cycles). Link from materials-to-products-to-recoverable waste.	
	EIT InnoEnergy	▪ A continuous alignment and permanent exchanges to commonly support sustainable energy innovations which provide industry with new technologies that reduce energy costs, increase system performance, decrease GHG emissions and increase competitiveness. ▪ The cost-effective supply of affordable renewable energy at an unprecedented scale is pivotal for the transformation of the Process industry and a key success factor	

		for the effective deployment of the CCU processes.	

Notes for further development:

Additionally, the proposal identifies the Digital Partnerships (High-performance computing or AI, Data and Robotics) for possible collaboration activities to accelerate progress of CCNI innovations.

Key issues to address:

- Relevant other partnership candidates are presented, but it should be further developed what areas for collaboration are, and what that would mean in practice (other than keeping regular contacts).
- More detail on how complementarity and avoidance of duplications will be assured should be described.
- Elaborate further on how collaboration with the other partnerships is planned to work in practice, e.g a mechanism could be through work plans/ common calls…, and for what purpose.

2.9.3 Synergies with other Programmes

Table 38 Overview of synergies identified in the Carbon Neutral and Circular Industry proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Innovation Fund	▪ To support highly innovative CCNI projects leading to significant emission reductions and bring them to TRL9, by providing support to scale up innovations incl. the demonstration of first-of-a-kind plants and industrial symbiosis.	
Important Projects of Common European Interest	▪ IPCEIs will further enable Member States to offer support to first industrial deployment (the marbles) through repayable advances, loans, guarantees or grants and by a more flexible approach to State Aid.	
National and regional funds	▪ To define Hubs for Circularity co-investment models relating to their Business2Territory plans. should be in line with smart specialisation priority areas.	
Connecting Europe Infrastructure	▪ To support roll-out investments for renewable energy infrastructure for CCNI projects.	
ERDF/Cohesion Fund	▪	
Just Transition Fund	▪	

(Green Deal Investment Plan)	▪ To support roll-out investments for CCNI projects.	
Other initiatives in Horizon Europe		
Cluster 4 and Cluster 5 calls (latter for implementation of SET PLAN)	Providing further support to R&I from TRL3 to TRL8	

Notes for further development:
Coherence and synergies with major national policies should be described in detail. Coherence with other EU programmes is very generic and should be more specific, for example synergies with the Just Transition Fund and EIC.

2.10 European Partnership for Globally competitive Space Systems

2.10.1 Summary

Space is a strategic sector for the European Union. Among the objectives of the Space Strategy for Europe[13] for the European Union are 'Fostering a globally competitive and innovative European space sector' and 'Reinforcing Europe's autonomy in accessing and using space in a secure and safe environment'. A strategic approach to EU-funded R&I under the form of a Co-Programmed Partnership can bring a key contribution to these objectives.

2.10.2 Coherence and coordination among partnerships

Table 39 Overview of Partnerships identified in the Globally competitive Space Systems proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Digital, Industry and Space	AI, Data and Robotics	▪ Future satellites and launchers operations	No
	Made in Europe		No
	Photonics	▪ Enhance radically the transmission capacity of future satellites	No
	Key Digital Technologies	▪ Collaborate on technologies for non-dependence, in particular EEE components	No
	Smart Networks and Services	▪ Beyond 5 G where telecommunications satellites can provide key assets of the network to serve remote areas or areas where it is difficult / very expensive to deploy a ground infrastructure	No
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Climate neutral, sustainable and productive Blue Economy	▪ Marine observation from space	No

Notes for further development:

Links with other partnership candidates are presented and include potential actions with each partnership. Links are only in cluster 4 (like in the HE orientations document). The partnership is not mentioned in any of the other proposals.

Key issues to address:

- The proposal should describe in more detail the foreseen collaborations and what will be different from past interventions?
- What are vice-versa coherences with the other cluster 4 partnerships?
- Perhaps some linkages to Cluster 6 and also mobility partnerships.

2.10.3 Synergies with other Programmes

Table 40 Overview of synergies identified in the Globally competitive Space Systems proposal

Programme	Purpose	Details (form etc)

[13] COM(2016)705

Programmes at EU, national or regional level		
ESA	▪ In general, R&I carried out in the frame of the EU framework programme in the field of space remains in the pre-competitive field (TRL 6-7 max). It is expected that this will aliment a number of higher TRL level demonstration activities that will be carried out in the frame of ESA programmes (i.e. funded by Members States).	▪ Because the ESA framework does not require a multinational consortium approach, its environment is better suited to close to market high TRL level demonstration activities.
Invest EU	▪ As an element of a space entrepreneurship ecosystem	
Other initiatives in Horizon Europe		

Notes for further development:

- Links with other Union programmes should be elaborated.
- Discuss synergies by seeking additional investments to demonstrators through EU/ private schemes etc), but also from other programmes (e.g. DEP, financial instruments, loans, or cohesion funds, social funds to support skills).

3 Climate, Energy and Mobility – Cluster 5

Table 41 Cluster 5 - Coherence and coordination among partnerships

		Cluster 1								Cluster 4									Cluster 5										Cluster 6								Other Pillars											
		EU-Africa Global Health	Innovative Health	Chemical Risk Assessment	ERA Health	Health and Care Systems Transformation	Personalised Medicine	Rare Diseases	One Health / AMR	HPC	Key Digital Technologies	Smart Networks and Services	AI, Data and Robotics	Photonics	Clean Steel	Metrology	Made in Europe	Carbon Neutral and Circular Industry	Globally competitive Space Systems	Transforming Europe's rail system	Integrated Air Traffic Management	Clean Aviation	Clean Hydrogen	Built4People	2ZERO	CCAM	Zero-emission waterborne transport	European industrial battery value chain	DUT	Clean Energy Transition	Accelerating farming systems	Animal Health and Welfare	Agriculture of Data	Rescuing biodiversity to safeguard life on Earth	Blue Economy	Safe and Sustainable Food System	Circular bio-based Europe	Water4All	Innovative SMEs	European Science Cloud	EIT Climate-KIC	EIT InnoEnergy	EIT Digital-	EIT Health-	EIT Food	EIT Manufacturing	EIT Raw Materials	EIT Urban Mobility	KIC Cultural and Creative Industries
Cluster 5	Transforming Europe's rail system										x	o	o			o					x	x	x		o	x	o	x	o										o	o									
	ATM										x	x	x			o			x	x		x				o			o										o			o							
	Clean Aviation															o	x			x	x		x					x								o			o	o								
	Clean Hydrogen														x	o		x		x		x			X	x	x	x								o			o			o					
	Built4People														o	o	x	x							o					x	x					x			o	o	o						
	2ZERO										x	o	o			o				x			x	o		x	o	x	x							o			o	o						x	
	CCAM										x	x	x	o		o			o	x	o		x		X		x		x										o		o						x	
	Waterborne transport										o	o	o			o	o	o		x			x		o	x		x						o	x		o	x	o	o							
	Batteries										x					o	x	o		x		x	x		x		x		x										o		x				x	x		
	DUT											o				o				o	o			x	x	x			x					x		x		x		o	x	o	o				o	
	Clean Energy Transition														x	o							x	x			o	x	X					o						o	x	x				x		

Both mentioned
Only left column
Partnership indicates coherence
Suggested by COM services
x Priority
o Inform

Table 42 Cluster 5 - Synergies with other programmes

● Proposers indicated possible synergy
❍ Possible additional synergies

	Cluster 5										
	Transforming Europe's rail system	Integrated Air Traffic Management	Clean Aviation	Clean Hydrogen	Built4People	2ZERO	CCAM	Zero-emission waterborne transport	Batteries	DUT	Clean Energy Transition
Other programmes and initatives											
Trans-European Transport Network (TEN-T)	●										
Connecting Europe Facility (CEF)	●	●	❍	●		●	●	●	●		●
Digital Europe Programme (DEP)	●										
InvestEU	❍			●	❍	●		●	❍	❍	●
Structural Funds (ERDF/Cohesion)	●	❍	❍	●	❍	●	❍	●	❍	❍	●
Strategic Forum for Important Projects of Common European Interest (IPCEI)				●							
Important Project of Common European Interest (IPCEI)				●	❍	●			●		
ETS Innovation Fund	❍			●							
Innovation Fund				●				●	❍		●
Modernisation Fund								●			●
European Investment Bank	●		❍	●	❍			●		❍	
Circular Bioeconomy Thematic Investment Programme											
Programme for Environment & Climate Action (LIFE)					●			●			●
Copernicus											
GEOSS											
European Innovation Council	●					●		●			
National Energy and Climate Change Plans				●	❍						●
Covenant of Mayors					●						
Standardisation Bodies				●	●		❍			❍	
HE Mission Areas											
Adaptation to Climate Change, including Societal Transformation	●		❍	❍	●	●		●		❍	❍
Climate-neutral and Smart Cities	●			●	●	●		●		❍	
Cancer						●					
Healthy Oceans, Seas, Coastal and Inland Waters								●			
Soil Health and Food											

3.1 European Partnership for Transforming Europe's rail system

3.1.1 Summary

Transport is a key enabler of the Internal Market, growth and global trade, accounting for around 5% of EU GDP and directly employing about 11 million people. Demand for transport continues to rise, estimated at +35% in European passengers and +53% in inland freight transport by -2050 (2015 baseline). Rail commitment to meet such major demand growth, while contributing to transport carbon neutrality, requires a strong boost. The rail sector proposes a new Rail R&I Institutional Partnership to deliver new technologies, sustainable solutions and disruptive innovation to achieve a shift to sustainable and smart mobility, where rail constitutes its backbone while ensuring a global competitive advantage.

3.1.2 Coherence and coordination among partnerships

Horizon Europe structure	Candidate partnerships	Areas for collaboration	Mentioned in other proposal
Digital, Industry and Space	High Performance Computing	▪ Transversal to all the Programme	No
	Smart Networks and Services	▪ Blockchain ▪ Transversal to all the Programme	Yes
Climate, energy and mobility	Integrated Air Traffic Management	▪ Exploit the benefits of different modes at different stages of the journey and minimise environmental impacts.	Yes
	Clean Aviation	▪ New material, alternative fuels, etc.,	No
	Clean Hydrogen	▪ Hydrogen and fuel cells technologies as technology bricks to be integrated into end-uses application. ▪ New design of vehicles or vessels able to integrate the new clean technology.	Yes
	European industrial battery value chain	▪ Explore the potential for greater use of battery and hydrogen fuel cell technology to reduce the need for investment in electrification of rail infrastructure	No
	Connected and Automated Driving	▪ Sharing urban space with urban rail, level crossings, network concepts, etc.	No
	Towards zero-emission road transport (2ZERO)	▪ Exploit the benefits of different modes at different stages of the journey and minimise environmental impacts.	No
	Driving urban transitions to a sustainable future (DUT)	▪ Increase demonstrations and facilitate deployment of technologies in urban environment	No
Other Pillars	EIT Climate-KIC EIT Urban Mobility EIT InnoEnergy	▪ Increase demonstrations and facilitate deployment of technologies.	n/a

Notes for further development:
The proposal lists most key partnerships in those areas for possible collaboration. It does not mention the *DUT* Partnership and the *2Zero* Partnership, which could be also relevant for *Transforming Europe`s rail system*. The proposal does not go very much in detail to explain the exact focus, intensity and form (modalities) of the collaborations. Nor does there seem to be a hierarchy or prioritization of the most important linkages. Clusters 4 and 5 are most relevant for collaboration. Several other proposals, identified as important for collaboration by *Transforming Europe`s rail system*, share the view. For instance, *Smart Networks and Services* identifies *Transforming Europe`s rail system* as important. Also, *Integrated Air Traffic Management* identifies interconnections with *Transforming Europe`s rail system* as important but does not specify the purposes. *Clean Hydrogen* candidate partnership is most comprehensive in describing possible collaborations with *Transforming Europe`s rail system* partnership. It emphasizes *Transforming Europe`s rail system* as end-uses applications for which hydrogen technologies can play a role for emission reduction objectives.

Key issues to address:
- To **elaborate further** the **focus and form of collaboration**, including to **prioritise** those that are essential for the achievement of objectives.
- With the shift of focus of the *Transforming Europe`s rail system* partnership to urban areas, it should also consider the relevance and opportunities with the ***DUT*** Partnership with Member States.
- It is especially important to discuss with all **cluster 5** mobility related partnerships to develop a common approach to cross-modality.
- It is also important to discuss with **cluster 4 digital partnerships** the division of tasks.

3.1.3 Synergies with other Programmes

Table 43 Overview of synergies identified in the Transforming Europe`s rail system proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Trans-European Transport Network (TEN-T)	▪ Related activities, with the Rail Freight Corridors	▪ Deployment of successful results in strategic European corridors and the implication of the Rail Partnership is necessary to ensure the system of systems coordination of timely deployments of EU added value solutions through CEF and possibly other instruments.
Connecting Europe Facility (CEF)	▪ Deployment, revision of CEF regulatory framework	▪ Coordination of timely deployments of EU added value solutions through CEF and possibly other instruments ▪ Reserving a large share of CEF funding for the deployment of new rail technological and operational solutions, including in urban TEN-T nodes
European Regional Development Fund (ERDF)	▪ Increase economic and social cohesion and reduce imbalances	▪ Not specified

Cohesion Fund (CF)	▪ Increase economic and social cohesion and reduce imbalances	Not specified
Digital Europe Programme (DEP)	▪ Develop leadership and competitiveness in the global digital economy ▪ Reinforce Europe's capacities in high performance computing, artificial intelligence, cybersecurity and advanced digital skills and ensure their wide application across the economy and society	Not specified
European **I**nvestment **B**ank (EIB)	▪ Maximize the leverage effect of the new Partnership impact	Not specified
Other initiatives in Horizon Europe		
European Innovation Council (EIC)	▪ Ensure the involvement of start-ups in the new Rail Partnership.	▪ Not specified
Mission Adaptation to Climate Change, including Societal Transformation	▪ Not specified	▪ Not specified
Mission Climate-neutral and Smart Cities	▪ Not specified	▪ Not specified

Notes for further development:
While the obvious synergies opportunities are mapped in the proposal (notably transport programmes), the purpose and exact mechanisms (in terms of activities, governance etc.) should be further elaborated. Since the Rail partnership proposal highlights deployment as a key goal, it should consider synergies with the **European Regional Development Fund (ERDF)** and **Cohesion Fund** that may be needed to support the further development of rail networks in different Member States and regions. The partnership candidate could also benefit from synergies with **Digital Europe Programme (DEP)** given the importance of deploying interoperable digital solutions in the proposal.

Key issues to address:

- Synergies with the **European Regional Development Fund (ERDF)** and **Cohesion Fund (CF)**
- Synergies with **Digital Europe Programme (DEP)**
- To elaborate further the purpose and form of collaboration in the context of developing synergies.

3.2 European Partnership for Integrated Air Traffic Management (ATM)

3.2.1 Summary

The outdated aviation infrastructure has brought Europe's ability to accommodate efficiently growing air traffic to its limits both in the air and on the ground. The increasing number and new types of air vehicles, such as delivery drones and air taxis, that will soon be seeking access to the airspace adds complexity to airspace management. Innovative solutions applied today in the digital economy can result in a radical transformation of Europe's aviation infrastructure, making air transport smarter, more sustainable, connected and accessible to all. Europe has a

unique opportunity, as the world leader in aviation infrastructure technology, to usher in a smarter and greener aviation.

3.2.2 Coherence and coordination among partnerships

Table 44 Overview of Partnerships identified in the ATM proposal

Horizon Europe structure	Candidate partnerships	Areas for collaboration	Mentioned in other proposal
Digital, Industry and Space	Key Digital Technologies	▪ Evolution of technologies for data manipulation and distribution, cyber security, legal aspects (e.g. on data ownership, responsibility and liability issues) ▪ Advanced decision making including big data and artificial intelligence.	No
	Smart Networks and Services		No
	AI, Data and Robotics		No (mobility is mentioned in general)
Climate, energy and mobility	Transforming Europe's rail system	▪ Performance requirements to support multi-modal transport ▪ Level of predictability to enable through ticketing ▪ Data exchange requirements to enable luggage reconciliation.	Yes
	Clean Aviation	▪ Mutual awareness and collaboration between airborne and ATM Research & Innovation roadmaps ▪ Ensure synchronisation and thus maximisation of benefits, in particular on environment ▪ Performing joint demonstration activities on the following topics: Concept of operations of new vehicles or Airport infrastructure for new vehicles.	Yes

Notes for further development:

Potential links and collaborations are described that are related to air transport (*Clean Aviation)*, multi-modal transport (*Transforming Europe's rail system*), and digital technologies (*Key Digital Technologies, Smart Networks and Services, AI, Data and Robotics*). Thus, clusters 4 and 5 are most relevant for collaboration. The proposal does not consider other candidate Partnerships in the area of transport that could be relevant for the multi-modality, such as *Connected and Automated Driving* or *EIT Urban Mobility*. Also, the *DUT* Partnership might be important for the connection of air traffic to urban spaces (ensuring better synchronisation with demand-side). The proposal does also not include a possible collaboration with the *Globally competitive Space Systems* partnership, which applies vice-versa.

There is also little synchronisation in some other proposals. The Cluster 4 partnerships related to digital technologies do not mention *ATM*. *Clean Aviation* mentions *ATM* linked with autonomous operations that are expected to be key drivers for the next generation of aircrafts. The *Clean Aviation* proposal states that research programme activities dealing with the flight management of the vehicle need to be well aligned with research aspects and activities regarding air traffic management. *Transforming Europe's rail system* mentions *ATM* with

collaboration opportunities in the areas of multimodal integrated approach, traffic and network management.

Key issues to address:

- To **elaborate further** the **focus and form of collaboration**, including to **prioritise** those that are essential for the achievement of objectives.
- Engage with *Globally competitive Space Systems* and reflect the relevance of *DUT*.
- It is especially important to discuss with all **cluster 5** mobility related partnerships to develop a common approach to cross-modality.
- It is also important to discuss with **cluster 4 digital partnerships** the division of tasks.

3.2.3 Synergies with other Programmes

Table 45 Overview of synergies identified in the xxx proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
France : Conseil pour la Recherche Aéronautique Civile (CORAC)	▪	
Germany: Luftfahrtforschungsprogramm (LuFO)	▪	
Connection Europe Facility (CEF).	▪	
Other initiatives in Horizon Europe		
▪	▪	

- Also, synergies with the **Cohesion Fund (CF)** should be elaborated.

3.3 European Partnership for Clean Aviation

3.3.1 Summary

Climate neutral aviation is a formidable challenge, since the sector is globally competitive, and characterised by complex system integration, significant technological risk, exacting safety standards and certification requirements and consequently long development cycles with very high financial risks and investments. This transition from current aircraft, propulsion concepts and fossil fuels towards new, low emissions, more autonomous air vehicles using sustainable energy carriers requires a massive research, technology development and demonstration effort. An integrated programme covering upstream research and downstream integration and demonstration efforts within a single technology roadmap is critical to achieve timely success.

Synergies in overall order of importance are with: 1) aeronautics research programmes; 2) Integrated ATM partnership; 3) synergies with other partnerships working on technologies beneficial for Clean Aviation's objectives/impacts, i.e. Clean Hydrogen, Key Digital Technologies, Smart Networks and Services, European Industrial Battery Value Chain ,Space, other transport PPPs etc; and 4) potential synergies with others. In addition, and often more importantly, synergies with Member States' and regions' investments.

3.3.2 Coherence and coordination among partnerships

Table 46 Overview of Partnerships identified in the Clean Aviation proposal

Horizon Europe structure	Candidate partnerships	Areas for collaboration	Mentioned in other proposal
Digital, Industry and Space	AI, Data and Robotics	▪ Design, manufacturing, testing and certification, operation and maintenance of aircraft, efficient and secure passenger management	No
	Key Digital Technologies	▪ Complementary research activities regarding electronic components and systems, semiconductor manufacturing	Yes
	Smart Networks and Services	▪ Security/ cybersecurity as prerequisites for new automated functions in aviation.	No
	Climate Neutral and Circular Industry	▪ New materials, their future production processes and assembly techniques are key complementary contributors to improved performance and reduced environmental footprint.	Yes
	Made in Europe		Yes
Climate, energy and mobility	ATM	▪ Autonomous operations are expected to be key drivers for the next generation of aircraft ▪ Accordingly align with research aspects and activities regarding air traffic management	Yes

	Clean Hydrogen	▪ Opportunity to reduce CO_2 emissions ▪ Low noise footprint ▪ Ensure a European technology breakthrough of this value chain in air transportation	Yes
	European Industrial Battery Value Chain	▪ Partial electrification through hybridisation, mixing electric engines with on-board electricity production. ▪ Include a dedicated area to accelerate towards the very high requirements for aviation to contribute their potential towards climate neutral aviation.	Yes
	Clean Energy Transition	▪ Sustainable aviation fuels (SAF), inc. bio-fuels	Yes
Other Pillars	EIT Manufacturing EIT Raw Materials	▪ Key to improved performance and reduced environmental footprint ▪ Systemic approach between Clean Aviation and several Horizon Europe initiatives	n/a
	Globally Competitive Space Systems	▪ Aerospace commonalities include reusability of launchers and for non-dependence of critical technologies.	

3.3.3 Synergies with other Programmes

Table 47 Overview of synergies identified in the xxx proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
MS' aviation R&I programmes	▪ Ensure co-operation on R&I towards climate neutral aviation	
ESIF, & CEF	▪ Facilitate deployment and bringing R&I results to market.	
Other initiatives in Horizon Europe		
▪	▪	

3.4 European Partnership on Clean Hydrogen

3.4.1 Summary

Europe's ambitions will require clean hydrogen at scale. Without it, the EU will miss its climate, environmental and energy objectives as well as the opportunity to create a strong, European, competitive industry. *Clean Hydrogen*, as an institutionalised European partnership, will accelerate development and deployment of European clean hydrogen technologies, enabling them to contribute to a sustainable, decarbonised and fully integrated energy system.

3.4.2 Coherence and coordination among partnerships

Figure 1: Synergies with other partnerships, Source: Draft proposal Clean Hydrogen Partnership candidate - Annex I

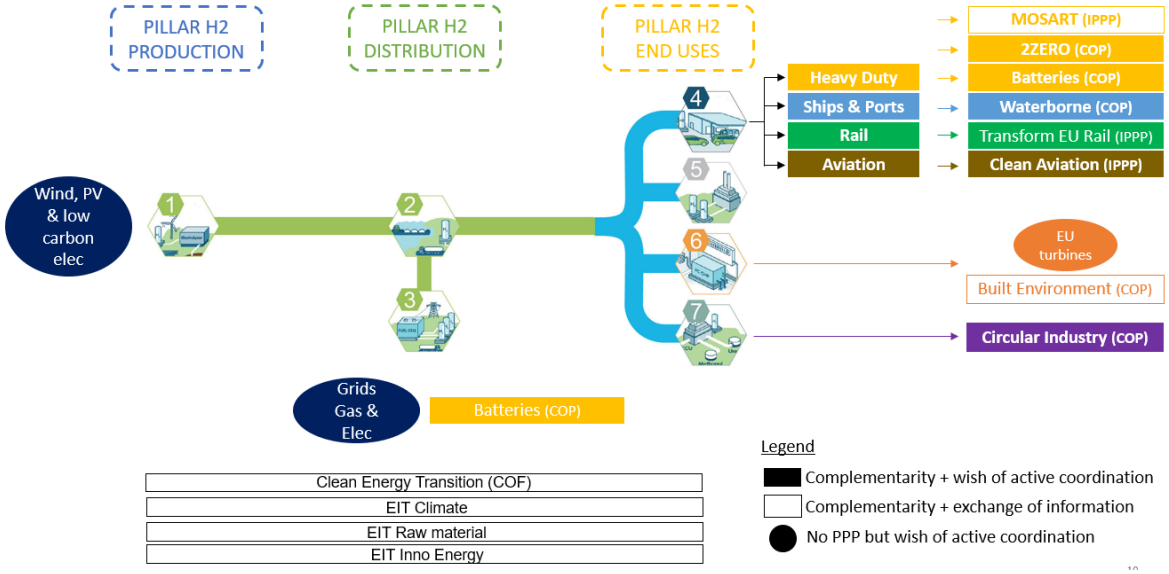

Table 48 Overview of Partnerships identified in the Clean Hydrogen proposal

Horizon Europe structure	Candidate partnerships	Areas for collaboration	Mentioned in other proposal
Digital, Industry and Space	Clean Steel	• Hydrogen as energy and reducing agent	Yes/ signed
	Carbon Neutral and Circular Industry	• Hydrogen as a feedstock. • Integration of H2 and new industrial processes • Regulation, codes and standards • Coordination within "H2 valleys" and the "Clean and circular hub"	Yes/MoU to be finalised in coming weeks
	Metrology	• Hydrogen re-fueling station meters, et.sim	No
Climate, energy and mobility	CCAM	• End-uses	No
	2ZERO	• Focus on the new generation of technology building blocks that can adapt to new automotive	Yes/MoU to be finalised in coming weeks

		• platforms developed in 2Zero. • New applications (e.g. trucks and coaches) as in the transport part of *Clean Hydrogen*	
	Zero-emission waterborne transport	• It will be important to collaborate (e.g. coordinated calls), to develop multi MW fuel cell required for ship propulsion and the related fuel technology. • Ports as location for "H2 valley" projects.	Yes/ MoU to be finalised in coming weeks
	Transforming Europe`s rail system	• Rail hubs can be good candidates for H2 valleys with close proximity from ports and/or airports.	Yes/ MoU to be finalised in coming weeks
	Clean Aviation	• Electrification and hybridization of aircrafts: need to develop adapted fuel cells, adapted storage, and H2 infrastructure. • New fuels for aviation: liquid hydrogen (that requires a completely new architecture). • Airports are a privilege location for "H2 valley" projects	Yes/ MoU to be finalised in coming weeks
	European industrial battery value chain	• Design of hybrid systems combining battery and hydrogen technologies	Yes
	Built4People	• End-use	No
	Clean Energy Transition	• Exchange of information	Yes
Food, Bioeconomy, Natural Resourcesresources, Agriculture and Environment	Blue Economy	• Clean hydrogen from water	No
	Circular Biobased Europe		No
Other Pillars	EIT Climate-KIC EIT Raw materials EIT InnoEnergy EIT Urban Mobility	• Exchange of information • SMEs • Public buses and infrastructures	n/a
Horizon Europe structure	**Candidate partnerships**	**Areas for collaboration**	**Mentioned in other proposal**
Digital, Industry and Space	Clean Steel	• Hydrogen as energy and reducing agent	Yes/ MoU established

	Carbon Neutral and Circular Industry	• Hydrogen as a feedstock. • Integration of H2 and new industrial processes • Regulation, codes and standards • Coordination within "H2 valleys" and the "Clean and circular hub"	Yes/Meeting
	Metrology	• Hydrogen re-fueling station meters, et.sim	No
Climate, energy and mobility	CCAM	• End-uses	No
	2ZERO	• Focus on the new generation of technology building blocks that can adapt to new automotive platforms developed in 2Zero. • New applications (e.g. trucks and coaches) as in the transport part of *Clean Hydrogen*	Yes/MoU to be finalised
	Zero-emission waterborne transport	• It will be important to collaborate (e.g. coordinated calls), to develop multi MW fuel cell required for ship propulsion and the related fuel technology. • Ports as location for "H2 valley" projects.	Yes/ Joint declaration under discussion
	Transforming Europe`s rail system	• Rail hubs can be good candidates for H2 valleys with close proximity from ports and/or airports.	Yes/ Meeting
	Clean Aviation	• Electrification and hybridization of aircrafts: need to develop adapted fuel cells, adapted storage, and H2 infrastructure. • New fuels for aviation: liquid hydrogen (that requires a completely new architecture). • Airports are a privilege location for "H2 valley" projects	Yes/ Meeting
	European industrial battery value chain	• Design of hybrid systems combining battery and hydrogen technologies	Yes
	Built4People	• End-use	No

	Clean Energy Transition	• Exchange of information	Yes
Food, Bioeconomy, Natural Resourcesresources, Agriculture and Environment	Blue Economy	• Clean hydrogen from water	No
	Circular Biobased Europe		No
Other Pillars	EIT Climate-KIC EIT Raw materials EIT InnoEnergy EIT Urban Mobility	• Exchange of information • SMEs • Public buses and infrastructures	n/a
Horizon Europe structure	**Candidate partnerships**	**Areas for collaboration**	**Mentioned in other proposal**
Digital, Industry and Space	Clean Steel	• Hydrogen as energy and reducing agent	Yes
	Carbon Neutral and Circular Industry	• Hydrogen as a feedstock. • Integration of H2 and new industrial processes • Regulation, codes and standards • Coordination within "H2 valleys" and the "Clean and circular hub"	Yes
	Metrology	• Hydrogen re-fueling station meters, et.sim	
Climate, energy and mobility	Connected and Automated Driving	• End-uses	No
	2ZERO	• Focus on the new generation of technology building blocks that can adapt to new automotive platforms developed in 2Zero. • New applications (e.g. trucks and coaches) as in the transport part of *Clean Hydrogen*	Yes
	Zero-emission waterborne transport	• It will be important to collaborate (e.g. coordinated calls), to develop multi MW fuel cell required for ship propulsion and the related fuel technology. • Ports as location for "H2 valley" projects.	Yes
	Transforming Europe`s rail system	• Rail hubs can be good candidates for H2 valleys with close proximity from ports and/or airports.	Yes
	Clean Aviation	• Electrification and hybridization of aircrafts: need to develop adapted fuel cells, adapted storage, and H2 infrastructure. • New fuels for aviation: liquid hydrogen (that requires a completely new architecture). • Airports are a privilege location for "H2 valley" projects	Yes

	European industrial battery value chain	• design of hybrid systems combining battery and hydrogen technologies	Yes
	Built4People	• End-use	No
	Clean Energy Transition	• Exchange of information	Yes
Food, Bioeconomy, Natural Resourcesresources, Agriculture and Environment	Climate neutral, sustainable and productive Blue economy Circular Biobased Europe	• Clean hydrogen from water	No
Other Pillars	EIT Climate-KIC EIT Raw materials EIT InnoEnergy EIT Urban Mobility EIC	• Exchange of information • SMEs • public buses and infrastructures	n/a

Notes for further development:

The proposal gives a comprehensive overview of possible collaboration with other partnerships, including KICs. Clusters 4 and 5 are most relevant for collaboration. The clean hydrogen partnership is broadly considered in the other proposals. Most other relevant partnerships mentioned in Table 48 elaborate possible collaboration with clean hydrogen.

The proposal is detailed on cooperation and the division of tasks between partnerships. It no longer suggests to draw a fixed line between partnerships that develop technology "building blocks" (Clean Hydrogen for Europe) and partnerships that are end users (e.g. heavy duty, ships and ports, rail, aviation, steel and Circular industry). The proposal states both types of partnerships need to work together to be able to realise effective demonstrations and some coordinated calls between the hydrogen partnership and more applied partnerships are foreseen. With Batteries there is a wish for active collaboration in order to design of hybrid systems combining battery and hydrogen technologies.

3.4.3 Synergies with other Programmes

Table 49 Overview of synergies identified in the Clean Hydrogen proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Connecting Europe Facility (CEF)	• Coordination role for Clean Hydrogen when it comes to hydrogen technologies	• For example CEF Energy and Transport • Coordinating role between the activities supported by Horizon Europe, CEF and the ETS innovation funds.
ESIF, IPCEI, national or regional programmes	• Knowledge and information sharing among relevant stakeholders	• A new IPCEI on Hydrogen is foreseen for 2021 and current JU is supporting dissemination of this and DG GROW are focussing on the build up of partnerships.

TEN-T		• Hydrogen transport and refuelling corridors
Invest-EU		
EIB		
Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Connecting Europe Facility (CEF)	• Coordination role for Clean Hydrogen when it comes to hydrogen technologies	• For example CEF Energy and Transport • Coordinating role between the activities supported by Horizon Europe, CEF and the ETS innovation funds.
ESIF, IPCEI, national or regional programmes	• Knowledge and information sharing among relevant stakeholders	• A new IPCEI on Hydrogen is foreseen for 2021 and current JU is supporting dissemination of this build-up of partnerships.
TEN-T		• Hydrogen transport and refuelling corridors
Invest-EU		
EIB		

Notes for further development:

- *Clean Hydrogen* has aligned its strategic and innovation agenda with national Member States policies and actions (through analysis of the draft National Energy and Climate plans (NECPs) published by all Member States in 2019).
- Synergies with other programmes is well described but it would benefit from describing more concretely the purpose and how it allows to achieve the specific objectives (e.g. demonstrators = Cohesion Funds, CEF etc.).
- The mentioned synergies consider CEF and the ETS Innovation Funds as well as funding located inside HE and at the national and regional level, additionally, ESIF is mentioned. The Commission is proposing a European Hydrogen Investment Agenda which will try and facilitate synergies between the partnerships grants and other funding mechanisms.
- The proposal should include more details on purposes, goals, governance and activities regarding synergies with the other programmes. It could be more specific on synergies within HE and at the national and regional level. Links to missions, including Climate neutral and Smart Cities, and Healthy Oceans are missing.
- Concerns around standardisation.

3.5 People-centric sustainable built environment (Built4People)

3.5.1 Summary

The Built4People partnership provides a cross-cluster structure bringing together public and private sectors to nurture Research and Innovation pathways based on a holistic view of the design, creation, operation, renovation and recycling of the built environment. It provides a comprehensive framework and objectives to shape a fully sustainable and high-quality living and working environment, infrastructure for active mobility and clean energy solutions of the future, mitigating climate change and adapting to it through increased resilience for the benefit of all end-users.

3.5.2 Coherence and coordination among partnerships

Table 50 Overview of Partnerships identified in the Built4People proposal

Horizon Europe structure	Candidate partnerships	Areas for collaboration	Mentioned in other proposal
Digital, Industry and Space	Made in Europe	• *Built4People* will serve as a vehicle to integrate R&I outputs from different parts of Horizon Europe, in particular from ○ Cluster Climate, Energy and Mobility, ○ Cluster Digital, and Industry and Space- Materials – Developing Circular industry.	Yes
	AI, Data and Robotics		Yes
	Smart Networks and Services (SNS)		No
	Carbon Neutral and Circular Industry		Yes
Climate, energy and mobility	Circular bio-based Europe		No
	DUT		Yes
	Clean Energy Transition		Yes
Other Pillars	EIT Urban Mobility		n/a
	EIT InnoEnergy		n/a

Notes for further development:

The proposal identifies other partnerships, including two KICs for possible collaboration. EIT Climate-KIC could be added. The relevant partnerships are in clusters 4 and 5 reflecting the interest to collaborate on topics related to circularity and resource efficiency, urban environments. The proposal itself, however, is not thorough in explaining the purpose of these linkages, and the form that the collaboration should take. Most other candidates identify possible collaboration with Built4People. Only the partnership candidate on *Smart Networks and Services* has not mapped Built4People as possible candidate for collaboration.

Key issues to address:

- To **elaborate further** the **focus and form of collaboration**, including to **prioritise** those that are essential for the achievement of objectives.
- Links with other European Partnerships should be further detailed out with concrete examples and how liaising with them contributes to achieving the objectives and impacts of the initiative (notably those that fall beyond the scope of R&I).
- Especially the coherence with the *DUT* partnership should be detailed, since both partnerships have cross-modal elements in similar fields.
- Also biofuels from cluster 6 might be relevant.

3.5.3 Synergies with other Programmes

Table 51 Overview of synergies identified in the Built4People proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
L'Instrument Financier pour l'Environnement (LIFE)	• Not specified	
Covenant of Mayors Europe initiative for Climate & Energy	• Not specified	
European and International Standardisation Bodies such as CEN/CENELEC, IEC, EOTA, ISO	• Close relation for standards and standardization processes	
Expert Group on Public Procurement	• Connecting	
Construction 2020	• Close work	
EU BIM (building information modelling) Task Group	• Liaise with the EU BIM (building information modelling) Task Group, a Commission initiative bringing together Member States to deliver a common European network aimed at aligning the use of Building Information Modelling in public works spatial planning etc.	
Other initiatives in Horizon Europe		
Mission "Climate-neutral and Smart Cities"	• Not specified	
Mission "Adaptation to Climate Change, Including Societal Transformation"	• Not specified	

Notes for further development:

Synergies opportunities are mapped, while it is not completely clear how stakeholders, partners and synergies with other programmes are differentiated. Most of the other initiatives are outside HE, since it is important to have a link to the regional community level where building decisions are taken. Links with other programmes and initiatives (e.g. ERDF, missions) should be further detailed out with concrete examples of programmes and how liaising with them contributes to achieving the objectives and impacts of the initiative (notably those that fall beyond the scope of R&I).

Key issues to address:

- Activities can refer those in HE toolbox, and those that associations/ partners do (promoting synergies with other programmes and initiatives, seeking additional opportunities, e.g. financial instruments, exploitation & dissemination of results via, updating roadmap, etc).

3.6 European Partnership - Towards zero-emission road transport (2ZERO)

3.6.1 Summary

The partnership will set an ambitious research to accelerate the development of a zero tailpipe emission transport in Europe with a system approach, and will develop a common vision and deliver a multi-stakeholders roadmap for a climate neutral and clean road transport system. It will improve mobility and the safety of people and goods, hence ensure future European leadership in innovation, production and services.

3.6.2 Coherence and coordination among partnerships

Table 52 Overview of Partnerships identified in the 2ZERO proposal

Horizon Europe structure	Candidate partnerships	Areas for collaboration	Mentioned in other proposal
Digital, Industry and Space	Made in Europe	Workshops on • Advanced manufacturing • Advanced materials for automotive applications • Robotics and digitisation in manufacturing • Value chains	Yes
	Key Digital Technologies	• Electronic components and system Software • Reinforcement of existing links	No
Climate, energy and mobility	Cooperative, connected and automated mobility	• Connected and automated mobility to improve transport efficiency • Impact of digitalsation on road transport energy consumption	Yes
	Clean Hydrogen	• Reinforce and reorganize smooth transfer of information • Clean Hydrogen brings important technological contribution to 2ZERO (e.g. near zero carbon hydrogen production pathways, fuel cells) • Integration of Fuels Cells at vehicle level (Heavy Duty Vehicles), interface between the vehicle and infrastructure, demonstration and deployment activities.	Yes
	European industrial battery value chain	• Development of strong collaboration • Road transport is one of main applications • Integration of batteries at vehicle level.	Yes
	Driving Urban Transition partnership (DUT)	• Dissemination and exploitation or R&I solutions in urban perspective	Yes

		• Identifying stakeholder needs and raising research and innovation demands • Ensure alignment and take-up of new solutions	

Notes for further development:

The proposal identifies two partnerships in cluster 4 (*Made in Europe, KDT*) and three partnerships in cluster 5 (*Clean hydrogen, European industrial battery value chain, Cooperative, connected and automated mobility*).

Key issues to address:

- To **elaborate further** the **focus and form of collaboration**, including to **prioritise** those that are essential for the achievement of objectives.
- Relevant is a) other transport ones (especially if they aim urban settings), b) green tech, such as batteries and hydrogen, maybe biofuels in cluster 6, too.

3.6.3 Synergies with other Programmes

Table 53 Overview of synergies identified in the 2ZERO proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Connecting Europe Facility (CEF)	• Promote synergies between transport, energy and digital sectors. • Deployment of the recharging infrastructure and to leverage private investment.	
InvestEU		
Cohesion policy and European Structural and Investment Funds.	• Links between 2Zero and other Smart Specialisation partnerships such as the Safe and Sustainable Mobility could be established to ensure coordination and to identify and exploit synergies	
Other initiatives in Horizon Europe		
EIT	• Not specified	
Mission "Adaptation to Climate Change, Including Societal Transformation"	• Not specified, to be dicsussed	
Mission "Climate-neutral and Smart Cities"	• Currently suggested area: impact of non-powertrain related emissions.	
Mission "Cancer"	• Not specified	

Notes for further development:

- The proposal suggests cooperation with national activities / authorities, international links could also be developed.
- The proposal considers also a better coordination between the Smart Specialisation Partnerships and European Partnerships in order to avoid fragmentation, duplication, and gaps in the research and innovation projects carried out (for instance with *The Safe and Sustainable Mobility* Smart specialisation partnership).

Key issues to address:

- During the consultation of Member States (MS) on the portfolio of future European Partnerships, many countries replied they would like to contribute and join as a partner in the proposed partnerships with industry. There was a specific interest for aligning priorities, and testing and deployment activities (also in synergy with cohesion Funds and Connecting European Facility). Importantly, many countries indicated that they have something relevant at national level (e.g. R&I strategies, plans and programmes, research infrastructure, testbeds etc.) regarding the respective partnerships.
- Collaboration should be concrete and focused, and commitments needs be discussed at the level of individual partnerships – proposing areas in which **Member States** and **Local Authorities** (LA) can effectively and efficiently be involved in 2ZERO activities.
- **Proposed areas** to be discussed: real life testing sites, infrastructures, innovation hubs, centres of excellence etc. that could contribute to industry partnerships; big demonstration project, deployment; Providing sequential funding and create synergies with CEF and other funds; Collaboration on enabling framework conditions: regulatory action, interoperability, infrastructure, standardisation, repositories, etc.
- **Way of involvement** needs to be clarified when partnership will be established.

3.7 European Partnership on Cooperative, Connected and Automated Mobility (CCAM)

3.7.1 Summary

The main objective of the European Partnership on CCAM will be to accelerate the implementation of innovative connected, cooperative and automated mobility (CCAM) technologies and services. By bringing together the actors of the complex cross-sectoral value chain, it will develop and implement a shared, coherent and long-term European R&I agenda. By 2030, the partnership will have demonstrated inclusive, user-oriented and well-integrated mobility concepts, enabled by CCAM, with increased safety and a reduced carbon footprint. It will make Europe a world leader in the deployment of connected and automated mobility for people and goods.

In order to achieve these objectives and increase policy impacts, the CCAM Partnership has to take a systematic and transformational approach. This means that it has to coordinate actions with other relevant R&I initiatives dealing with key digital enabling technologies (e.g. next generation internet, advanced computing, AI and robotics) and solutions for decarbonisation, including developing infrastructure, services and systems for smart and sustainable mobility, communities and cities.

There is also a need to consider how to better achieve the objectives and maximise impacts of the CCAM Partnership through engagement with other initiatives and parties. At the EU level there are a number of R&I initiatives and funding programmes beyond the Framework Programme that offer wider synergies especially in relation to digital, transport and energy areas.

This document provides an overview of foreseen collaborations with other European Partnerships of Horizon Europe and synergies with other programmes at European, national, and regional level. Forms of collaboration can include coordination of dissemination actions and communication of aligned research priorities for mobility and results to policy makers or joint R&I Actions.

3.7.2 Coherence and coordination among partnerships

Table 54 Overview of Partnerships identified in xxx proposal

Horizon Europe structure	Candidate partnerships	Areas for cooperation
Digital, Industry and Space	Key digital technologies - KDT	• Reliable and precise sensor systems for environment detection and localization as well as machine learning and AI-based cognition methods. • Performance requirements of a sensor suite in terms of resolution, contrast and speed should be defined for relevant ODDs within CCAM. • Sensors, communication devices, actuators, controllers and algorithms or AI, their adaption to the requirements of e.g. a certain automation level or ODD, is part of CCAM. Testing and validation of such control systems (methods, tools, platforms), and particularly their self-learning parts, in view of relevant traffic scenarios, whether in real world or virtually, is a matter of CCAM.

		• Hard- and software-based methods of shielding, tamper proofing and encryption ensuring cybersecurity between vehicles, the digital infrastructure and communication networks is part of KDT and adapted to and applied to the specific usecase of CCAM is part of the CCAM Partnership. • Active safety and assistance systems supporting CCAM with sensors, actuators and controls are to be developed within KDT. Reliability levels of the components required for accident avoidance should be assessed in CCAM with a feedback loop to KDT.
	Smart networks and services - SNS	• Specifications, requirements and enabling technologies for the digital infrastructure to enable safe and secure operation of CCAM systems. • Mutual exchange and alignment on interfaces, service and business requirement definition • Secure effective connectivity needed for CCAM and build further on SNS results to allow for early adoption of new connectivity innovations. Jointly define robustness and redundancy, availability of communication channels and a minimum quality of service for Cloud Edge computing. • Define clear targets and roles for stakeholders engaging in the mobility system and fleet and traffic management with secure communication, in contextual application. Creating a (cyber) secure overall system with distributed tasks and shared responsibilities enabling (real time) data handling, data sharing, including cross border issues and smart protocols related to connectivity. • Exchange of demonstration activities, on both CCAM technologies and SNS technologies, best-practice information and collecting and interpreting results. • Joint validation scenarios based on real world scenarios for CCAM systems relying on connectivity for safety-critical functions, the connectivity context is to be included in validation methodologies
	AI, data and robotics - AI	• Machine Decision Making: autonomous actions by an AI-based system; hybrid decision making, combining human efforts

		and AI technologies as well as the physical and human interaction. • Applying AI for situational awareness and predictive perception, and eventually also actuation. Improving integration of the perception systems with AI and decision making control systems in the vehicles. • Develop explainable concepts, techniques and models of Artificial Intelligence for CCAM. • Data quality, combining data from multiple sources, privacy and protection and interaction on handling, sharing and storing data in a harmonized approach and in a multi-sectoral alignment to foster uptake. •
	High Performance Computing - HPC	•
	Photonics21	• Sufficiently performing photonics sensors are one of the main roadblocks that prevent Europe from deploying fully automated and connected vehicles at scale. Even though radar technologies continue to evolve, with improvements made in radar technologies with multiple emitters and receivers (MIMO), improving resolution and higher frequencies, there are limits in physics that prevent radar from achieving the same resolution as a photonic sensor.
Climate, energy and mobility	2ZERO	• Develop and demonstrate innovative mobility services that combine automation and zero emission technologies • Fleet and traffic management including environmental aspects such as emissions reduction • Environmental impact analysis: potential effects of CCAM solutions should be integrated within the climate-neutrality objective pursued by the 2Zero Partnership. • Vehicle technologies for emissions reduction leveraging CCAM technologies
	Driving Urban Transitions - DUT –	• CCAM-related infrastructure demands, solutions and their impacts on other urban infrastructures • Fleet and traffic management concepts developed in CCAM could be picked up in DUT to investigate relationships with other mobility modes

		• Aspects of governance and management, urban planning issues, user behaviour and societal needs • Large scale demonstrations on urban logistics or last-mile delivery could be connected • Opportunities to assess CCAM solutions and approaches in a wider context, eg, for other sectors and stakeholder groups • Knowledge sharing and learning to support capacity building and joint dissemination and outreach
	Zero-emission waterborne transport	•
	Transforming Europe`s rail system	• Exchange of findings and cooperation in common research fields including Artificial Intelligence, Data Storage and sharing, System architecture, Fleet and (mixed) Traffic Management, Cyber-Security, Environment Perception, Robustness and resilience, Physical and digital infrastructure and Validation • Cooperation and possible alignment of methodology for the approach to evaluate societal aspects and user needs • Cooperation and joint large-scale demonstrations for trams and LRT • Joined dissemination to reach a wider interested public •
	Clean Aviation	• Fostering the exchange and transfer of knowledge on AI, digitisation, safety and social impact • Joint demonstration activities on integrated Urban Mobility Management and Airfield Operations.
	European industrial battery value chain	• Batteries as an enabler - no direct cooperation
Other clusters		-

3.7.3 Synergies with other Programmes

Table 55 Overview of synergies identified in the xxx proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Connecting Europe Facility (CEF)	• Pilot deployment and deployment of technologically mature CCAM systems and services (especially TRL 8 & 9) • Program targets deployment of relevant infrastructure and assets in supporting high performing, sustainable and efficiently interconnected trans-European networks in the fields of transport, energy and digital services. • Program synergies will be explored in a similar manner like R&D and FOTs in C-ITS (FPs6&7) and handover to CEF from 2015 onwards (C-Roads flagship initiative)	• Main instrument: CEF 2 Digital: supporting a.o. • uninterrupted coverage with 5G systems of all major transport paths, including the trans-European transport networks; • implementing digital connectivity infrastructures related to transport cross-border projects and/or supporting operational digital platforms directly associated to transport infrastructures; • CEF 2 regulation lists sections on TEN-T corridors foreseen for CCAM pilot deployment
ESIF, IPCEI, national or regional programmes	• The Member States and industry may define an Important Project of Common European Interest (IPCEI) for CCAM. However, Member States and industry should define which topics and priorities should be addressed by this IPCEI, in order to produce concrete and useful deliverables that could accelerate the deployment. • environmental and energy efficiency issues of more sustainable urban and peri-urban mobility, reduction of CO2 emissions and urban pollution • issues of development and territorial balance, • societal challenge: develop new uses (shared vehicles, from ownership to use)	• This instrument could facilitate Member States, EU and industry to co-finance at a large scale comprehensive project or project portfolio to develop, deploy and realize CCAM in Europe. Combining (digital) infrastructure, deployment, innovation and series or pilot production. • sustainability issues throughout the vehicle value chain: recycling of batteries and their non-renewable components (rare earths). • development of multi-modal transportation (hubs), safe pedestrian and bicycle paths between neighborhoods • the challenge of optimizing the use of

	• a strategic challenge at the global and European level in a context of rising fuel prices and stricter regulations on CO2 emissions • contribute to the scientific and technical knowledge enabling the raising of existing locks. • national programmes require simulation, technological development, system validation and large scale deplyement. • the CCAM programme will enable us to validate this work • Feed the future public policies/regulations on CCAM through R&I work (identify existing gaps) • Acceptance of the public: information and better anticipation of the deployment (actions / calendar .	public space and adapting infrastructures: dedicated ways, new-generation parking for automated vehicles, "service stations and charging stations", other interconnected urban furniture, and the network's capacity to supply the necessary energy".
TEN-T	• TEN-T, its Core Network Corridors and the urban nodes provide the geographical scope for pilot deployment and deployment of technologically mature CCAM systems and services • CCAM development is one of the drivers behind TEN-T (Guidelines) revision • As CCAM piloting is foreseen along Core Network Corridors, CNCs have to be informed about technological maturity of CCAM as a means to meet policy goads and improve corridor performance	• Awareness and capacity building from CCAM Partnership management towards a.o.: • CCAM impacts have to reflected and considered in the process of TEN-T revision • Awareness of what CCAM offers in TEN-T Core Network Corridor Fora (e.g. contribution to Ideas Labs) • Policy process complementing the take-up of CCAM partnership results in CEF towards deployment
Invest-EU		

EIB		
CEDR Transnational Research Program	• The CEDR Transnational Research Programme (TRP) pools research funding from CEDR members to fund transnational research projects on topics of shared interest to European road authorities. It operates through a series of annual transnational calls for proposals such as CCAM related topics. • Program has a sector specific focus which can add synergies by complementing the cross-sector research of the CCAM partnership by studying topics of sector-specific interest to National Road Authorities and infrastructure managers. • Example: Results from ongoing research on automation impact on NRAs have fuelled debate in CCAM Platform (Physical and digital infrastructure attributes).	• Scope: Emerging technologies, Vehicle-infrastructure integration, esp. Physical and Digital Infrastructure, Connectivity and Cooperative ITS, Fleet and Traffic Management, Test sites and Living Labs, Large-scale demonstrations, Impact assessment, Knowledge management • Means: Exchange on program management level between CEDR PEBs and CCAM Partnership • Spill-over effects of research providers

3.8 European Partnership on Zero-emission Waterborne Transport

3.8.1 Summary

The Partnership aims to radically transform waterborne transport, by developing knowledge, designs, systems, equipment and technologies and by demonstrating solutions that will realize zero-emission waterborne transport for all main ship types and services;
This partnership contributes to the European Green Deal objectives, and implementation of the EU long term decarbonisation strategy. It is expected to stimulate modal shift towards waterborne transport to reduce total transport GHG emissions and achieve air and water pollution goals, improve quality of the environment and benefit human health.
Implementation of economically viable European new technologies and concepts regarding zero-emission waterborne transport, will improve European global competitiveness in terms of innovative technological leadership and solutions in green ship technologies, regaining lost markets.

3.8.2 Coherence and coordination among partnerships

Table 56 Overview of other Partnerships identified in the Zero-emission waterborne transport proposal

Horizon Europe structure	Candidate partnerships	Areas for collaboration	Mentioned in other proposal
Climate, energy and mobility	Connected and Automated Mobility (CCAM)	• Improvements of Efficiency of shipping achieved through efficiency improvement of the of wider multimodal mobility system as a whole (interfaces between modes) •	No
	European industrial battery value chain	• *European industrial battery value chain* focusses on specialist battery technology, material and manufacturing (incl. battery safety) for various end users • *Zero-emission waterborne transport* partnership will address integration of a battery within the ship systems and enable pre-deployment in maritime and inland applications	Yes
	Clean Hydrogen	• Clean Hydrogen focuses on green hydrogen fuel production, storage and supply, as well as some demand side technologies • While waterborne partnership will address technology integration, implementation and validation, for both maritime and inland shipping. This includes bunkering and onboard storage of non-hydrogen alternative fuels	Yes
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Climate neutral, sustainable and productive Blue economy	• Cooperation in context of impact of shipping on marine and inland waters environment (Climate neutral shipping)	Yes

		•	
	Rescuing biodiversity to safeguard life on Earth	• Invasive species from ballast water processes	No

Notes for further development:

Links with other relevant partnerships are well mapped. Three candidates from cluster 5 and one from cluster 6 are addressed. The candidate partnership seeks active synergies with *Clean hydrogen* and *European industrial battery value chain* for applications for waterborne transport, including their demonstration. *Connected and Automated Driving* is highlighted as relevant for improvement of energy efficiency of transport through improving interfaces between modes, and *Blue Economy* in relation to the impact of shipping to the marine and inland waters environment. The other proposals also mention the *Zero-emission waterborne transport* as important for collaboration, except *Connected and Automated Mobility*. Little information is provided on collaboration with cluster 4 partnerships, although the proposal suggest that digital technologies is important for greening.

Key issues to address:

- However, please clarify the opportunities to collaborate (e.g. is it related to upstream or downstream activities...)..
- Also, note that digitalisation aspects need to be explored in collaboration with cluster 4 and its partnerships.

3.8.3 Synergies with other Programmes

Table 57 Overview of synergies identified in the Zero-emission waterborne transport proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Innovation Fund	• The Innovation Fund focuses on among others on innovative low-carbon technologies	
Modernisation Fund	• Support for modernisation of energy systems and transition in 10 beneficiary Member States;	
Connecting Europe Facility (CEF)	• Reduce the environmental impact of transport, enhance energy efficiency and increase safety	
CEF/ Transport Blending Facility/ InvestEU	• It is currently foreseen, that via InvestEU, the CEF Transport Blending Facility will co-finance greening of maritime and inland waterway transport fleets in the period 2021 - 2027;	
ERDF	• Not specified.	
EIB Green Shipping Guarantee	• Improve the environmental performance of vessels in terms of reducing the emission of pollutants as well as increasing fuel efficiency	
LIFE	• Not specified.	
Other initiatives in Horizon Europe		

European Innovation Council (EIC)	• Not specified.	
Mission "Healthy Oceans, Seas, Coastal and Inland Waters."	• Impact of ships on water environment	
Mission "Climate Neutral and Smart Cities"	• Impact of ships on the environment, specifically for cities with a port	
Mission "Adaptation to Climate Change including Societal Transformation"	• The mission will not focus on greening of (waterborne) transport, but the results of both the Partnership as well as the Mission might cross-fertilize each other	

3.9 European industrial battery value chain

3.9.1 Summary

The Batteries partnership aims at the development of a world-class European R&I ecosystem on batteries for stationary and mobile applications, with a view towards European industrial leadership. It brings together all Horizon Europe activities to develop a coherent strategic programme, in cooperation with industrial players and research community, making a substantial contribution to fulfilling the Paris Agreement, and enhance the competitiveness of current and emerging European industries along the battery value chain. It will cover the entire value chain, from materials, electrochemistry, cells design (with a view to re-use, self-repair and recycling), cell manufacturing for all (notably, **mobile and stationary**) energy storage applications.

3.9.2 Coherence and coordination among partnerships

Table 58 Overview of Partnerships identified in the European industrial battery value chain proposal

Horizon Europe structure	Candidate partnerships	Areas for collaboration	Mentioned in other proposal
Digital, Industry and Space	Key Digital Technologies	• Sensors, electronic components, …	Yes
	Made in Europe	• Cells, Modules, Packs Manufacturing / dismantling	Yes
	AI, Data and Robotics	• Not specified	No
Climate, energy and mobility	2Zero	• Applications	Yes
	Clean Aviation		Yes
	Zero-emission waterborne transport		Yes
	Carbon Neutral and Circular Industry	• Materials manufacturing and recycling, Circularity	No
	Clean Hydrogen	• Hybrid solutions, …	Yes
	Clean Energy Transition	• Grid flexibility, other Set Plan actions	Yes
Other Pillars	EIT InnoEnergy EIT Manufacturing EIT Raw materials	• Lab-to market acceleration • Technology transfer • Market uptake	n/a

Notes for further development:

Many other partnership candidates are mentioned but the purpose and mode of collaboration is not sufficiently elaborated. Mentioned other partnerships are in clusters 4 and 5 and Pillar III.

Key issues to address:

- To **elaborate further** the **focus and form of collaboration**, including to **prioritise** those that are essential for the achievement of objectives.
- Maybe also *smart networks and services* are especially related to the role of batteries in local energy systems.

3.9.3 Synergies with other Programmes

Table 59 Overview of synergies identified in the European industrial battery value chain proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
IPCEI	▪	
	▪	
	▪	
Other initiatives in Horizon Europe		
▪	▪	

Notes for further development:

- The proposal mentions coherence with IPCEI that would allow national funding for strategic battery technologies & deployment, national R&I programmes, S3 inter-regional partnership on battery materials. So far this part is not further specified.
- CEF/structural funds for Deployment of electric storage technology across the grid might be also relevant (Electric charging infrastructure).
- Innovation fund: Demonstration projects using green technologies, integration of renewable energy through storage.

3.10 European Partnership – Driving urban transitions to a sustainable future (DUT)

3.10.1 Summary

Our future relies on tackling complex grand challenges here and now, many of which must be addressed within cities and by urban communities. The DUT partnership addresses this complex set of urban challenges with an integrated approach to offer decision makers in municipalities, companies and society the means to act and enable the necessary urban transformations. The partnership will create a portfolio of measures and critical mass beyond joint calls to enhance its impact, build capacities in all stakeholder groups and contribute to the European mission on climate-neutral cities.

3.10.2 Coherence and coordination among partnerships

Table 60 Overview of Partnerships identified in the DUT proposal

Horizon Europe structure	Candidate partnerships	Areas for collaboration	Mentioned in other proposal
Digital, Industry and Space	Smart Networks and Services		No
Climate, energy and mobility	2ZERO	• aspects related to integration of new solutions in sustainable mobility systems, impacts on land use, public procurement and new business models, new services, behaviour and societal impacts, consequences for circular economy and energy systems, etc.	No
	Cooperative, Connected and Automated Mobility (CCAM)	• analysis and validation of new mobility models, considering implications for business, governance and citizens, building capacities in policy, city administration and society to assess the potentials and identify further R&I needs.	No
	Zero-emission Waterborne Transport	•	No
	Clean Energy Transition	• application of energy technologies and systems into the urban context as well as the role regional energy systems play in the provision of renewable energies for urban areas	Yes
	Built4People	• The construction and energy management of buildings play a crucial role in the energy transitions and the efforts taken by the DUT partnership on Positive Energy Districts and Neigbourhoods. On the other hand, new technologies, materials and solutions for construction contribute to	No

		improving circularity and resource efficiency.	
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Rescuing biodiversity to safeguard life on Earth	• Without knowledge-based planning and management of land-use and natural resources, the pressure brought on by rapid urbanization might lead to significant conflicts in urban areas, risking reduced biodiversity and negative consequences for human wellbeing, economy and social equity. •	Yes
	Safe and Sustainable Food System for People, Planet & Climate	• Shifting urban food consumption towards more sustainable resources, eg food from the ocean to relieve land pressures	No proposal available
	Water4All: Water security for the planet	• Waste water treatment • Water supply from desalinisation	Yes
	Climate neutral, sustainable and productive Blue economy	• Ports and coastal communities	No
	Circular biobased Europe	• Circularity in urban industry systems	No

Notes for further development:
Links and collaboration opportunities with other partnerships are described but require further deepening – especially because for this candidate there are a lot of possibilities for collaboration, which requires good planning. Please take note that several related partnerships are industry-driven (*Built4People, Connected and Automated Driving* …) whilst others (*Safe and Sustainable Food System for People, Planet & Climate, Clean Energy Transition*) are partnerships with public sector.

The DUT partnership mentions several times that one successful measure are urban living labs. This instrument might be used to link to other partnerships (that are mentioned above, especially *Clean Energy Transition*) and work as an experimentation and deployment activity for related fields.

KICs are not mentioned in the proposal, but EIT Urban Mobility might be relevant for synergies regarding urban transition.

Clean Energy Transition sees "a clear interface with *DUT* when it comes to the application of energy technologies and systems into the urban context". It emphasises the Positive Energy Districts (PED) sub-programme within *DUT*. *Rescuing biodiversity to safeguard life on Earth suggests to* "evaluate issues of common interest regarding urban biodiversity and Nature-based Solutions" with *DUT*.

Key issues to address:
- To **elaborate further** the **focus and form of collaboration**, including to **prioritise** those that are essential for the achievement of objectives.
- Special focus in collaboration with *Clean Energy Transition* should be elaborated.
- Engage with *Carbon Neutral and Circular Industry.*

3.10.3 Synergies with other Programmes

Table 61 Overview of synergies identified in the DUT proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
	▪	
Other initiatives in Horizon Europe		
▪	▪	

Notes for further development:

Synergies with other programmes are not described so far. Whilst it is too early to describe the link with mission, it would be good to explain the mechanism to ensure coherence at later stage. Missions "Climate-Neutral and Smart Cities" and "Adaptation to Climate Change including Societal Transformation" are particularly relevant.

Key issues to address:

- Synergies with ERDF (they mention Living Labs and innovation Labs)
- Financial instruments to finance uptake of solutions in cities - InvestEU, EIB
- There are ample of programmes and initiatives addressing cities, e.g. Positive Energy Districts, Green City Accord, the European Green Capital Cities – seek coherence and complementarities

3.11 European Partnership for Clean Energy Transition (CETP)

3.11.1 Summary

The Clean Energy Transition Partnership (CETP) is a transformative Research and Innovation Programme across Europe boosting and accelerating energy transition in all its dimensions. It enables energy transition from regional to national and global level, co-transformed by industry, public organisations, research and citizens organisations to make Europe frontrunner in energy innovation and implementation by becoming the first climate-neutral continent.

3.11.2 Coherence and coordination among partnerships

Table 62 Overview of Partnerships identified in the Clean Energy Transition proposal

Horizon Europe structure	Candidate partnerships	Areas for collaboration	Mentioned in other proposal
Digital, Industry and Space	Smart Networks and Services	• Services and networks on smart grids • *CETP* will focus on the interconnections between the IT and the energy sectors.	No
	Clean Steel - Low Carbon Steelmaking	• Carbon capture and storage, energy storage • Steel industry is one of many important consumers of energy services • Connections between CCS applications in the industry and energy sectors	No
	Carbon Neutral and Circular Industry	• CO2 utilisation • Circular flows in the energy sector • Includes end of life, second-life and recyclability management of components and subsystems of the energy system	Yes
Climate, energy and mobility	Clean Hydrogen	• Using renewable energy for clean hydrogen production • Using hydrogen as an energy vector to increase system flexibility in smart grids	No
	Built4People	• Energy efficiency buildings/districts • System related aspects of the built environment and the energy sector	Yes
	European industrial battery value chain	• Increasing grid flexibility • System related aspects of batteries related to the energy system and the different services	Yes
	DUT	• Positive energy blocks and districts, integration of energy systems in urban systems • Application of energy technologies and systems into the urban context	Yes (SET Plan mentioned)

Food, Bio economy, Natural Resources, Agriculture and Environment	Circular bio-based Europe	• Bioenergy • Use of bio-based fuels and waste in the energy sector and bioenergy with carbon capture and storage.	No
	Climate neutral, sustainable and productive Blue Economy	• Marine renewables (offshore energy, ocean energy)	No
Other Pillars	EIT Climate-KIC EIT InnoEnergy	• Direct overlap regarding supporting innovations for a clean energy transition	n/a

Notes for further development:

Excellent and detailed description of possible collaborations with other partnerships. Collaborations are foreseen with partnerships in clusters 4, 5 and 6 + 2 KICs from Pillar III. *Built4People* sees coherence due to the "need to greatly increase the rate at which existing buildings are renovated to use less energy". Other proposals are not very specific on coherence with *Clean Energy Transition*.

3.11.3 Synergies with other Programmes

Table 63 Overview of synergies identified in the Clean Energy Transition proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Innovation Fund	• Bringing the new energy technologies to the market.	
Invest-EU	• Not specified.	
ERDF	• Regions are having an important role in the deployment of new energy technologies and should be involved in the clean energy transition	
LIFE	• Not specified.	
Other initiatives in Horizon Europe		
	• Not specified.	

Notes for further development:

The proposal mentions several other European financial programmes as well as cooperation with activities under Horizon Europe (Missions, Partnership Programmes, Clusters and other EU Programmes).

Key issues to address:

- Possible synergies with these other programmes are not elaborated, please develop how other Union programmes, Cohesion funds etc. can be used to exploit potential synergies, and what should be done in practice.
- Please elaborate on other relevant Union programmes.
- The transformative change is limited to a better collaboration with national research funders (and policy makers), it is not clear how the ambition to "build a European community for energy transition" can be fulfilled.

- Develop further how to ensure the complementarity of activities and help avoid unnecessary duplications with other relevant initiatives of Horizon Europe, and other related EU initiatives.

4 Food, Bioeconomy, Natural Resources, Agriculture and Environment – Cluster 6

Table 64 Cluster 6 - Coherence and coordination among partnerships

		Cluster 1								Cluster 4									Cluster 5										Cluster 6								Other Pillars										
		EU-Africa Global Health	Innovative Health	Chemical Risk Assessment	ERA Health	Health and Care Systems Transformation	Personalised Medicine	Rare Diseases	One Health / AMR	HPC	Key Digital Technologies	Smart Networks and Services	AI, Data and Robotics	Photonics	Clean Steel	Metrology	Made in Europe	Carbon Neutral and Circular Industry	Globally competitive Space Systems	Transforming Europe's rail system	Integrated Air Traffic Management	Clean Aviation	Clean Hydrogen	Built4People	Towards zero-emission road transport	CCCAM	Zero-emission waterborne transport	European industrial battery value chain	DUT	Clean Energy Transition	Agroecology living labs	Animal Health and Welfare	Agriculture of data	Rescuing biodiversity to safeguard life on Earth	Blue Economy	Safe and Sustainable Food System	Circular bio-based Europe	Water4All	Innovative SMEs	European Science Cloud	EIT Climate-KIC	EIT InnoEnergy	EIT Digital-	EIT Health-	EIT Food	EIT Manufacturing	EIT Raw Materials	EIT Urban Mobility	KIC Cultural and Creative Industries
Cluster 6	Agroecology living labs											o																			x	x	x		x	x	x		o					o				
	Animal health								x																						x		o	x	x	x			o				o				
	Agriculture of Data									o	o		x						x												x		x		x				o			o		o				
	Rescuing Biodiversity			x																							o		x		x	o	x	x	x	x	x		o	o								
	Blue Economy															o			o								x			o		x		x		x		x		o	o	o			o		o		
	Food System			x												o													x		x	x	x	x	x		x	x		o					x				
	Circular bio-based Europe			x												0		x				o	o	x	o		o				x	x		x		x		x		o	o	o				o	x		
	Water4All			x												o			o								x		x		x			x	x	x	x			o								

Both mentioned
Only left column
Partnership indicates coherence
Suggested by COM services
x Priority
o Inform

Table 65 Cluster 6 - Synergies with other Programmes

	Cluster 6							
	Accelerating farming systems	Animal health	Agriculture	Rescuing biodiversity	Blue Economy	Safe and Sustainable Food System	Circular bio-based Europe	Water4All
Other programmes and initatives								
Trans-European Transport Network (TEN-T)								
Connecting Europe Facility (CEF)								
Digital Europe Programme (DEP)						❍		
InvestEU						●	●	
Structural Funds (ERDF/Cohesion)	❍	❍		❍	●	●	●	●
Strategic Forum for Important Projects of Common European Interest (IPCEI)								
Important Project of Common European Interest (IPCEI)								
ETS Innovation Fund						❍		
Innovation Fund						❍		
Modernisation Fund								
Just Transition Mechanism						❍		
European Investment Bank						●		
Circular Bioeconomy Thematic Investment Programme						●		
Programme for Environment & Climate Action (LIFE)				●	●		●	●
Copernicus			❍		●			●
GEOSS					❍			❍
European Innovation Council						●		
Erasmus Plus								
National Energy and Climate Change Plans					❍			
Research Fund for Coal and Steel								
Covenant of Mayors						●		
European Space Agency					●	❍		●
Standardisation Bodies								
European Maritime and Fisheries Fund				❍	●		❍	
EIP Agri						●	❍	
Common Agricultural Policy					●			
HE Mission Areas								
Adaptation to Climate Change, including Societal Transformation					●		●	●
Climate-neutral and Smart Cities					●	❍	●	●
Cancer						❍		
Healthy Oceans, Seas, Coastal and Inland Waters					●	❍	●	●
Soil Health and Food	❍				●	❍	●	●

4.1 European Partnership Accelerating farming systems transition: agro-ecology living labs & research infrastructures

4.1.1 Summary

The partnership aims to accelerate the transition towards sustainable, climate and ecosystem-friendly farming practices by enabling to better grasp short to long-term agroecological processes from farm to landscape levels, by boosting place-based innovation in co-creative environments ensuring farmers and other key stakeholders' engagement (including consumers) and by improving the flow and uptake of knowledge and innovations on agroecology across Europe.

4.1.2 Coherence and coordination among partnerships

Table 66 Overview of Partnerships identified in Agroecology living labs proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Rescuing biodiversity to safeguard life on Earth'	Bilateral - Cooperation on measuring biodiversity in agroecosystems, agroecological practices for the preservation of biodiversity, monitoring of pollinators	Yes
	Safe and Sustainable Food Systems	Bilateral- Promoting agroecology/ organic products in the context of a dietary shift. Food safety of agroecology products.	Yes
	Agriculture of data	Bilateral - ICT and environment data as enabler of agroecology practices and as useful to describe status of agroecosystems	Yes
	Animal Health and Welfare	Bilaterial - agroecology as tool for reduced use of antimicrobials, increased animal welfare as a way to enhance health, safety of animal effluents used as fertilisers	No
	Water4All	Bilateral- Links with demonstration sites and water-oriented living labs working on agriculture	Yes
	Circular bio-based Europe	Bilaterial - agroecology as a system that ensures circularity, resource efficiency and recycling in agriculture	No
Other Pillars	Pillar I- Research infrastructures	The AELL partnership will build a network of living labs and research infrastructures in the field of agroecosystems and agroecology. Existing RIs will be asked how they can contribute with service delivery to the research done in the LL.	N/A
	Pillar III- Innovation ecosystems	Living labs in agroecology shall contribute to strengthening the local/regional innovation ecosystem around agriculture and food.	N/A

4.1.3 Synergies with other Programmes

Table 67 Overview of synergies identified in the Agroecology living labs proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Future CAP/EAFRD	▪ Building synergies with innovation support under the CAP ▪ Contribute to the development of agricultural knowledge and innovation systems as foreseen under CAP strategic plans	▪ Using EAFRD funded innovation projects (operational groups) in the living labs at local level ▪ Using the European Innovation partnership for agriculture productivity and sustainability (EIP-AGRI) for knowledge multiplier for the partnership.
ERDF	▪ Building synergies with innovation support provided under Policy objective 1 "Smarter Europe", policy objective 2 "Greener Europe" and policy objective 5 "Europe closer to citizens".	▪ Possible co-funding of living lab activities at local level.
LIFE	▪ There could be joint actions around the living labs and ecoinnovations around agroecological products in specific localities.	▪ To be discussed.
Copernicus	▪ Copernicus data could be valorised to assess the status of agroecosystems in the various localities	▪ To be discussed in relation with "Agriculture of data".
Other initiatives in Horizon Europe		
▪ Mission Soil health and food	▪ agroecology as a tool to improve soil health and increase carbon sequestration in soils	▪ Coordination of programming and exchange of results/knowledge
▪ Mission climate adaptation	▪ Depending on the scope of the mission, the partnership could contribute with agroecology as way to adapt to climate change in specific geoclimatic regions.	▪ To be discussed.
▪ Mission climate-neutral and smart cities	▪ This partnership could contribute to climate-neutrality of food supplies to cities	▪ To be discussed.

4.2 European Partnership for Animal Health and Welfare (PAH)

4.2.1 Summary

Through a coordinated public-public and public-private collaboration of actors, the European Partnership "Animal Health & Welfare" will help reduce socio-economic and environmental impact of animal infectious diseases, improve animal welfare, protect the economic viability of farms and produce safe food. Additionally, since many animal infectious diseases and resistant microorganisms are known to cross the borders between animals, humans and the environment (for instance via wildlife vectors and contributing to antimicrobial resistance), a successful EU Partnership on animal health and welfare will also be beneficial for public health. The partnership will foster generation of key knowledge, reinforce preparedness against upcoming and emerging threats for both animals and humans, promote and strengthen animal welfare, generate innovative methodologies and products, and support evidenced based policy making.Coherence and coordination among partnerships

Table 68 Overview of Partnerships identified in xxx proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health	Chemical Risk Assessment	• Bioaccumulation of toxins in animals	No
	Innovative Health	• Coordination may be useful to look for synergies between the medical and the veterinary sectors in specific domains e.g. infectious animal diseases, including zoonoses; technologies, animal models) • Biodiscovery and biotechnology from marine organisms for drugs for animal and human diseases	Yes
	One Health AMR	• While the One Health approach is relevant for epidemiology, surveillance, detection, possibly stewardship of AMR, measures to fight against AMR in the animal domain, aimed at reducing the (need to) use of AMs, and replacing AMs, will be tackled in PAHW.	No
Climate, energy and mobility	Zero-emission Waterborne Transport	• Effects of waterborne transport in animal health (marine pollution, underwater noise, collision with cetaceans)	No
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Climate neutral, sustainable and productive Blue Economy	• Healthy animals and safe food • Coordination will take place if animal health and welfare of aquatic animals is included in the SRIA/roadmap of PAHW (s planned so far)	No

	Safe and Sustainable Food Systems	• PAHW intends to address food safety hazards at primary production. Coordination with EU Partnership SSFS will depend on the extent to which this partnership will address microbiological food safety. • Healthy animals and safe food	
	Circular biobased Europe	• Biobased solutions for eg bio plastics	No
Other Pillars	EIT Food	• More sustainable food from the ocean, alleviating pressures on land	No
	Pillar I- Research infrastructures	• PAHW partnership will coordinate with relevant existing RIs or their possible successors (e.g. ELIXIR, VETBIONET, INFRAVEC2), and see how they can contribute..	N/A
	Pillar III- Innovation ecosystems	• To be explored. PAHW intends to contribute to the development of innovative (animal health) products and services.	N/A

4.2.2 Synergies with other Programmes

Table 69 Overview of synergies identified in the xxx proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
EMFF	▪ Fish health	
Digital Europe Programme	▪ Wherever large-scale deployment of products and services piloted in PAHW would be envisioned	
European Investment Bank	▪ providing connections to finance	
European Structural and Investment Funds	▪ providing connections to finance	
Other initiatives in Horizon Europe		
▪	▪	

4.3 Agriculture of Data (European Partnership on environmental observations for sustainable EU-agriculture)

4.3.1 Summary

The vision of this partnership is to support sustainable agriculture in the EU as well as policy monitoring and implementation, by using the possibilities current digital and data technologies in environmental observation offer.
Generating EU-wide data sets and information through combining geospatial and EO datasets and employing data technologies to provide solutions to the agricultural sector allowing for more efficient, environmentally friendly, and profitable production and strengthen monitoring capacities across policy fields.

4.3.2 Coherence and coordination among partnerships

Table 70 Overview of Partnerships identified in Agriculture of Data proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Digital, Industry and Space	Data, AI and robotics	Uptake of technological development in the partnership	Tbc
	HPC	Uptake of technological development in the partnership, especially with a focus of upscaling results	Tbc
	Globally competitive Space Systems	Exchange on knowledge and results	Tbc
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Agro-ecology living labs	Exchange of data between micro and macro level, e.g. for validation purposes	Tbc
Other Pillars	EIT Digital	To be explored	tbc

4.3.3 Synergies with other Programmes

Table 71 Overview of synergies identified in the Agriculture of Data proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Digital Europe Programme	▪ Links to Common Data Spaces, particularly the Agriculture Data Spaces, and Green4EU Data Space: Partnership could benefit from the data infrastructure and subsequently accelerate its use	DEP Strategic orientation is under preparation; partnership is likely to be mentioned
Copernicus, GEO/GEOSS, ESA	▪ Several interlinks at technical and programmatic level; details to be specified ▪ Build on experiences from ERA-Planet (current ERA-NET on Earth observation)	Key persons from the programmes will have a stake in the further development of the partnership to achieve best synergies Exchange of data and information Follow-up on ERA-NET Planet (national initiative)
Future CAP/EAFRD	▪ Supporting CAP objective of modernisation and simplification	Using the European Innovation partnership for

	the CAP, as it regards CAP implementation. ▪ Strengthening Monitoring capacities. ▪ Supporting the objective of modernizing the agricultural sector through digitalisation and modernisation	agriculture productivity and sustainability (EIP-AGRI) for knowledge multiplier for the partnership and identify practitioners needs. Synergies with the work of paying agencies to be explored.
Other initiatives in Horizon Europe		
▪ Mission Soil health and food	▪ Partnership could contribute to soil monitoring efforts and improved land management with a focus on increasing soil quality	Coordination of programming and exchange of results/knowledge
▪ Mission climate adaptation	▪ Depending on the scope of the mission, the partnership could contribute with information on EU-wide comparative analyses of biogeographical and agronomic condition trends needed to tailor climate adaptation strategies ▪ Depending on the scope the partnerships efforts to work towards a more sustainable EU agriculture could contribute to this mission	Tbc and still be discussed.
▪ Mission climate-neutral and smart cities	▪ Depending on the scope of the mission, the partnership could contribute with information on sub-urban areas, as land use information, e.g. to form wind channels, and N emissions can play a crucial role	Tbc and to be discussed.

Relevant decentralised EU agencies:

EEA and GSA/future EUSPA are relevant decentralised agencies for the partnership on Agriculture of Data

4.4 European Partnership Rescuing biodiversity to safeguard life on Earth

4.4.1 Summary

The European Partnership on biodiversity will implement an ambitious yet feasible programme to help ensure that, by 2030, nature in Europe is back on a path of recovery. To reach this overarching goal, the Biodiversity Partnership aims to develop more holistic, i.e. cross-sectorial, multidisciplinary and interdisciplinary R&I programmes, and a range of joint activities that will allow major scientific breakthroughs, reinforce the links between science and society, and provide highly relevant science-based knowledge to support action on the ground and policy-making.

4.4.2 Coherence and coordination among partnerships

Table 72 Overview of Partnerships identified in the Rescuing biodiversity to safeguard life on Earth proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Climate, energy and mobility	DUT	▪ Organise workshop(s) to evaluate issues of common interest regarding urban biodiversity and Nature-based Solutions, ▪ Organise regular meetings to exchange early on workplan development and identify possible synergies, ▪ Implement join activities as needed	Yes
	Zero emissions waterborne transport	▪ Invasive species	No
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Accelerating farming systems transition: agro-ecology living labs & research infrastructures	▪ Organise regular meetings to exchange early on workplan development and identify possible synergies ▪ Mobilize the results from the Partnership on biodiversity to inform the Agroecology Livings Labs ▪ Implement join activities as needed	No proposal received
	Circular bio-based economy	▪ Joint meetings to identify common interests between the two Partnerships and possible synergies ▪ Implement joint activities as appropriate	No proposal received
	Water4All: Water security for the planet	▪ Organise workshop(s) to evaluate issues of common interest between the two Partnerships and identify possible synergies ▪ Implement joint activities as appropriate	Yes
	Climate neutral sustainable and productive Blue Economy	▪ workshop(s) to identify shared priorities regarding marine biodiversity protection, sustainable management of	Yes (Partnerships related to Biodiversity

		marine (socio)ecosystems, and marine/coastal Nature-based Solutions; ▪ Implement joint activities as appropriate ▪ Marine biodiversity, Marine Protected Areas (MPAs)	are mentioned in general)

Notes for further development:

Links with other partnership candidates have been mapped. Most mentioned partnerships are in cluster 6.

Key issues to address:
Zero-emission waterborne transport partnership mentions biodiversity as a sub-goal, but no collaboration has been envisaged yet among the two partnerships.

4.4.3 Synergies with other Programmes

Table 73 Overview of synergies identified in the Rescuing biodiversity to safeguard life on Earth proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
LIFE	▪ For Working Areas #1 & 2	▪ Ongoing discussions ▪ Strengthening environment action on the ground
EMFF	▪ Marine biodiversity, Marine Protected Areas (MPAs)	▪
Regional and Cohesion Funds	▪	▪ a pilot action is currently done for Greece
JRC	▪ Knowledge Centre on Biodiversity ▪ Integration of MAES initiative	▪ Data and knowledge sharing ▪ Monitoring activities, natural capital
Other initiatives in Horizon Europe		
Intervention Area 2 – Cluster 6	▪ Complementarity and synergies in all Working Areas	▪ SRIA co-creation
Research Infrastructures	▪ Networking of RIs in MS	▪ ESFRI ▪ Collaboration with cofounded projects

Notes for further development:

- Broad range of partners, stakeholders, collaborators etc. has been identified. Full names, and explanations of their roles have been added in most cases. A list of acronyms will follow.
- The Appendixes provide a first concrete example of envisaged collaborations.

4.5 European Partnership for Climate neutral, sustainable and productive Blue Economy

4.5.1 Summary

The objective on this partnership is to sustainably unlock, demonstrate and harvest the potential of Europe's Oceans and Seas, to support the transition to a climate neutral and sustainable Blue Economy by 2050.

4.5.2 Coherence and coordination among partnerships

Table 74 Overview of Partnerships identified in the Blue Economy proposal

The proposal states that formalization of the collaboration with other programmes/schemes through regular activities will be considered, including invitations to participate in Advisory Board meetings, hosting joint events and policy related working group meetings.

Horizon Europe structure	Candidate partnerships/Missions	Areas for collaboration	Mentioned in other proposal
Digital, Industry and Space	Carbon Neutral and Circular Industry	• It is important that the Blue Economy industries and other stakeholders contribute the overall industrial goals and objectives. • Utilisation of marine resources and ocean energy may contribute particularly to the targets	No
Climate, energy and mobility	**Zero-emission waterborne transport**	• **Efficient maritime transport plays an essential role in growth and sustainable development as almost 90% of the EU's external freight trade is seaborne.**	**Yes**
	Clean Energy Transition	• Ocean energy technologies that currently being developed to exploit the potential of tides and waves as well as differences in temperature and salinity is an integrated part of the Blue Economy. • Ocean energy however requires marine and maritime space and impact the surrounding environment, thus sustainable practices is important to develop.	No

	Driving urban transitions to a sustainable future	• Strategic plan, co-designed by both Partnerships, identifying common priorities and explaining how to address these e.g. implementation of EAM (MPA with focus on the coast, mitigation of emissions of pollutants and litter from land). • Possibly implementation of a joint R&I programme on impacts of sea level rise on urban areas (subject to SRIA)	No
	Mission Climate Neutral and Smart Cities	• Coastal cities, as well as impact of climate change adaption. • Collaboration with coastal communities are of special interest for development of the R&I projects within the blue sector, e.g. tourism, sea and land based marine aquaculture and test environments	n.a.
	Mission on Adaptation to Climate Change	• mitigation and adaption to climate change is a pervasive issue that has to be integrated and further developed in coastal and ocean management	n.a.
Food, Bioeconomy, Natural Resourcesresources, Agriculture and Environment	***Mission Ocean***	• **Systemic solutions for the prevention, reduction, removal and mitigation of marine pollution, including plastics and noise** • **Transition to a circular and Blue Economy** • **Adaption to and mitigation of climate change in the ocean - Sustainable use and management of ocean resources** • **Protection of and mitigation for biodiversity** • **development of new materials, including biodegradable plastic**	**n.a.**

		substitutes, new feed and food • **Urban, coastal and maritime spatial planning** • **Ocean governance** • **Ocean economics applied to maritime activities**	
	Mission on Soil Health and Food;	• Soils provide a range of ecosystem services which are important for e.g. clean water, preventing pollution and eutrophication	n.a.
	Protecting and restoring biodiversity to safeguard life on Earth	• **marine biodiversity and marine protected areas are relevant for the Blue Economy and fundamental in the implementation of EAM.** • **Marine Protected Areas as a management approach for halting biodiversity loss, incl. analysis of successes and failures in relation with blue economic activities.** • **Nature-based solutions to protect coasts from erosion and sea level rise.** • **Eco-engineering solutions inspired by or mimicking nature for "blue-green" artificial marine structures.** • **Full implementation of the Ballast Water Management Convention in all European commercial ports.**	**Yes**
	Safe and Sustainable Food Systems for People, Planet & Climate	• **Food from the ocean** • **Role of ocean-based solutions in climate mitigation and adaptation** • **Implementation of EAM (biodiversity and human wellbeing)** **To be explored at a later stage given a proposed start in 2023/2024.**	**No**
	Water4All	• **hazardous substances, litter (including plastics),**	**Yes**

		eutrophication and bioremediation technologies • **Land sea interface** • **Management of waste products from desalination plants**	
	Circular Biobased Europe	• Promote synergies on topics such as the valorisation of aquatic ("blue") biomass.	No
Other Pillars	EIT Climate-KIC	• Funding to innovative start-ups relevant to the Blue Economy.	No

Notes for further development:

Links with other Partnerships are briefly mentioned but not specified. EIT Climate-KIC, as well as EIT Food, Raw Materials and InnoEnergy might be of relevance. Other partnerships do not mention this partnership.

Key issues to address:
- The proposal should elaborate coherence with other partnerships.
- Surely there are some synergy with Zero emission waterborne transport'. Also, Clean energy transition as it includes offshore energy (wind, wave, tidal). Maybe even 'space' the table below implies synergy with ESA.
- Especially multilateral collaboration regarding sustainability and water should be discussed.

4.5.3 Synergies with other Programmes

Table 75 Overview of synergies identified in the Blue Economy proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
European Maritime and Fisheries Fund Aquaculture Fund (2021-2027), which supports the coastal economy	• Demonstration projects in fields such as renewable energy, natural resource management	Not specified yet
Programme for Environment and Climate Action (LIFE),	• Demonstration projects in fields such as renewable energy, natural resource management	Not specified yet
European Structural and Investment Funds (ESIF), including European Territorial Cooperation, in particular the relevant INTERREG programmes		Not specified yet

Copernicus		Not specified yet
BlueInvest Fund	• dedicated to finance the innovative Blue Economy	Not specified yet

Notes for further development:

The proposal briefly mentions some of the EU programmes with synergies. This should be elaborated. Synergies with regional and national programmes are not discussed so far.

4.6 European Partnership for Safe and Sustainable Food System for People, Planet & Climate

4.6.1 Summary

The partnership will provide an overarching platform and process to underpin the needed transition to sustainable food systems to support and provide solutions to the Green Deal Farm to Fork Communication by connecting national/regional and European Research & Innovation programmes and food systems actors, to deliver co-benefits for nutrition, climate, circularity and communities. It will enable the co-creation of inter and transdisciplinary R&I programmes and implement a broad range of activities to support transformative change. This will foster alignment, boost investments, and increase the societal relevance, impact, uptake and visibility of R&I, and strengthen EU leadership in tackling food system transformation.

4.6.2 Coherence and coordination among partnerships

Table 76 Overview of Partnerships identified in Food Systems proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health	Chemicals Risk Assessment	Not specified	Yes
Digital, Industry and Space		Not specified	
Climate, energy and mobility	DUT	Shifting urban food consumption towards more sustainable resources, eg food from the ocean to relieve land pressures	
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Climate neutral sustainable and productive Blue Economy	More sustainable food from the oceans to alleviate pressures on land	Yes
	Agro-ecology and Farming Systems transition	Not specified	
	Circular European Bioeconomy	Food waste, packaging etc	
	Biodiversity	Not specified	
	Agriculture of Data	Not specified	
	Animal Health	Healthy animals and safe food	
Other Pillars	EIT/KICs Food	Not specified	

It builds on the work of the FACCE, HDHL and Oceans JPIs, the SUSFOOD, ICT AGRI FOOD and the CoreOrganic, and other ERA-Nets, the EIT Food and Climate and links to the EU-Africa Partnership on Food and Nutrition Security and Sustainable Agriculture, and PRIMA initiative, International Bioeconomy Forum.

4.6.3 Synergies with other Programmes

Table 77 Overview of synergies identified in the Food Systems proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Digital Europe Programme	▪ Implement the Food Data Cloud initiatives	
Bioeconomy Strategy and Clean Planet Communication	▪ Implement the Bioeconomy Action Plan	
EMFF	▪ Sustainable and safe food production from fisheries and aquaculture	
Green Deal – Farm to Fork, Climate Pact	▪ Implement the food systems R&I agenda of the Farm to Fork Communication	
Other initiatives in Horizon Europe		
▪	▪	

4.7 European Partnership for a Circular bio-based Europe

4.7.1 Summary

The partnership supports sustainability-driven innovation for new local value-creation from waste and biomass, driving sustainable, resource-efficient and climate-neutral circular solutions towards a healthier planet, replacing fossil and carbon-intensive mineral resources by biomass and waste for bio-based materials and products, includingnutrients. Investment in a research and innovation partnership with biomass utilising industry will boost sustainable and competitive transitions to climate neutral circular EU industry by 2050. It will leverage direct additional investment in one of the seven building block of the EU Long-term Strategy for 2050 contributing to the key aspects of the European Green Deal..

4.7.2 Coherence and coordination among partnerships

Table 78 Overview of Partnerships identified in the Circular bio-based Europe proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health	Chemical Risk Assessment	▪ Bioplastics	
Digital, Industry and Space	Carbon Neutral and Circular Industry	▪ By reducing GHG emissions in Europe, in particular by replacing fossil-based resources by bio-based ones, and by covering capture and use of CO_2 from biogenic sources	Yes
Climate, Energy and Mobility	DUT	▪ Circularity in urban industry systems	No
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Safe and Sustainable Food System for People, Planet & Climate	▪ FoodBy developing food and feed products from bio-based materials in a sustainable way ▪ By developing food waste, packaging etc solutions ▪ By focusing on biodiversity preservation and enhancement as part of the pursued biomass value chains	Yes
	Climate neutral sustainable and productive Blue Economy	▪ Circularity in blue economy (fisheries - efficient use of fish landed for purposes other than human consumption, aquaculture, shipping waste etc)	No
	Animal Health	▪ Biobased solutions for eg bio plastics	No
		▪ Waste water treatment	No
Other Pillars	EIT-KICs ▪ Food, ▪ Climate, ▪ Raw Materials, ▪ Manufacturing	▪ . ▪ By supporting enhanced circularity and environmental sustainability of the European bio-based industries ▪ By fostering closer collaboration between universities, industry and research centres	Yes

Notes for further development:

The proposal states in general that "Within Horizon Europe, links have been identified with Cluster 4 'Digital, industry and space' and Cluster 5 'Climate, energy and mobility".

Key issues to address:

- Coherence with other partnerships needs more specification.
- While R&D on biofuels is not covered by CBE, the technology developed to efficiently process the biomass (along the cascading concept of biomass use, and/or biotechnology) may offer technical solutions with potential of technology transfer to the biofuel industry. Therefore, some synergy with energy & mobility sub-clusters (biofuels) should be elaborated in due time (SIRA preparation).
- Biodiversity loss has been identified in the CBE IA as one of the priorities to be tacked as a lesson learned from the BBI JU programme. Biodiversity of terrestrial and aquatic feedstock value chains is of critical importance, including the need to ensure suitable assessment of sustainability. This calls for a synergy with the "Biodiversity" partnership, which should be elaborated in due time (SIRA preparation).

4.7.3 Synergies with other Programmes

Table 79 Overview of synergies identified in the Circular bio-based Europe proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
European Innovation Partnership for Agricultural Productivity and Sustainability (EIP AGRI)	▪ To strengthen the involvement of the agricultural primary sector in the proposed partnership	
ESIF, ERDF, EAFRD, EMFF	▪ Circularity in the blue economy with a special focus on coastal regions, fisheries (efficient use of landed fish for purposes other than human consumption) and on aquaculture. ▪ By increasing the clarity of the complementarities to all actors, to enable the sufficient amount of funding in order to accelerate the transition from a fossil-based economy towards a more bio-based economy	
InvestEU	▪ To involve investment in to the proposed partnership as one of the areas for improvement coming from BBI JU is the difficulty of involving small and large scale investments.	
Emission Trading System Innovation Fund (EU ETS IF)	▪ ▪ Carbon capture and use in the emissions trading system, aligned with the above identified synergy with the candidate partnership on Carbon Neutral and Circular Industry	
European Circular Bioeconomy Fund (ECBF)	▪ Replicating the solutions identified and funded, across EU	

	regions, taking into account the lessons learned from the operational modality of ECBF	
Other initiatives in Horizon Europe		
Mission areas ▪ **Adaptation to climate change including societal transformation** ▪ **Healthy oceans, seas, coastal and inland waters;** ▪ **Climate-neutral and smart cities;** ▪ **Soil health and food**	▪ Contributes to lower GHG emissions in Europe as well as to preserve biodiversity ▪ Cities will play a role too in the CBE partnership by providing waste-based biomass to be refined	

- The proposal demonstrates links with the objectives of Horizon Europe, EU policies and SDGs. Concrete links with the Green Deal could be reinforced, including mentioning what other policies will be needed beyond R&I to ensure uptake.
- The Green Deal communication refers specifically to the R&I partnership in the **bio-based industry sector** as a tool to support research and innovation needed to meet the Green Deal objectives

4.8 European Partnership Water security for the planet (Water4All)

4.8.1 Summary

The WATER4All partnership aims at securing all water demands in terms of quality and quantity, and that both economic and natural systems, as well as people are protected from water-related hazards and risks. Water is also the most important natural resource in the European Green Deal adopted by the Van der Leyen Commission. Good water management contributes to all objectives of the Green Deal: Climate mitigation and adaptation, Preserving and protecting biodiversity, zero-pollution ambition for a toxic free environment, 'Farm to Fork' Strategy (to reduce the use and risk of chemical pesticides, as well as the use of fertilizers and antibiotics, Clean and circular economy. New technologies, sustainable solutions and disruptive innovation will be critical to achieve the objectives of the European Green Deal.

4.8.2 Coherence and coordination among partnerships

Table 80 Overview of Partnerships identified in the Water4All: Water security for the planet proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health	Chemical Risks Assessment	▪ Water contamination on land	No
Digital, Industry and Space	Metrology	▪ A cross-cutting partnership that can be linked to almost any other partnership ((Eralearn Workshop, March 2020). Create specialised metrology networks across Europe to respond to new global challenges.	No
		▪	
Climate, energy and mobility		▪	
	Zero-emission waterborne transport	▪ Acting on "Source": Zero-emission shipping for all ship types and services; Increase the environmental performance of inland and marine shipping	No
	DUT	▪ Water supply from desalinisation ▪ Waste water treatment	Yes
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Accelerating farming systems transition: Agro-ecology living labs and research infrastructures	▪ Adverse impact on natural resources (soil, water and air), fragmentation of habitats and loss of wildlife	No
	Rescuing biodiversity to safeguard life on Earth	▪ Stop net biodiversity loss and guide actions to protect, restore and sustainably manage ecosystems and our natural capital; Conservation, sustainable management and use of biodiversity; Development and deployment of Nature-based Solutions	Yes

	Safe and Sustainable Food System for People, Planet & Climate	▪ Role of water in food safety system, food safety and food quality; Shift to more sustainable and healthy diets	No
	Climate neutral sustainable and productive Blue Economy	▪ Water supply from marine sources (desalinisation) and water treatment and circularity	Yes
	Circular bio-based Europe	▪ Waste water treatment	No
		▪	
Other Pillars	EIT Climate-KIC	▪ Reference to water services in particular in relation with making agriculture climate-smart and transform food systems.	n/a
	EOSC Partnership	▪ Implement & realise the EOSC share and process publicly funded research data across borders and scientific domains.	No

Notes for further development:

4.8.3 Synergies with other Programmes

Table 81 Overview of synergies identified in the Water4All: Water security for the planet proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
LIFE	▪ Not specified	
EMFF	▪ Improving water usage in aquaculture and promoting closed recirculation water systems. Community-led local development strategies by developing a diversified infrastructure for example in relation to water supply.	
ERDF	▪ EU fund transfer to MS constitute 70% of money spent for flood protection in EU 13 (15% in EU15)	
COPERNICUS	▪ Connecting earth observation and local measurements is crucial for improving understanding functioning of hydro-systems	
PRIMA	▪ Theme 1 : « Integrated and Sustainable management of water for arid and semi-arid Mediterranean areas“ ▪ Cross-cutting theme: Nexus with the farming systems and the agro-food value chain	▪ Inform, Consult, involve wherever possible
Other initiatives in Horizon Europe		

Mission areas ▪	▪	
▪ Adaptation to climate change including societal transformation	▪ Climate change adaptation and mitigation; climate services; systemic and nature-based solutions; disaster risk reduction and management including public health and critical infrastructures; water management	
▪ Healthy oceans, seas, coastal and inland waters	▪ Systemic solutions for the prevention, reduction, mitigation and removal of marine pollution; Transition to a circular and blue economy; Urban, coastal and maritime spatial planning	
▪ Soil health and food	▪ Food production strongly dependent on and affecting quality & availability of land and water; wastewater as a resource (sludge reuse and its effects, nutrient circulation, water management in industrial processes including mining)	
▪ Climate-neutral and smart cities	▪ Climate change mitigation and adaptation; urban infrastructures and networks, including … water; urban circularity and regeneration; ecosystem services and nature-based solutions; public health & well-being in cities; urban resilience	
	▪	

Notes for further development:

Links with other Union programmes are mentioned in several parts of the proposal, however a comprehensive vision of how these links will be implemented at the level of the partnership is not sufficiently clear.

5 Other Pillars

Table 82 Other Pillars - Coherence and collaboration among partnerships

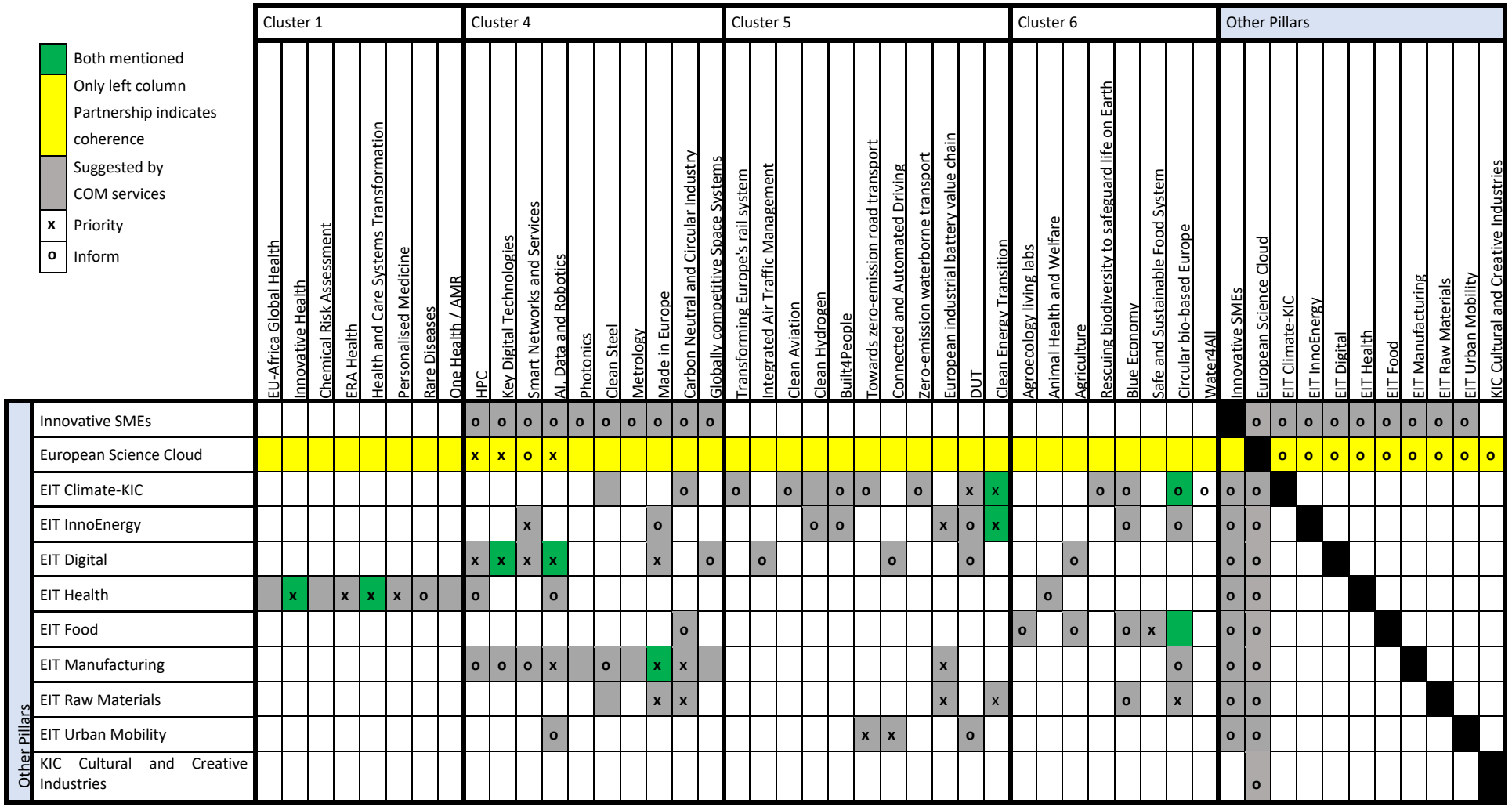

Table 83 Other Pillars - Synergies with other Programmes

● Proposers indicated possible synergy
❍ Possible additional synergies

	Cluster 6										
	Innovative SMEs	European Science Cloud	EIT Climate-KIC	EIT InnoEnergy	EIT Digital	EIT Health	EIT Food	EIT Manufacturing	EIT Raw Materials	EIT Urban Mobility	KIC Cultural and Creative Industries
Other programmes and initatives											
Trans-European Transport Network (TEN-T)											
Connecting Europe Facility (CEF)		●									
Digital Europe Programme (DEP)		●		❍		❍			❍		
InvestEU			❍	❍	❍	❍	❍	❍	❍	❍	
Structural Funds (ERDF/Cohesion)		●	❍	❍	❍	❍	❍	❍	❍	❍	
Strategic Forum for Important Projects of Common European Interest (IPCEI)											
Important Project of Common European Interest (IPCEI)											
ETS Innovation Fund											
Innovation Fund											
Modernisation Fund											
Just Transition Mechanism											
European Investment Bank											
Circular Bioeconomy Thematic Investment Programme											
Programme for Environment & Climate Action (LIFE)											
Copernicus											
GEOSS											
European Innovation Council											
Erasmus Plus			❍	❍	❍	❍	❍	❍	❍	❍	
National Energy and Climate Change Plans											
Research Fund for Coal and Steel											
Covenant of Mayors											
European Space Agency											
Standardisation Bodies											
European Maritime and Fisheries Fund							❍				
EIP Agri											
HE Mission Areas											
Adaptation to Climate Change, including Societal Transformation		●	❍		❍				❍		
Climate-neutral and Smart Cities		●	❍	❍						❍	
Cancer		●			❍	❍	❍				
Healthy Oceans, Seas, Coastal and Inland Waters		●	❍	❍			❍			❍	
Soil Health and Food		●	❍				❍				

5.1 Innovative SMEs

5.1.1 Summary

Eurostars-3 will be the largest funding programme in the European innovation landscape for international research & innovation collaboration by SMEs, executed in a partnership of 36 countries. A high economic impact is realised by innovative SMEs that collaborate in projects with a societal and environmental impact. An improved evaluation process will result in a six weeks faster time-to-approval. A joint and synchronised programme can only be realised at this scale in close cooperation with the European Commission to leverage the strengths of the national support systems.

5.1.2 Coherence and coordination among partnerships

Table 84 Overview of Partnerships identified in Innovative SMEs proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health	Potential links to all other partnerships.	▪ Discuss links between Partnership on Innovative SMEs and other future partnerships, as far as they involve SMEs/need an SME outreach, and in a very pragmatic way.	
Digital, Industry and Space			
Climate, energy and mobility			
Food, Bioeconomy, Natural Resources, Agriculture and Environment			
Other Pillars	EIT-KICs	▪ Promote actively the participation of SMEs members of the EIT-KICs in all cases where specific thematic calls are envisaged.	

Notes for further development:
Cross-cutting aspect of Innovative SMEs should be discussed and developed. Relevant for all partnerships that aim at deployment of research results. Especially the industry-driven partnerships in cluster 4 and EIT KICs.

5.1.3 Synergies with other Programmes

Table 85 Overview of synergies identified in the Innovative SMEs proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Structural Funds	▪	
EIC	▪ Complementarity ▪ Both instruments aim to accelerate the process of bringing innovations to the market and to turn research knowledge into innovative products and services.	
	▪	

Other initiatives in Horizon Europe		
▪	▪	

Notes for further development:

As to the Single Market Programme, the impact assessment report mentioned complementarities with actions such as EEN and Clusters, and more generally on SME related actions. See the quote from the Impact assessment report: "Relevant programmes are in particular the planned Single Market Programme and its instruments on support measures such as Enterprise Europe Network (EEN), clusters and SMEs support under the InvestEU programme provide a wide range of support which address the systemic failures SMEs face but are limited in their impact to individual companies. These instruments do not provide any direct funding for R&I projects and do not provide support for international collaboration between SMEs."

6.2. European Open Science Cloud Partnership

6.2.1. Summary

The European Open Science Cloud (EOSC) Partnership will enable a trusted, virtual, federated environment in Europe to store, share and re-use research data across borders and scientific disciplines. The Partnership will bring together institutional, national and European initiatives and engage all relevant stakeholders to co-design and deploy a European research data commons where data are Findable, Accessible, Interoperable, Reusable (FAIR). This European contribution to a "Web of FAIR Data and Related Services for Science" will enhance the possibilities for researchers to find, share and reuse publications, data, and software leading to new insights and innovations, higher research productivity and improved reproducibility in science.

6.2.2. Coherence and coordination among partnerships

The EOSC Partnership aims to accelerate the transition to more effective Open Science and Open Innovation with new opportunities for multi-disciplinary research, frontier science and data-intensive science. Therefore, the Partnership has a unique transversal role (cross-Pillar, cross-Cluster) in Horizon Europe, bringing prospects of collaboration with most of the proposed European partnerships.

Vertical partnerships

All vertical partnerships can take benefit from a successful development of the EOSC as this will equip them with minimal, rigorous standards and protocols and maximum freedom of implementation to share and reuse data and other digital objects across relevant domains of research. Interaction with many of these partnerships, in particular, challenge-driven ones, will thus increase the potential to bring value to researchers in Europe and beyond and to underpin and consolidate a European Research Area that is fit for the digital age.
Open science practices have a horizontal value and therefore a multilateral collaboration is proposed (see Introduction). This multilateral collaboration could also be applicable to other Horizon Europe initiatives, in particular, the Missions (see table 91), taking into account their challenge driven approach and cross-disciplinary nature.

*Table 86 Overview of **Vertical Partnerships** identified in the European Open Science Cloud proposal*

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health	All vertical partnerships, in particular those interested in disciplinary and cross-disciplinary interoperability use cases.	Purpose: To support the wide spreading of open science practices and the implementation of the FAIR principles for data within the vertical partnerships facilitating data sharing and reuse. Multilateral collaboration including support to the development of interoperability frameworks and access to data, tools and services.	
Digital, Industry and Space			
Climate, energy and mobility, Food, Bioeconomy,			
Natural Resources, Agriculture and Environment			
Other Pillars			

Technology partnerships

Joining forces with specific technology partnerships identified in table 90 will underpin the EOSC ecosystem with new capacities and functionalities in particular in the fields of cloud storage, cloud computing and big data technologies.

*Table 90 Overview of **Technology Partnerships** identified in the European Open Science Cloud proposal*

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Digital, Industry and Space	European Partnership for High Performance Computing	Purpose: High-performance computing feeds on big data availability. Bilateral collaboration to interconnect the EOSC ecosystem to EuroHPC servicing.	
	European Partnership on Artificial Intelligence, Data & Robotics	Purpose: AI and big data enhance user experience and the functionality of working with and across data sets in EOSC Bilateral collaboration in the field "FAIR-by-design" research data, automated workflows and machine learning based on research data	

6.2.3. Synergies with other Programmes

The EOSC partnership can play a strategic role in supporting the EU policy priority of having a Europe fit for the digital age. Therefore, at European level, synergies with other programmes, in particular the Digital Europe Programme and the Connecting Europe Facility, in areas such as the development of digital skills, standards or tools should be exploited in order to pool the necessary resources and avoid overlaps.

The European data strategy recognizes EOSC as an additional Common European data space. Consequently, the EOSC Partnership will also seek synergies in the deployment and design of the data spaces aiming at enabling cross-border access and use of data and data enabled services. While EOSC focuses on federating research data infrastructures, the research data made accessible through EOSC will be relevant for several data spaces (e.g. health or Green Deal data spaces, in synergy with the Copernicus programme and the Destination Earth initiative).

Moreover, a majority of Member States are making significant investments in national infrastructures and Open Science programmes that could in principle be federated as part of the EOSC environment. There is, therefore, a strategic European value of improving alignment and compatibility of national Open Science policies and national plans for data infrastructures in the EOSC context.

Table 91 Overview of synergies identified in the European Open Science Cloud proposal

Programme at EU, national or regional level	Purpose	Details (form etc)
Digital Europe Programme	To exploit potential synergies for the digital transformation of ERA	Synchronisation of the support provided by HE and DEP in the area of Digital Skills, in particular for open science.

	(researchers and research infrastructures).	Capitalising the support to supercomputing and artificial intelligence.
Connecting Europe Facility	To guarantee the required connectivity underlying the EOSC ecosystem.	An area of potential coordination is in the support to the deployment of a trusted Authorisation, Authentication and Identification framework for EOSC users across borders and disciplines.
European Data Spaces	To enable cross-border access and use of data and data enabled services by the researchers, public authorities and the commercial sector.	Joint design and deployment of sectoral common European data spaces, including through multi-stakeholder's interoperability use cases.
Structural funds	To leverage the investments through structural funds in research data infrastructures that can be federated as part of the EOSC ecosystem.	Linking with national users and national investments, reinforcing the expansion of the EOSC at other levels than the EU level, linking with smart specialisation strategies related to research data storage and management, data curation centres or data stewards education and skills
National/regional programmes supporting research infrastructures and data sharing	To leverage national investments and other initiatives with regards to research data infrastructures that can be federated as part of the EOSC ecosystem and support to open science practices.	▪ EOSC partnership supports the coordination for MS/AC initiatives. ▪ Gathering good practices and evidence regarding data policies and investments. ▪ Identifying synergies and overlaps in data services (supply and demand)
Other initiatives in Horizon Europe		
Missions	To support the wide spreading of open science practices and the implementation of the FAIR principles for data to enable research data sharing across disciplines so that Missions can *link activities across different disciplines and different types of research and innovation*.	Multilateral collaboration including support to the development of interoperability frameworks and access to data, tools and services.

5.2 EIT Climate-KIC

5.2.1 Summary

EIT Climate-KIC is a knowledge innovation community established and funded by the European Institute of Innovation and Technology (EIT) in 2010. Their purpose is to tackle climate change through innovation. They are Europe's largest public-private partnership with this purpose – a growing pan-European community of diverse organisations united by a commitment to direct the power of creativity and human ingenuity at the climate change challenge.

5.2.2 Coherence and coordination among partnerships

Table 87 Overview of Partnerships identified in the EIT Climate-KIC

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Digital, Industry and Space	Clean Steel – Low Carbon Steelmaking		No
	Carbon Neutral and Circular Industry		No
Climate, energy and mobility	Clean Aviation		No
	Clean Hydrogen		No
	Built4People		No
	2ZERO		No
	Zero-emission waterborne transport		No
	DUT		No
	Clean Energy Transition		Yes
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Blue Economy		No
	Circular bio-based Europe		Yes
Other Pillars	Innovative SMEs	▪ Deployment of innovation ▪ Accelerator	n/a

Notes for further development:
Most relevant for EIT Climate-KIC is cluster 5 since the mission of the EIT Climate-KIC is a "*circular, net-zero emissions economy by 2050*".

Transforming Europe's rail system and Water4All are the only two other partnership candidates who mention the EIT Climate-KIC.

5.2.3 Synergies with other Programmes

Table 88 Overview of synergies identified in the EIT Climate-KIC

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Erasmus	▪	
ESIF	▪	
InvestEU	▪	

Other initiatives in Horizon Europe		
Mission Area ▪ **Adaptation to Climate Change, including Societal Transformation** ▪ **Climate-neutral and Smart Cities** ▪ **Healthy Oceans, Seas, Coastal and Inland Waters**	▪	

Notes for further development:

5.3 EIT InnoEnergy

5.3.1 Summary

Please include EIT Inno Energy was designated as a Knowledge and Innovation Community (Innovation Community) by the EIT's Governing Board on 16 December 2009 in Budapest. The priority area which this Innovation Community addresses is **sustainable energy**. To build a sustainable long-lasting operational framework among the three actors of the knowledge triangle in the energy sector: industry, research and higher education, and ensure that this integration of the three is more efficient and has a higher impact on innovation (talent, technology, companies) than the three standing alone.

5.3.2 Coherence and coordination among partnerships

Table 89 Overview of Partnerships identified in the EIT InnoEnergy

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Digital, Industry and Space	Smart Networks and Services	▪ Smart grids	No
	Clean Hydrogen		No
	Built4People		No
	European battery value chain		No
	DUT		No
	Clean Energy Transition		Yes
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Blue Economy		No
	Circular bio-based Europe		No
Other Pillars	Innovative SMEs	▪ Deployment of innovation ▪ Accelerator	No

Notes for further development:
Most relevant are partnerships dealing with sustainable energy.

The only other two partnerships that mention EIT InnoEnergy are Key Digital Technologies and Built4People.

5.3.3 Synergies with other Programmes

Table 90 Overview of synergies identified in the EIT InnoEnergy

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Erasmus	▪	
DEP	▪	
ESIF	▪	
InvestEU	▪	
Other initiatives in Horizon Europe		

Mission Area ▪ **Climate-neutral and Smart Cities**	▪ Clean energy transformation	

Notes for further development:

5.4 EIT Digital

5.4.1 Summary

EIT Digital delivers breakthrough digital innovations to the market and breeds entrepreneurial talent for economic growth and improved quality of life in Europe. It does this by mobilising a pan-European ecosystem of almost 200 top European corporations, SMEs, start-ups, universities and research institutes. EIT Digital is focused on entrepreneurship and is at the forefront of integrating education, research and business by bringing together students, researchers, engineers, business developers and entrepreneurs.

5.4.2 Coherence and coordination among partnerships

Table 91 Overview of Partnerships identified in the EIT Digital

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Digital, Industry and Space	High Performance Computing		No
	Key Digital Technologies		Yes
	Smart Networks and Services		No
	AI, Data and Robotics		Yes
	Made in Europe		No
Other Pillars	Innovative SMEs	▪ Deployment of innovation ▪ Accelerator	n/a

Notes for further development:
Most relevant for EIT Digital is cluster 4.

5.4.3 Synergies with other Programmes

Table 92 Overview of synergies identified in the EIT Digital

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Erasmus	▪	
DEP	Similar goals: ▪ The programme will boost investments in supercomputing, artificial intelligence, cybersecurity, advanced digital skills, and ensuring a wide use of digital technologies across the economy and society, including through Digital Innovation Hubs.	
ESIF	▪	

InvestEU	▪	
Other initiatives in Horizon Europe		
	▪	

Notes for further development:

5.5 EIT Health

5.5.1 Summary

EIT Health is a consortium of over 140 partners from leading businesses, research centres and universities from across 15 EU countries. EIT Health was designated as an EIT Innovation Community by the EIT Governing Board on 09 December 2014. The goal of EIT Health is to contribute to increasing the competitiveness of European industry, improve the quality of life of Europe's citizens and the sustainability of healthcare systems.

5.5.2 Coherence and coordination among partnerships

Table 93 Overview of Partnerships identified in the EIT Health

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Health	All partnerships in this cluster		See text below
Digital, Industry and Space	High Performance Computing	▪ Enabler	No
	AI, Data and Robotics	▪ Enabler	No
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Animal Health and Welfare	▪ Zoonoses → Covid-19	No
Other Pillars	Innovative SMEs	▪ Deployment of innovation, Accelerator	n/a

Notes for further development:

All partnership candidates from cluster 1 are of relevance for EIT Health. Other partnerships can serve as enablers – like digital technologies or Innovative SMES. In light of the current Covid-19 pandemic, Animal health is very relevant with regards to zoonoses.

Innovative Health and Health and Care Systems Transformation from cluster 1 mention EIT Health in their proposals.

5.5.3 Synergies with other Programmes

Table 94 Overview of synergies identified in the EIT Health

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Erasmus	▪	
DEP	▪	
ESIF	▪	
InvestEU	▪	
Other initiatives in Horizon Europe		

Mission Area ▪ **Cancer**	▪	

Notes for further development:

5.6 EIT Food

5.6.1 Summary

With consumers at its core, the mission of EIT Food is to empower a trusted multi-stakeholder community that includes market-leading and start-up businesses, technology innovators, best-inclass research institutions and educators, and advanced farmers and consumers. Together, they will catalyse the transformation of the food system and effectively meet the global food sector demands of present and future generations. By following an integrated seed-to-fork approach, systematically leveraging the opportunities of digital technologies and engaging consumers in the process of change, EIT Food will improve nutrition and make the food system resource-efficient, secure, transparent and trustful.

5.6.2 Coherence and coordination among partnerships

Table 95 Overview of Partnerships identified in the European partnership for chemical risk assessment proposal

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Accelerating farming systems transition: agro-ecology living labs & research infrastructures		No
	Agriculture of Data		No
	Safe and Sustainable Food System for People, Planet & Climate		No
	Circular bio-based Europe		Yes
Other Pillars	Innovative SMEs	Deployment of innovation, Accelerator	n/a

Notes for further development:
Most relevant for EIT Food are the three food-related partnerships from cluster 6.

5.6.3 Synergies with other Programmes

Table 96 Overview of synergies identified in the European partnership for chemical risk assessment proposal

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Erasmus	▪	
EMFF	▪ Sustainable fishing	
ESIF	▪	
InvestEU	▪	
Other initiatives in Horizon Europe		
Mission Area ▪ **Soil Health and Food**	▪	

Notes for further development:

5.7 EIT Manufacturing

5.7.1 Summary

EIT Manufacturing will establish an innovation community and build a network of ecosystems where people can acquire skills and find opportunities; and where innovators are able to attract investors and accede venture capital. For that purpose, EIT Manufacturing brings together 50 European leading partners from business, education and research, from 17 countries. The manufacturing industry is a global base for prosperity and key to Europe's economic, social and environmental sustainability. Manufacturing is a main driver of industrial innovation, job creation and growth for the European society.

5.7.2 Coherence and coordination among partnerships

Table 97 Overview of Partnerships identified in the EIT Manufacturing

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Digital, Industry and Space	All partnerships in this cluster, especially Made in Europe	▪	Yes (Made in Europe), others no
Other Pillars	Innovative SMEs	▪ Deployment of innovation, Accelerator	n/a

Notes for further development:

Most relevant for EIT Manufacturing is "Made in Europe" (Towards a competitive discrete manufacturing industry). The other partnerships in cluster 4 are relevant, too, since they are mostly industry-driven and target European competitiveness in different fields of manufacturing (Digital technologies, steel, etc.).

5.7.3 Synergies with other Programmes

Table 98 Overview of synergies identified in the EIT Manufacturing

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Erasmus	▪	
DEP	▪	
ESIF	▪	
InvestEU	▪	
Other initiatives in Horizon Europe		
▪	▪	

Notes for further development:

5.8 EIT Raw Materials

5.8.1 Summary

Raw materials are essential to securing a transition to green energy technologies, to securing growth and sustainable consumption and to securing access to clean and efficient consumer technologies. Europe is highly dependent on importing raw materials to secure the global competitiveness of its manufacturing industries and to accelerate the transition to a resource efficient, sustainable society. EIT Raw Materials vision is to develop raw materials into a major strength for Europe. The mission of EIT Raw Materials is to enable sustainable competitiveness of the European minerals, metals and materials sector along the value chain by driving innovation, education and entrepreneurship.

5.8.2 Coherence and coordination among partnerships

Table 99 Overview of Partnerships identified in EIT Raw Materials

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Digital, Industry and Space	Made in Europe	European competitiveness	No
	Carbon Neutral and Circular Industry		No
Climate, energy and mobility	European industrial battery value chain	European raw materials and recycling	No
	Clean Energy Transition		No
Other Pillars	Innovative SMEs	Deployment of innovation, Accelerator	n/a

Notes for further development:
Most relevant for EIT Raw materials are clusters 4 and 5. In cluster 4 partnerships related to digital technologies are also relevant since hardware often depends on raw materials and recycling might be interesting.

5.8.3 Synergies with other Programmes

Table 100 Overview of synergies identified in the EIT Raw Materials

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Erasmus	▪	
DEP	▪	
ESIF	▪	
InvestEU	▪	
Other initiatives in Horizon Europe		
Mission Area ▪ **Adaptation to Climate Change, including**	▪ Natural resources ▪ Sustainable production	

Societal Transformation		

Notes for further development:

5.9 EIT Urban Mobility

5.9.1 Summary

EIT Urban Mobility is dedicated to accelerating solutions that improve our collective use of urban spaces, while ensuring accessible, convenient, safe, efficient, sustainable and affordable multimodal mobility. EIT Urban Mobility's objective is to rethink urban spaces, overcoming fragmentation by integrating all urban mobility players – including cities and citizens – and increasing social inclusion and equality. By accelerating the products, services and processes for cities, EIT Urban Mobility will reimagine collective and individual mobility, shaping it according to local needs, supporting communities and stimulating the economy.

5.9.2 Coherence and coordination among partnerships

Table 101 Overview of Partnerships identified in EIT Raw Materials

Areas for collaboration	Candidate partnerships	Details (e.g. purpose, form)	Mentioned in other proposal
Climate, energy and mobility	DUT	▪ Urban transition	No
Other Pillars	Innovative SMEs	▪ Deployment of innovation, Accelerator	n/a

Notes for further development:
Most relevant for EIT Urban Mobility is DUT regarding urban transition of mobility. Other mobility partnerships from cluster 5 are relevant as well. Especially, when they have important links to urban mobility like rail and road transport.

Key Digital Technologies, Transforming Europe' Rail system and Built4People mention EIT Urban Mobility.

5.9.3 Synergies with other Programmes

Table 102 Overview of synergies identified in the EIT Raw Materials

Programme	Purpose	Details (form etc)
Programmes at EU, national or regional level		
Erasmus	▪	
DEP	▪	
ESIF	▪	
InvestEU	▪	
Other initiatives in Horizon Europe		
Mission Area ▪ **Climate-neutral and Smart Cities**	▪ Urban infrastructures and networks, including transport and logistics systems	

Notes for further development: