



6G-VERSUS

6G Vertical Trials for Sustainability

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14.2.2025



Co-funded by
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6G SNS

6G-VERSUS

6G VERTical trials for SUStainability

Duration: 36 months 1.1.2025 - 31.12.2027

Call: HORIZON-JU-SNS-2024-STREAM-D-01-01 - SNS Large Scale Trials and Pilots (LST&Ps) with Verticals

Type of action: HORIZON-JU-IA HORIZON JU Innovation Actions

Funding: 12,1 M€, total budget 14,5 M€

Coordinator: UOULU / Sanna Tuomela

Technical manager: ICCS / Xenofon Vasilakos

Partners: 34 from 10 countries, 13 academic and/or research organizations, 10 industrial partners, 9 SMEs and 2 NGOs

Effort: 1800 PMs

<http://6G-versus.eu>

<https://www.linkedin.com/company/6g-versus/>

https://x.com/6G_VERSUS

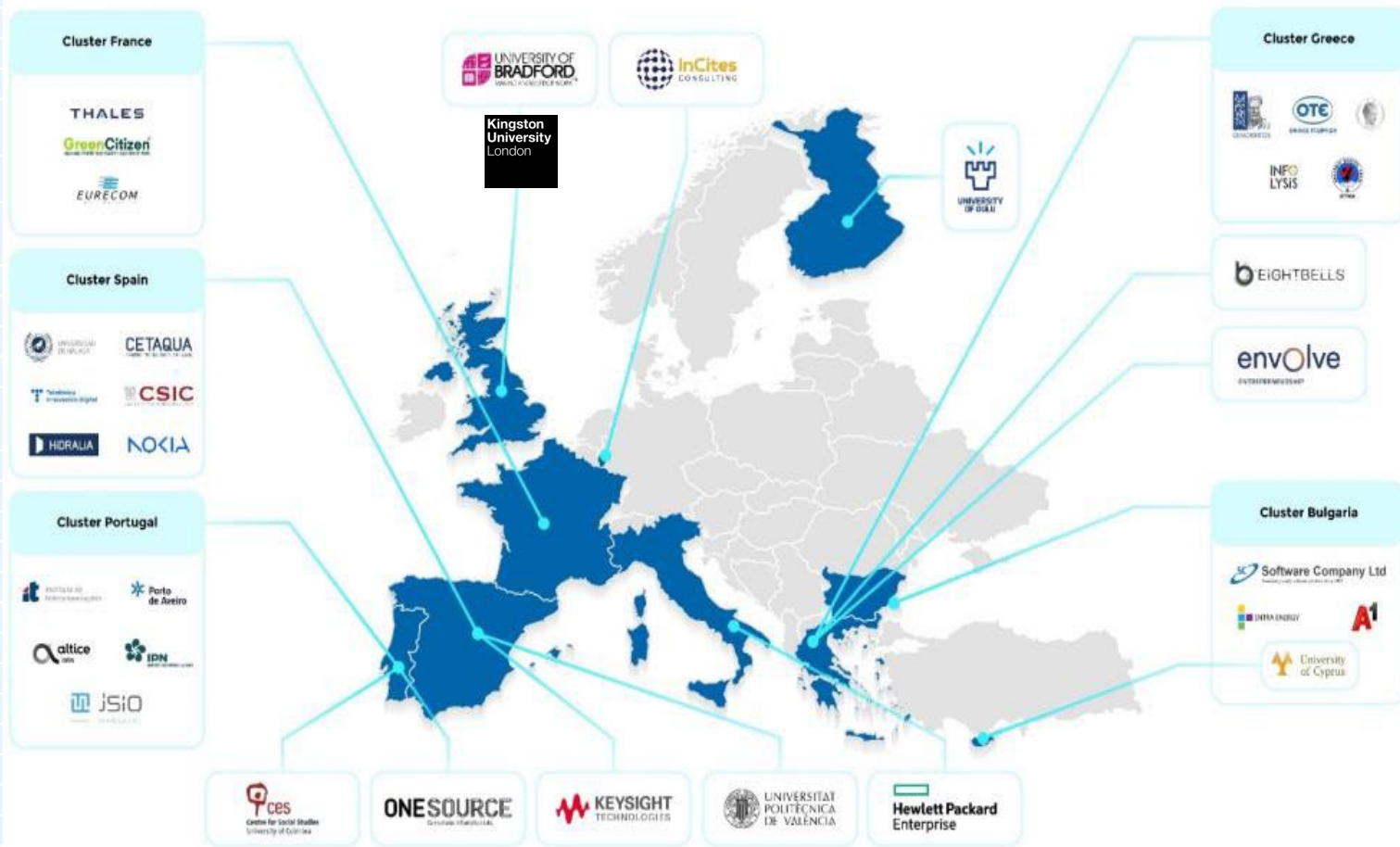
<https://www.facebook.com/6gversus>

<https://www.instagram.com/6gversus/>

<https://www.youtube.com/@6G-VERSUS>

Participant No.	Participant organisation name	Short name	Country
1 (Coord.)	OULUN YLIOPISTO	UOULU	Finland
2	KEYSIGHT TECHNOLOGIES	KEYS	Spain
3	ONE SOURCE CONSULTORIA INFORMATICA LDA	ONE	Portugal
4	EIGHT BELLS LTD	8Bells	Cyprus
5	INCITES CONSULTING SA	INC	Luxembourg
6	UNIVERSITAT POLITÈCNICA DE VALÈNCIA	UPV	Spain
7	UNIVERSITY OF BRADFORD	UBRAD	UK
8	ENVOLVE ENTREPRENEURSHIP	ENV	Greece
9	CENTRO DE ESTUDOS SOCIAIS	CES	Portugal
10	NATIONAL CENTER FOR SCIENTIFIC RESEARCH "DEMOKRITOS"	NCSR	Greece
11	ORGANISMOS TILEPIKOINONION TIS ELLADOS OTE AE	OTE	Greece
12	EREVINITIKO PANEPISTIMIAKO INSTITOUTO SYSTIMATON EPIKOINONION KAI YPOLOGISTON	ICCS	Greece
13	INFOLYSIS P.C.	INF	Greece
14	HELLENIC RESCUE TEAM OF ATTICA	HRTA	Greece
15	UNIVERSIDAD DE MALAGA	UMA	Spain
16	TELEFONICA INNOVACION DIGITAL SL	TID	Spain
17	AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS	CSIC	Spain
18	CETAQUA	CET	Spain
19	HIDRALIA	HIDRA	Spain
20	NOKIA SPAIN SA	NOKIA	Spain
21	EURECOM GIE	EUR	France
22	GREENCITYZEN	GREEN	France
23	THALES SIX GTS FRANCE SAS	TSGF	France
24	A1 BULGARIA EAD	A1	Bulgaria
25	ENTRA ENERGY	EE	Bulgaria
26	UNIVERSITY OF CYPRUS	UCY	Cyprus
27	SOFTWARE COMPANY	SCBG	Bulgaria
28	INSTITUTO DE TELECOMUNICACOES	ITAV	Portugal
29	ALTICE LABS SA	ALB	Portugal
30	APA-ADMINISTRACAO DO PORTO DE AVEIRO SA	APA	Portugal
31	JSIO - IOT HASSLE FREE	JSIO	Portugal
32	INSTITUTO PEDRO NUNES ASSOCIACAO PARA A INOVACAO E DESENVOLVIMENTO EM CIENCIA E TECNOLOGIA	IPN	Portugal
33	HEWLETT-PACKARD ITALIANA S.R.L.	HPE	Italy
34	KINGSTON UNIVERSITY LONDON	KUL	UK

Partners





6G-VERSUS



Bridges technological innovation with strategic experimentation to achieve tangible sustainability outcomes.



Presents a novel technology methodology and architecture that transforms existing use cases into 6G applications, optimises the data and control planes of 6G systems and facilitates seamless information flow and decision-making processes.



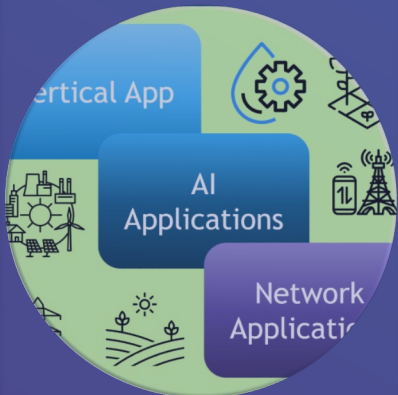
Leverages advanced 6G research platforms across Europe, conducts large-scale trials and pilots to explore sustainable solutions in five environmentally conscious vertical industries.

Transforming the currently existing vertical use cases and services into 6G applications

Testing and Validating the 6G applications of each use-case/pilot at the six Experimentation Platforms that are enhanced with energy efficiency tools and components

Assessing sustainable impact of each 6G Application per use-case/pilot on the environment, the society, the economy, the industry and the European market

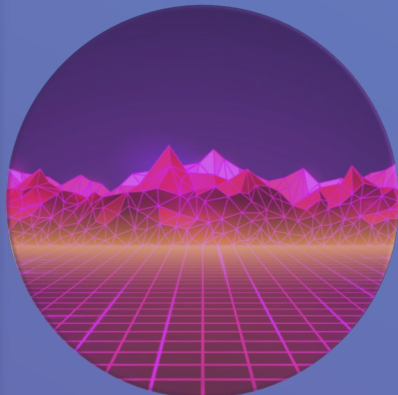
Objectives



Design and Development of a 6G-Enabled Application Framework for the triplet of V-app, AI-app and N-app



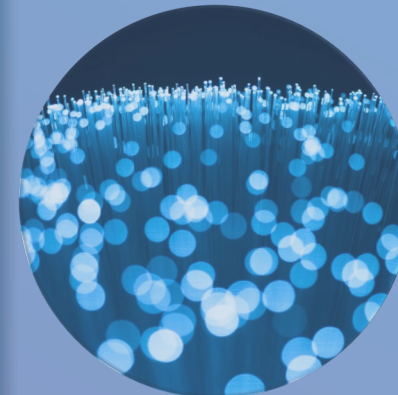
Conduct 6G Trials to Assess AI, Network and Application Performance, concentrating on the principles of "sustainable 6G"



Integrate Advanced 6G Applications across 6 6G-SNS and non-SNS Testbeds



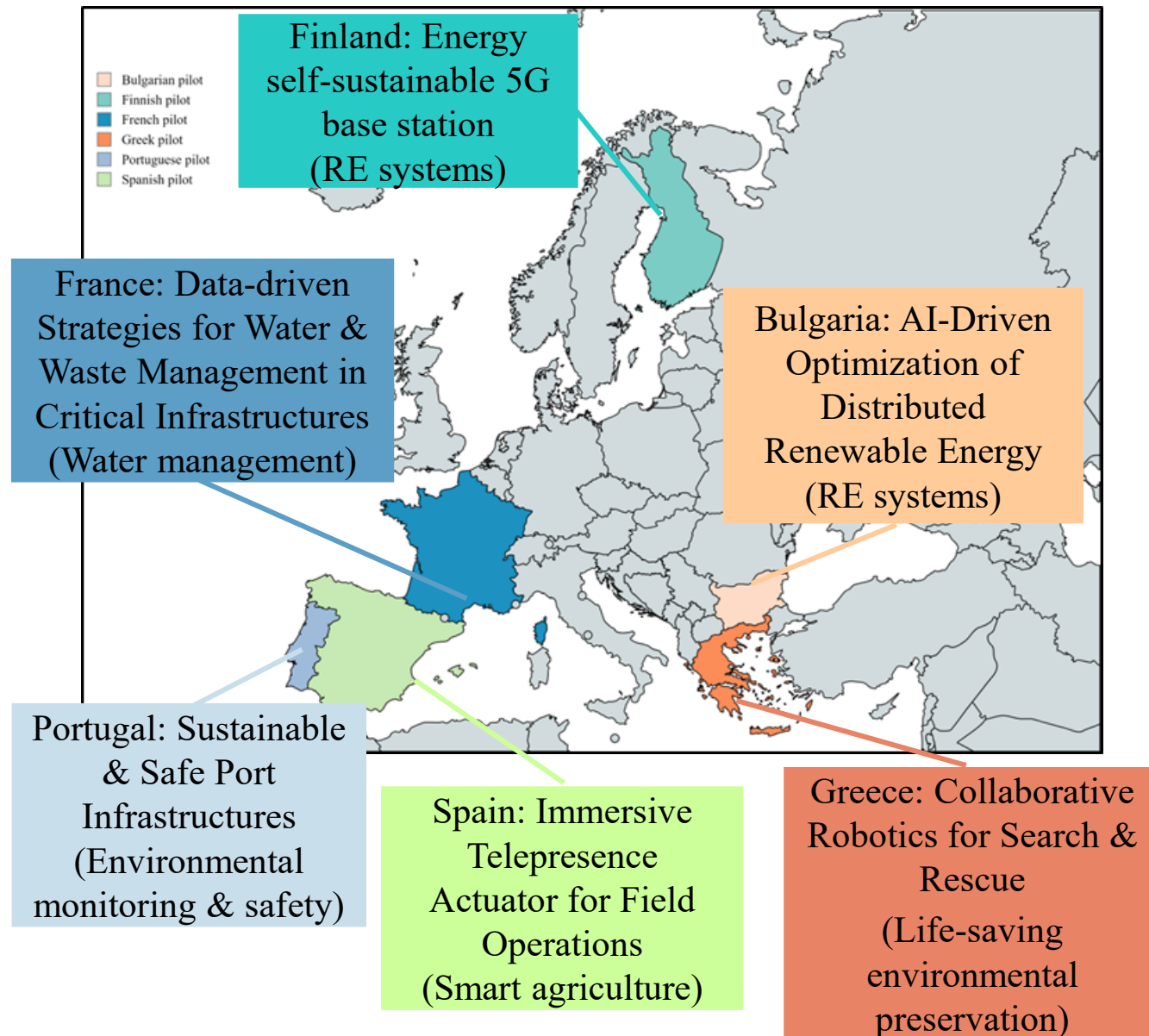
Evaluate the societal and environmental impact of 6G trials to ensure alignment with sustainability goals and societal needs and create new business models



Maximize the impact and adoption of 6G-VERSUS results through dissemination, communication, capacity building, standardization efforts, and exploitation measures.

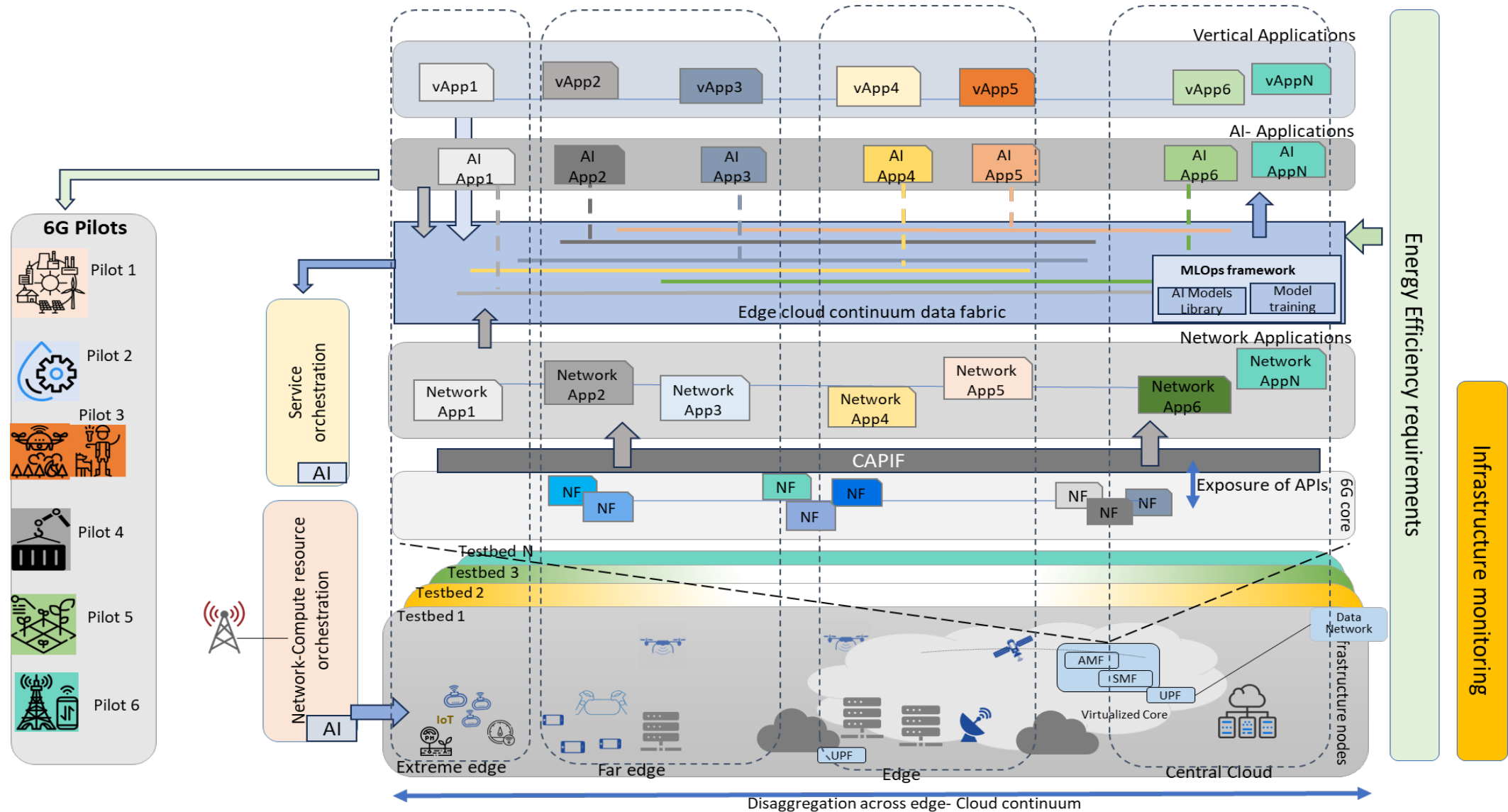
Sustainability

Pilot clusters



- 6 large-scale E2E pilots for 5 verticals
- Real-life sustainability use cases
- Integration with 5G/6G testbeds
- Novel technology architecture and methodology

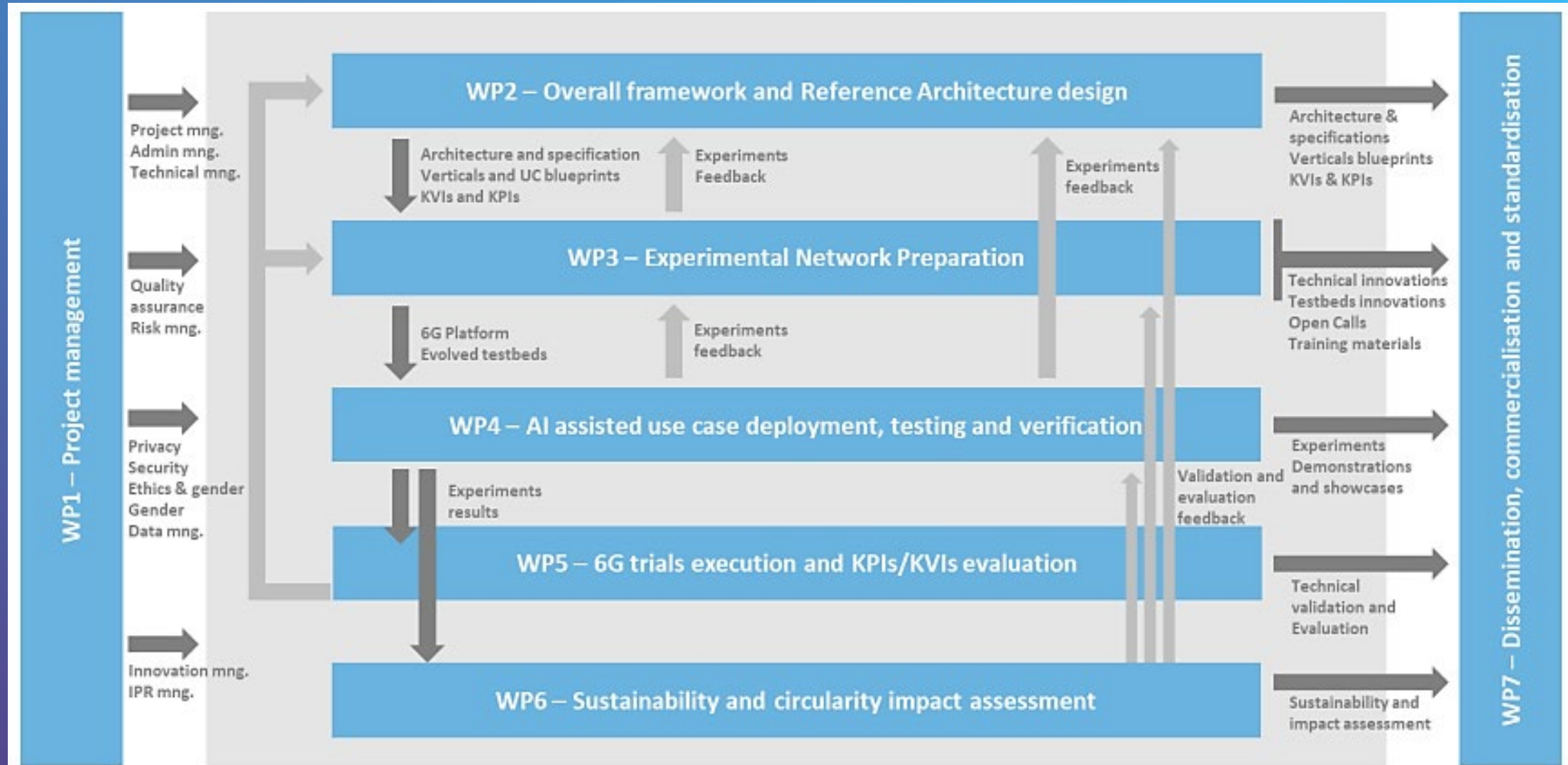
6G-VERSUS triad architecture model



6G-VERSUS ambitions

Ambition	Initial TRL	Final TRL
Interaction with the Core Network	5	6
Transformation of the verticals into 6G applications	5	6
Energy Efficiency as a Service	5	6
ML-enabled continuum from central cloud to far edge	5	6
UAVs as B5G/6G network relays	4	6
Optimizing Energy Usage with RedCap Technology	4	6
Low latency/deterministic communications	3	5
Two-step RACH	3	6
End-to-end protocols for precision agriculture	3	6
ORAN intelligent controller towards reduced energy consumption	4	6

Work plan



Expected outcome

Scientific impact

- Through the exploration of novel concepts such as network core openness, energy efficiency analysis, and ML-enabled network orchestration -> generate new knowledge and insights of the capabilities of 6G technology for verticals and for advancing sustainability.

Technical impact

- By developing advanced frameworks for network interaction, vertical application transformation, and energy efficiency analysis -> demonstrate 6G vertical solutions that enhance the performance, reliability, and sustainability of communication networks.

Economic impact

- Through targeted activities focusing on SME engagement, capacity building, and technoeconomic analysis -> empower businesses and vertical industries to leverage 6G technologies for sustainable and profitable growth.

Societal impact

- Through the dissemination of project results and engagement with stakeholders -> raise awareness of the societal benefits of 6G technology and inspire broader adoption and investment in sustainable telecommunications infrastructure.

Policy impact

- Through contributions to standardization efforts, policy recommendations, and stakeholder consultations -> influence the development of policies and regulations that support the deployment of sustainable 6G technologies.



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