

The EC view about EU e-Infrastructure landscape and its future development

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Outline

Convergence: Europe's digital agenda is moving from sectoral initiatives to a connected e-infrastructure strategy

Objective: enable AI, science, public services, industry and security at European scale

Policy challenge: translate strong frameworks into deployable, interoperable, sovereign capacity

Four pillars increasingly converge:

- Compute and cloud capacity
- Data spaces and platforms
- Connectivity and backbone networks
- Rules, trust and governance

For many years, we have built our digital architecture through separate but highly valuable initiatives: high-performance computing, cloud and edge, data spaces, scientific infrastructures, connectivity programmes, platform regulation, and digital identity. Each of these has progressed significantly in its own right.

What is changing now is that these are no longer best understood as isolated policy files. They are becoming part of a single, strategic e-infrastructure landscape. That landscape underpins not just digital transformation in the abstract, but very concrete European capabilities: training and deploying AI, enabling trusted cross-border public services, supporting science and industrial innovation, reinforcing resilience, and reducing strategic dependencies.



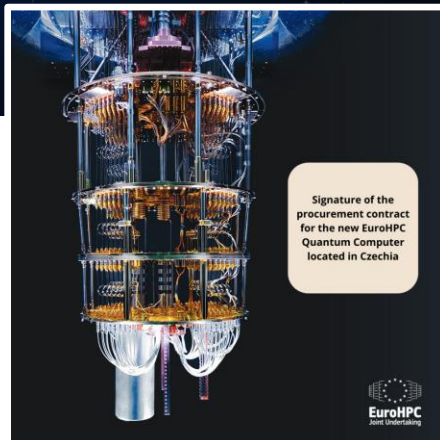
The Strategic Architecture: Infrastructure, Regulation, Trust, Sovereignty

- The EU e-infrastructure landscape can be read through four mutually reinforcing layers
- Convergence matters because AI and data-intensive services require all four layers at once
- Policy implication: move from initiative-by-initiative governance to portfolio thinking

- **Physical layer:** fibre, subsea cables, cloud-edge nodes, HPC, data centres
- **Service layer:** AI factories, EOSC, SIMPL, DestinE, sectoral data ecosystems
- **Regulatory layer:** AI Act, Data Act, DSA/DMA, eIDAS 2.0
- **Strategic layer:** resilience, security, autonomy, global partnerships



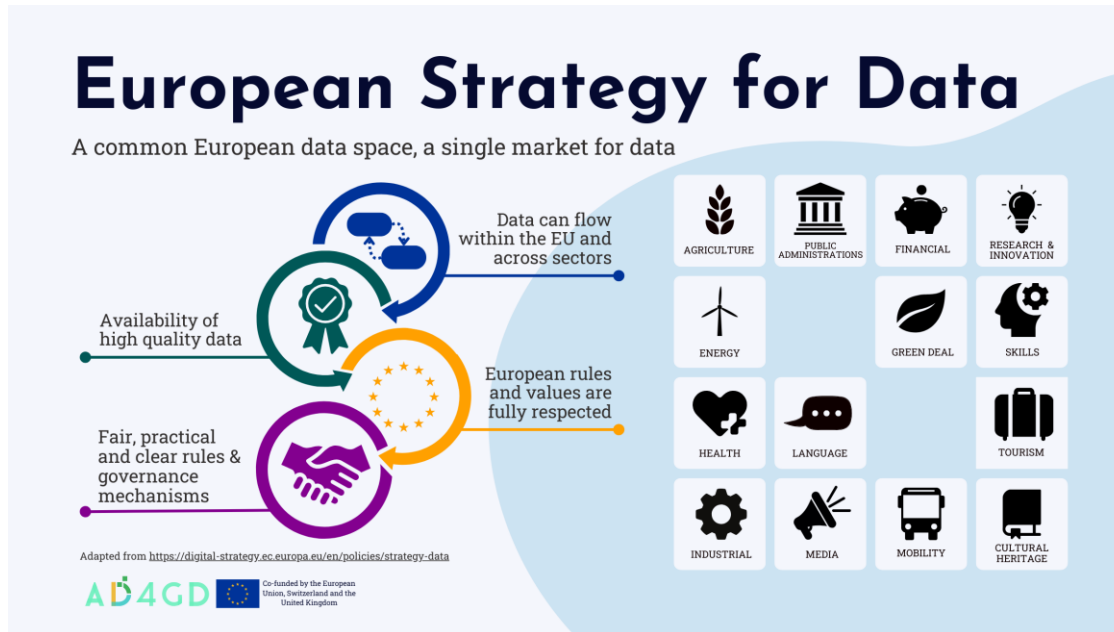
Compute as a Strategic Asset: EuroHPC, AI Factories and the Gigafactory Ambition



- Europe is positioning compute as a strategic capability, not merely a technical resource
- AI factories link supercomputing, data, talent and experimentation environments
- They can support:
 - model development and fine-tuning
 - industrial testing and validation
 - public-interest and scientific AI use cases
- The gigafactory call/ambition signals the need for next-scale AI compute ecosystems
- Key policy issue: ensure access is European, trusted, energy-aware and innovation-friendly
- Hyperconnectivity by GEANT
- European Chips Act: Supply Chain Issue



Data as the Fuel: The Data Act, Data Spaces, EOSC and SIMPL



- **EOSC:** strategic commons for research data and open science services, federation of nodes
- **SIMPL:** enabling middleware/federation logic for cloud-to-edge and data-space interoperability
- Priority: connect legal rights, technical interoperability and operational governance

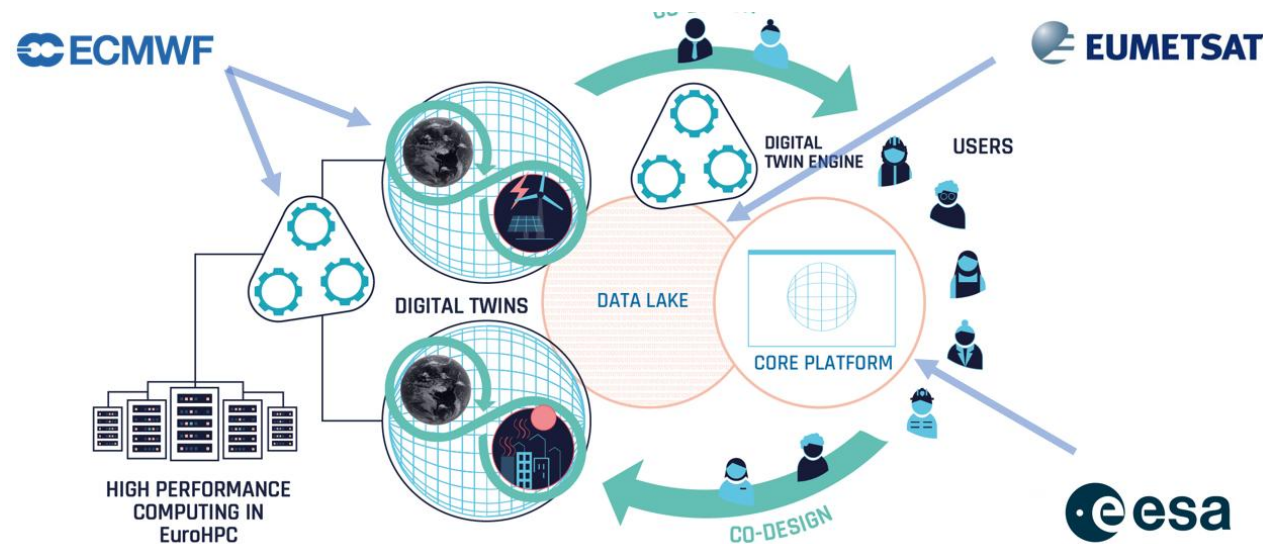
- Europe's competitiveness depends on turning fragmented data assets into reusable, trusted and portable resources
- **Data Act strengthens:**
 - access to and use of data
 - switching and interoperability in cloud/edge environments
 - fairer data-sharing conditions



From Data to Intelligence: DestinE and High-Value European Use Cases



- Strategic e-infrastructure must be justified by mission-relevant use cases
- Demonstrates the value of interoperable infrastructures for climate resilience, risk management and preparedness
- Flagship services can anchor investment in reusable European capabilities



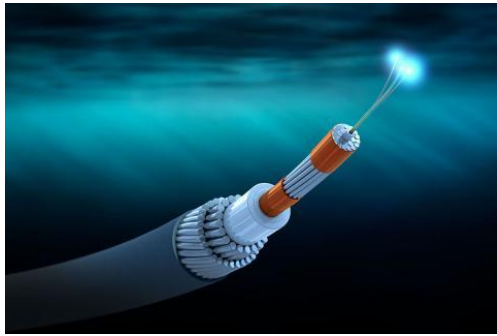
Destination Earth (DestinE) shows how Europe combines:

- HPC and cloud resources
- data integration
- modelling, simulation and digital twins
- public-policy relevance



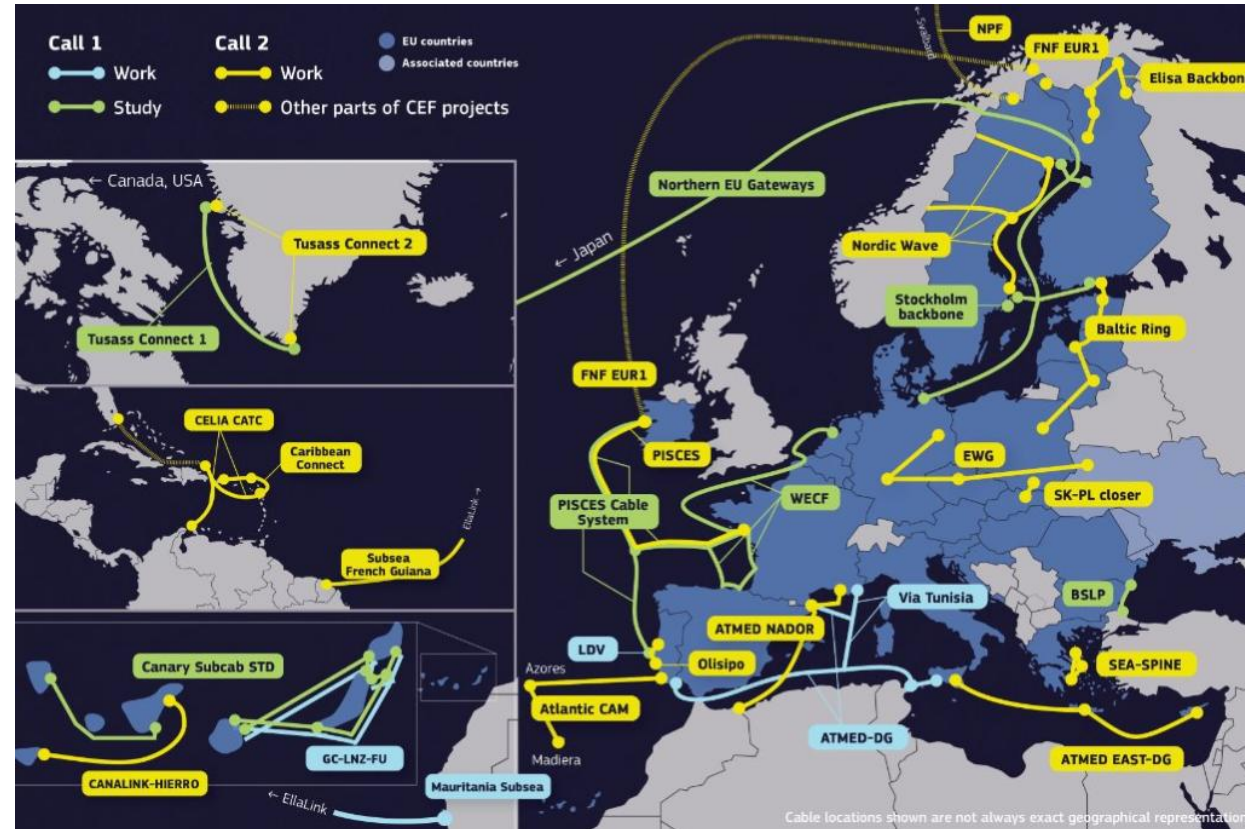
Connectivity as the Backbone: Fibre, Submarine Cables and Global Gateway

No European cloud, AI or data strategy works without robust underlying connectivity



“With the first regional cable hubs in the Baltic Sea and the Mediterranean, and funding for cable repair capabilities, Europe is moving to enhanced capabilities. We are strengthening our ability to detect threats, act faster and respond together. This is Europe investing in its own security, resilience and sovereignty. The proposals for the two hubs are ambitious and reflect a clear commitment from the Member States involved to ensure greater cooperation in the face of new security realities.”

Henna Virkkunen, Executive Vice-President for Tech Sovereignty, Security and Democracy



- **CEF Digital Global Gateways**
- 30 Projects, € 277 million, World-wide coverage
- EU Action Plan on Cable Security: mapping and risk assessment approach agreed by Group of Member States and Commission experts
- Commission funds first Regional Cable Hubs and launches €40 million call for cable repair capacity



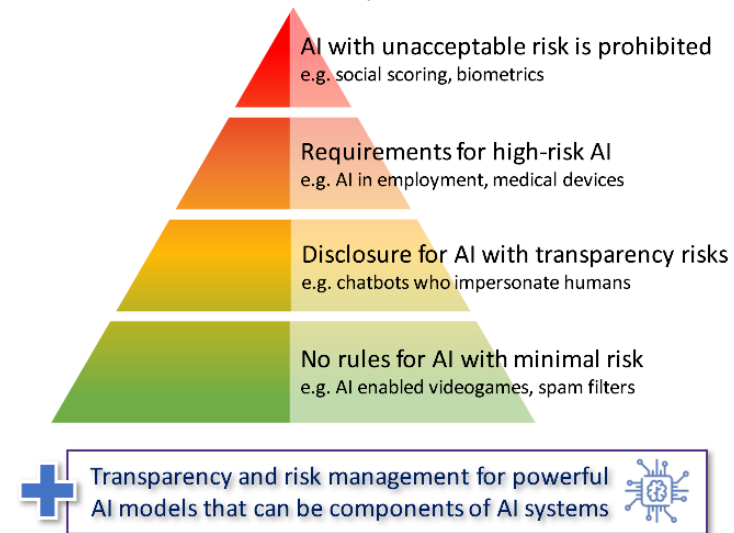
Trust by Design: AI Act, eIDAS 2.0 and the EU Digital Identity Wallet

Europe's value proposition is not only scale, but trustworthy scale



- eIDAS 2.0 / EU Digital Identity Wallet can become a trust layer for digital services and data exchange
- Potential convergence: identity, attributes, consent, authentication and organisational trust across infrastructures

Risk-based rules for AI systems:



- AI Act establishes a risk-based framework for placing and using AI on the market
- Trusted AI deployment requires more than compliance

Governance, Security and Coordination: The Role of CADA and the Sovereignty Agenda



The Technological Sovereignty Package will strengthen Europe's competitiveness, strategic autonomy and geoeconomic position.

WHAT IT MEANS



Boosting homegrown industrial capacity and autonomy across the supply chain.



Increasing choice for end-users.



Securing the supply of digital technologies.



Developing, controlling and scaling critical technologies, infrastructure, services and data.



Setting the standards for key strategic technologies.

THE PACKAGE INCLUDES

CHIPS ACT 2.0

CLOUD AND
AI DEVELOPMENT ACT

EU
OPEN SOURCE
STRATEGY

STRATEGIC ROADMAP
FOR DIGITALISATION
AND AI IN ENERGY

- The future requires stronger coordination across infrastructures, actors and policy instruments
- CADA contributes to the governance and coordination dimension of the evolving landscape
- The broader Technology Sovereignty Package frames digital capacity as a strategic public policy objective
- Need for a whole-of-portfolio approach across funding, regulation and operations

- Who controls critical layers?
- Where are dependencies concentrated?
- How do we ensure interoperability without fragmentation?
- How do we align civil, scientific, industrial and public-sector needs?



Fair and Open Digital Markets: Why DSA and DMA Matter for Infrastructure



*“These new designations mean that ChatGPT, Reddit and **Roblox** will now be held to a higher standard of scrutiny and accountability in the European Union, in line with their large impact on our citizens and society. We continue to watch the digital landscape closely and will not hesitate to designate any platform that meets the threshold for enhanced supervision under the Digital Services Act.”*

Henna Virkkunen, Executive Vice-President for Tech Sovereignty, Security and Democracy



*“Europe is at the forefront of the gaming sector. Some internationally **popular video games were made in Europe**, and the European industry's innovative potential continues to infuse the broader economy with ever-newer technological applications. It's an honour to join Gamescom in Cologne to celebrate our gaming industry.”*



Strategic Takeaways: What Convergence Should Mean for EU Action

- **Europe now possesses many of the essential components of a distinctive digital model.** It has significant infrastructure programmes. It has a uniquely developed regulatory framework for trust and fairness. It has experience with federation and interoperability. And it has a strong tradition of orienting digital policy towards public value.
- **The challenge now is not conceptual innovation alone, but integration at scale.** We need to ensure that compute investments, data frameworks and connectivity deployment reinforce one another rather than evolve in parallel. We need trust architectures that are operational, not purely legal. We need federation that works in practice for researchers, businesses and public administrations. And we need flagship use cases that demonstrate the value of Europe's approach.
- **Strategic priorities:**
 - Align compute, data and connectivity investments so that AI, cloud and data-space policies are mutually reinforcing.
 - Embed trust through infrastructures that support compliance and accountability by design, especially in relation to the AI Act and the emerging EU Digital Identity Wallet ecosystem.
 - Scale federation using practical architectures and governance models, including lessons from EOSC, SIMPL and common data environments.
 - Anchor major investments in high-value, mission-relevant use cases, from Destination Earth to industrial AI and next-generation public services.
 - Connect internal resilience with external action by treating secure connectivity, strategic partnerships and Global Gateway as part of the same sovereignty agenda.

European technological sovereignty will not be delivered by any single regulation, funding line or infrastructure asset. It will depend on convergence: the ability to connect infrastructure, regulation, trust and strategy into one coherent European digital capability.



Thank you



Peter Szegedi

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