

Sovereign Cloud & Open Source: The Future of Cloud Computing



 Madrid (Spain)



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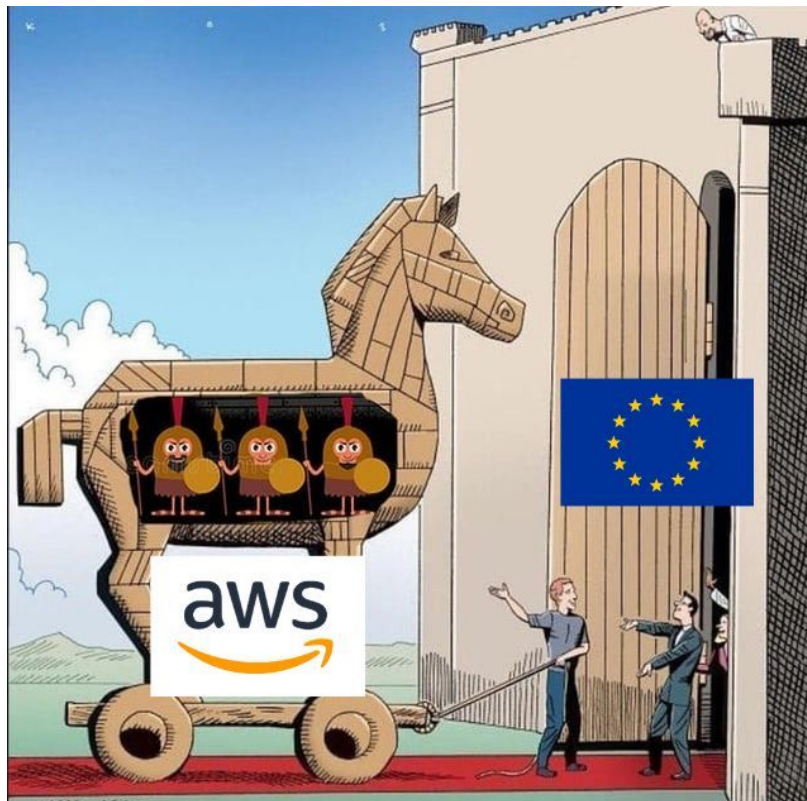
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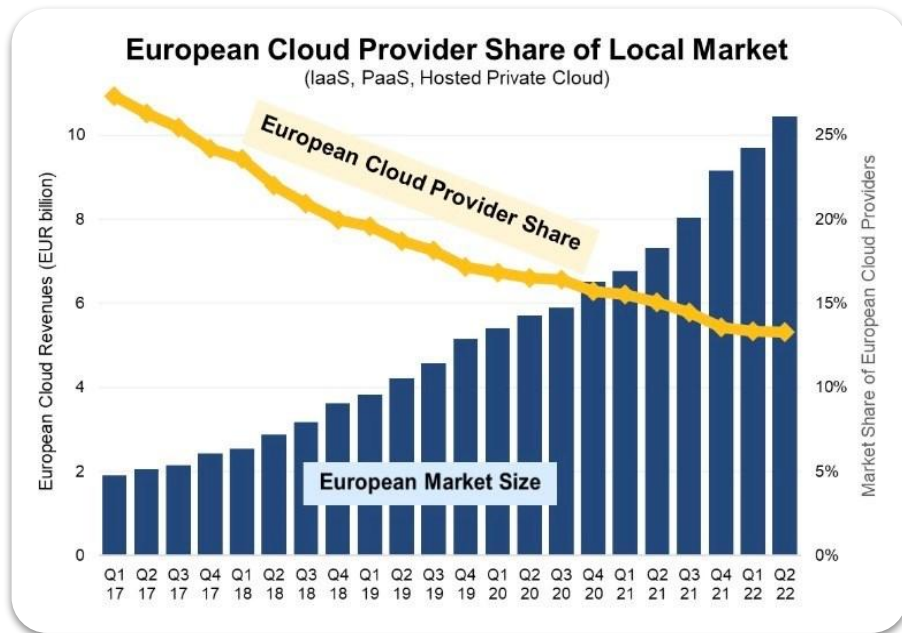
Back in the days

Open doors



What's the situation in Europe?

Reality is more complex



Since 2017, the EU cloud market has **grown more than threefold** (over €23 billion for 2020)
... but **European cloud service providers'** market share keeps declining!



Use of cloud in Europe is rising very slowly

Only 36% of European enterprises used cloud services in 2020, mostly for simple services such as for email and storage of files. This slows down Europe's green & digital transformation, and the new data economy.



Small market share for European actors

The largest European cloud provider accounts for less than 1% of total revenues generated in the European market. Increasingly higher entry barriers for new CSPs, unable to compete against hyperscalers.



Investment gap

Estimated gap of 11,000 million EUR annually between what the US & China and Europe invest in cloud.

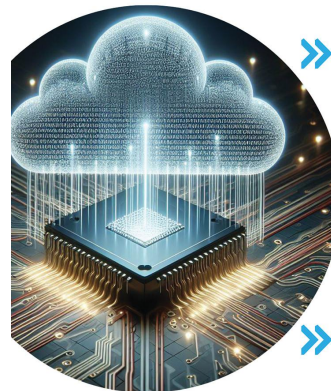


Concerns of European users

They have in practice a very limited if non-existing possibility to switch between different cloud service providers. They also express their concerns with the use of non-European cloud services for reasons of personal data protection (e.g. GDPR compliance), cybersecurity, or applicable laws (e.g. CLOUD Act).

Sovereign Cloud

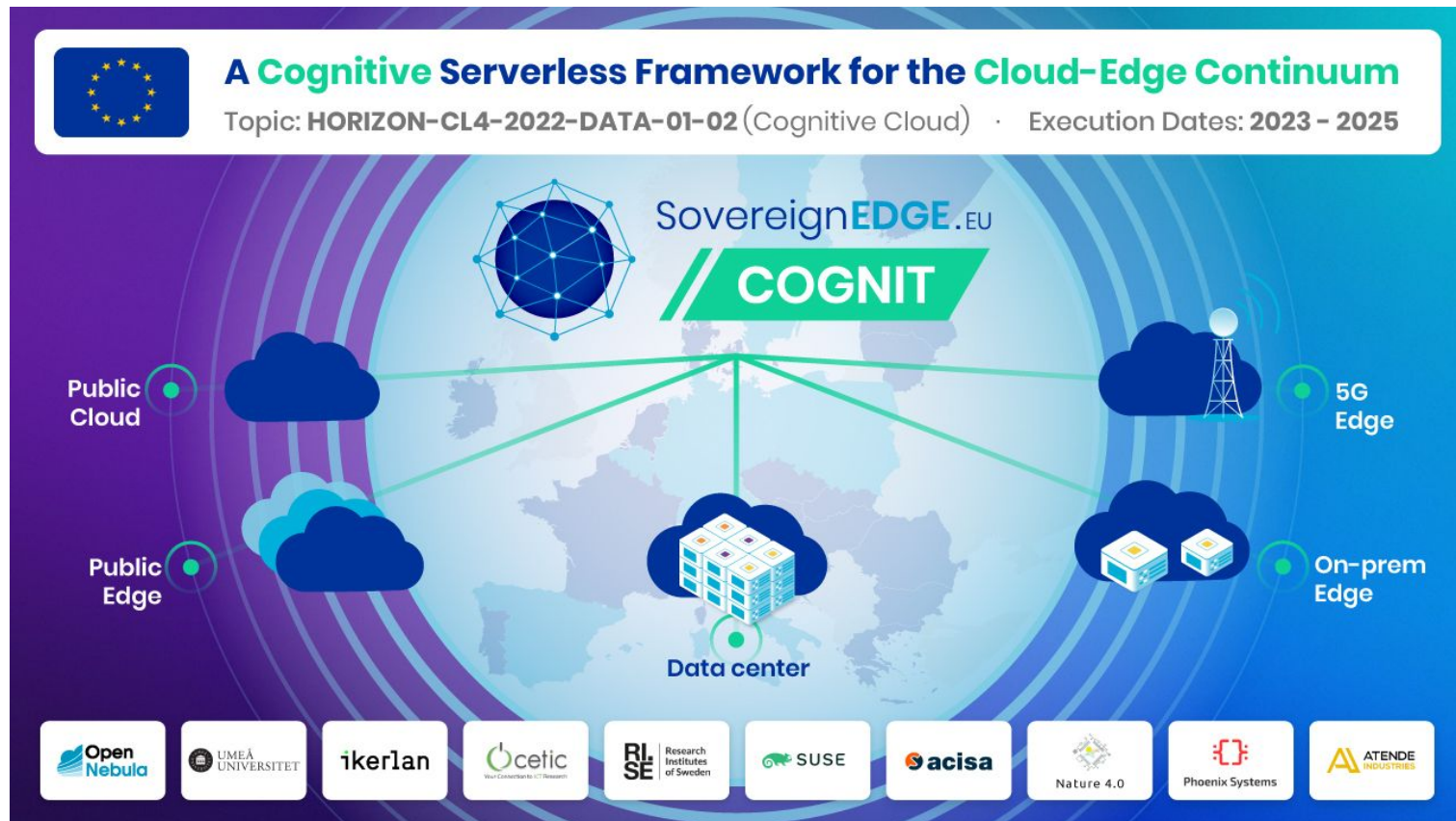
Why should we care?



European Projects

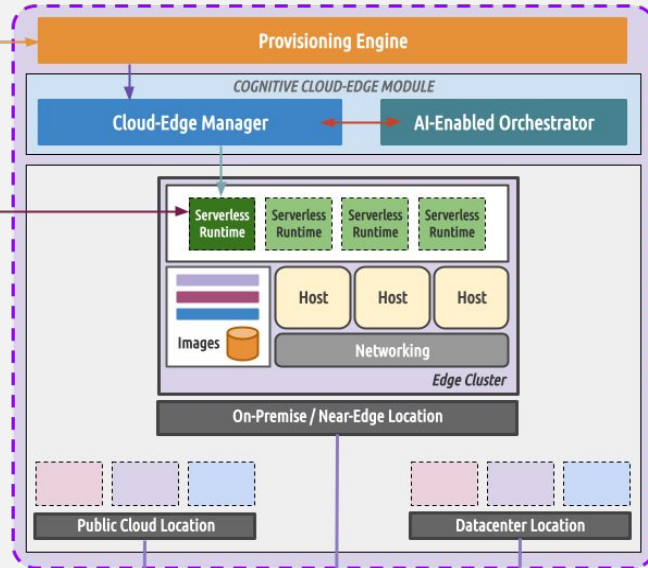
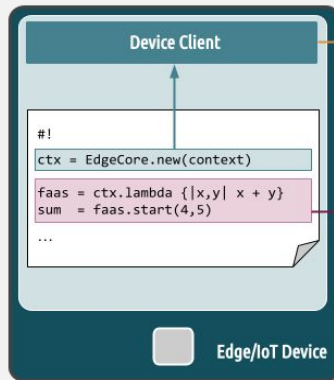
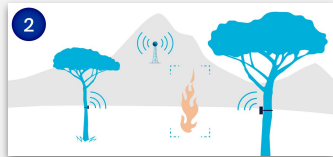
Digital Sovereignty

Take advantage of the Cloud-Edge Continuum



Cloud-Edge Continuum

A distributed cloud



Distributed Cloud-Edge Continuum

FLANDERS
INNOVATION &
ENTREPRENEURSHIP

Flanders
State of the Art

BO
SA

REPUBLIC OF CROATIA
Ministry of Regional
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MINISTÈRE
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Égalité
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Federal Ministry
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MINISTRY FOR
INNOVATION AND TECHNOLOGY



Ministero delle Imprese
e del Made in Italy



Ministry of Economics
Republic of Latvia



LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Économie



Ministry of Economic Affairs
and Climate Policy

KANCELARIA PREZESA
RADY MINISTRÓW



REPUBLIC OF SLOVENIA
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REPUBLIC OF SLOVENIA
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Y TRANSFORMACIÓN DIGITAL

The new €3B IPCEI Cloud

Building a Sovereign Edge Cloud based on European technologies



Commission approves up to €1.2 billion support by 7 Member States for an IPCEI on **Next Generation Cloud Infrastructure and Services** (IPCEI CIS)

Workstream 1
**Cloud-Edge Continuum
Infrastructure**

Workstream 2
**Cloud-Edge
Capabilities**

Workstream 3
**Advanced smart data
processing tools
and services**

Workstream 4
**Advanced
Applications**

- ◆ Contributes to key EU objectives
- ◆ Boosts breakthrough **innovation**
- ◆ Generates **positive spill-over effects** across the EU
- ◆ Ensures **proportionate public spending**
- ◆ Ensures **fair competition**



- ◆ 7 Member States: 
- ◆ 19 **companies** Large Enterprises and SMEs
- ◆ 19 research, development and first industrial deployment **projects**
- ◆ +90 indirect partners
- ◆ Expected to unlock **€1.4 billion** of private investments



Welcome IPCEI-CIS

A sovereign stack for the sovereign cloud



(WS4) Use Cases



4.1. Mobility,
Transport &
Travel



4.2. Energy



4.3. Manufactur-
ing & Industry
4.0/5.0



4.4. Health



4.5. Infrastructures,
Smart Buildings
& Cities



4.6. Tourism
& Cultural
Heritage



4.7. Agriculture
& Environment



4.8. Media

(WS3) Smart Advanced Data Processing



3.1. Data Exchange



3.2. Artificial Intelligence



3.3. App Deployment



3.4. Service Orchestration



3.5. Ecosystem Services

(WS2) Cloud-Edge Capabilities

2.1. Federation and Multi-cloud

2.2. XaaS Layer

2.3. Integration, Monitoring, Mgmt and Optimization



2.4. Operating Systems and Virtualization

2.5. Technical Requirements and Architecture

2.6. Cross Cutting Security

2.7. Cross Cutting Sustainability

(WS1) Cloud-Edge Infrastructure

Private Cloud



On-premises
Datacenter

Public Cloud



100 - 1000 km
10-20 ms

5G / Near Edge



1 - 100 km
2 - 5 ms

Private Edge

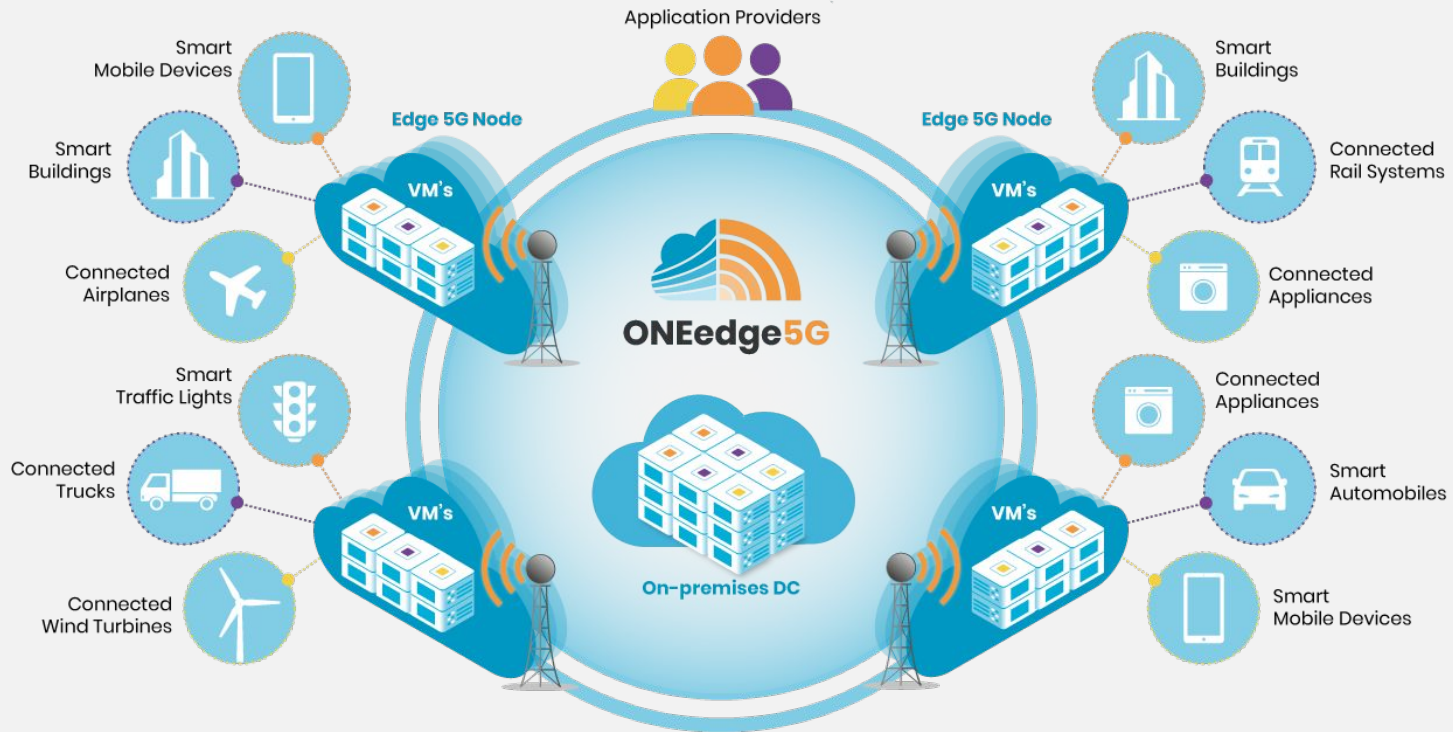


< 1 km
1 ms

DATACENTER-CLOUD-EDGE-CONTINUUM

OneEdge5G

Innovation project - Open Source





Funded by the  IPCEI-CIS

virt8ra, the IPCEI-CIS software stack for virtualization

Using **European Open Source Technologies** to Build a
Sovereign, Multi-Provider Edge Cloud for the EU

PRESS RELEASE



Open Source

What it has to do with sovereignty?

- Better transparency
- More efficient use of resources
- Interoperability
- Open Standards
- Technological Democratization





IPCEI-CIS

Next-Generation European Platform for the Datacenter-Cloud-Edge Continuum

Initiative supported by the Spanish Ministry for Digital Transformation and Civil Service through the **ONEnextgen Project: Next-Generation European Platform for the Datacenter-Cloud-Edge Continuum** (UNICO IPCEI-2023-003) and co-funded by the European Union's NextGenerationEU instrument through the Recovery and Resilience Facility (RRF).



Financiado por
la Unión Europea
NextGenerationEU



Plan de Recuperación,
Transformación
y Resiliencia



MINISTERIO
PARA LA TRANSFORMACIÓN DIGITAL
Y DE LA FUNCIÓN PÚBLICA

SECRETARÍA DE ESTADO
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E INFRAESTRUCTURAS DIGITALES



OpenNebula.io/IPCEI-CIS

Feedback! 🖱️



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