



Cloud Computing in Europe

Appendix 17

European Cloud Computing

Portfolio

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CONTENTS

LIST OF INITIATIVES PROFILED IN THE EUROPEAN CLOUD COMPUTING PORTFOLIO	4
R&I Initiatives	4
Deployment initiatives	9

LIST OF INITIATIVES PROFILED IN THE EUROPEAN CLOUD COMPUTING PORTFOLIO

This appendix shows the initiatives (R&I and deployment) that have been included in the Portfolio and addressing federation, edge, and green IT.

The initiatives listed below will be consultable in the H-CLOUD online catalogue, which will include detailed descriptions, information on related stakeholders, and links to official websites.

R&I Initiatives

Name	H-CLOUD key area	Short Description
ACTICLOUD	Cloud federation	Novel cloud computing architecture for the drastically improved management of cloud resources
BEACON	Cloud federation	An effective, agile, and secure federation of cloud networking resources
MUSA	Cloud federation	A security framework to support the security-intelligent lifecycle management of distributed applications over heterogeneous cloud resources
CYCLONE	Cloud federation	The management of multi-cloud application deployment, software defined networks, and federated entities
ENTICE	Cloud federation	Enables the integration, interoperability, and federation of storage providers
M-Sec	Cloud federation	A collaborative project between the EU and Japan, strengthening connections in the technological spheres of big data, IoT, blockchain, and cloud computing
SSICLOPS	Cloud federation	Focuses on techniques for the management of federated private cloud infrastructures – in particular, cloud networking techniques
CHOReVOLUTION	Cloud federation	Provides an environment to enable interactions between various services currently provided by local authorities and to deliver advanced applications based on, for example, traffic conditions and local weather information
ATMOSPHERE	Cloud federation	Considers a broad spectrum of properties and their measures, and supports the building, deployment, measurement, and evolution of trustworthy cloud resources, data networks, and data services

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PRISMACLOUD	Cloud federation	Enables secure and trustworthy cloud-based services by improving and adopting novel tools from cryptographic research
MELODIC	Cloud federation	Enables data-intensive applications to run seamlessly within defined security, cost, and performance boundaries on geographically distributed and federated cloud infrastructures
RESTASSURED	Cloud federation	Provides solutions to specific technical concerns around data protection in the cloud (such as geo-location restrictions on personal data), which are imposed by the multi-stakeholder and decentralised dynamic nature of federated cloud systems
SUNFISH	Cloud federation	Provides infrastructure and technology to enable public sector players to integrate their computing clouds
ACCORDION	Cloud federation Edge computing	Opportunistically brings together edge resources/infrastructures (public clouds, on-premises infrastructures, telecom resources, and even end devices) in pools, defined in terms of latency, that can support next-gen application requirements
SESAME	Cloud federation Edge computing	Supports the Cloud-Enabled Small Cell (CESC) concept, a new multi-operator-enabled small cell that integrates a virtualised execution platform (i.e., the Light Data Center) for deploying Virtual Network Functions (NVFs), supporting powerful self-x management, and executing novel applications and services inside the access network infrastructure
FNS-Cloud	Cloud federation Green IT	A cloud solution that aims to increase the exploitation of food and nutrition security (FNS) knowledge by federating FNS data on diet, health, and consumer behaviour, and aims to promote the exploitation of sustainable agriculture and organic farming
Pledger	Edge computing	A new architectural paradigm and a toolset that will pave the way for next-generation edge computing infrastructures
DECENTER	Edge computing	Delivers a robust fog computing platform covering the whole cloud-to-things continuum to

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		provide the AI application-aware orchestration and provisioning of resources
SELFNET	Edge computing	Designed and implemented an autonomic network management framework to achieve self-organising capabilities in managing network infrastructures by automatically detecting and mitigating a range of common network problems currently still being manually addressed by network operators
RAPID	Edge computing	A secure unified model whereby almost any device or infrastructure – ranging from smartphone, notebook, laptop, and desktop to private and public cloud – can operate as an accelerated entity and/or as an accelerator serving other, less-powerful, devices in a secure way
CLARUS	Edge computing	Enhances trust in cloud computing services by developing a secure framework for the storage and processing of data outsourced to the cloud, allowing end users to monitor, audit, and retain control of the stored data without impairing the functionality or cost-saving benefits of cloud services
CLASS	Edge computing	Aims to develop a novel software architecture to help big data developers combine data-in-motion and data-at-rest analysis by efficiently distributing data and process mining along the compute continuum (from edge to cloud) in a complete and transparent way, while providing sound real-time guarantees
DITAS	Edge computing	Provides a framework, composed of an SDK and an execution environment, that aims to overcome barriers now hampering the adoption of cloud computing and aims to increase the adoption of fog computing by exploiting the full potential of these two paradigms in a synergic way
FogProtect	Edge computing	Delivers new and advanced architectures, technologies, and methodologies to ensure end-to-end data protection across the computing continuum, from cloud data centres through fog nodes to end devices
LightKone	Edge computing	Provides a scientifically sound and industrially validated model for doing general-purpose computation in edge networks

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mF2C	Edge computing	Designing an open, secure, and decentralised multi-stakeholder management framework, including novel programming models, privacy and security, data storage techniques, service creation, brokerage solutions, SLA policies, and resource orchestration methods
NECOS	Edge computing	Addresses the limitations of current cloud computing infrastructures to respond to the demands of new services, as presented in two use cases that will drive the whole execution of the project
PrEstoCloud	Edge computing	Makes substantial research contributions in the cloud computing and real-time data intensive applications domains to provide a dynamic, distributed, self-adaptive, and proactively configurable architecture for processing big data streams
RECAP	Edge computing	Developing the next generation of cloud/edge/fog computing capacity provisioning via targeted research advances in cloud infrastructure optimisation, simulation, and automation
RAINBOW	Edge computing	Designing and developing an open and trusted fog computing platform that facilitates the deployment and management of scalable, heterogeneous, and secure IoT services and cross-cloud applications (i.e. microservices)
FITOPTIVIS	Edge computing	Developing an integral approach to the smart integration of image- and video-processing pipelines for CPS, covering a reference architecture supported by low-power, high-performance smart devices and by methods and tools for combined design-time and run-time multi-objective optimisation within system and environment constraints
FAR-EDGE	Edge computing	A joint effort to lead experts towards the smooth and broad adoption of virtualised factory automation solutions based on Future Internet technologies
COMMUNITY CLOUD	Green IT	Developing a cloud service to replace centralised server farms with a distributed data centre based on a peer-to-peer network free of infrastructural costs

Name	H-CLOUD key area	Short Description
CLOUDWATCH2	Green IT	Supporting EU R&D on cloud computing, software, and services across the full innovation lifecycle and move to market, promoting technology advancements and supporting OS software reusability
AFarCloud	Green IT	Providing a distributed platform for autonomous farming to enable the integration and cooperation of agriculture cyber-physical systems in real-time to increase efficiency, productivity, animal health, and food quality and to reduce farm labour costs
Blue Cloud	Green IT	Aiming to federate leading European marine data management infrastructures and horizontal e-infrastructures – data resources, computing resources, and analytical service resources – to capitalise on what already exists and to develop and deploy a Blue Cloud framework as a thematic EOSC cloud

Deployment initiatives

Name	H-CLOUD key area	Sector	Focus
CINECA	Cloud federation	Public sector	High performance computing, focusing on IT solutions and services for universities and for the Italian Ministry of Education and Research
GDS	Cloud federation	Public sector	Centre of excellence in digital, technology, and data, supporting the UK central government
PagoPA	Cloud federation	Public sector	Increasing the uptake of trusted digital payments in the public sector
SPOTES	Cloud federation	Public sector	Enhancing the IT services experience for French civil servants
BUILD TO SHARE	Cloud federation	Public sector	Accelerating the digital transformation of the Irish government and providing common capabilities across departments of different size
BMI	Cloud federation	Public sector	Sharing secure data-centre infrastructure across the German federal government
STATENS IT	Cloud federation	Public sector	Managing IT operations to improve capacity utilisation and asset maintenance
LOGIUS	Cloud federation	Public sector	Offering lower expenditure, improved efficiency, and better services for citizens and businesses through smart ICT solutions
VALTORI	Cloud federation	Public sector	Providing high-quality, reliable, and harmonised basic IT services
CSI Piemonte	Cloud federation	Public sector	Delivering shared IT infrastructure, applications, and end-user support services
Trentino Digitale	Cloud federation	Public sector	Delivering shared IT infrastructure, applications, and end-user support services
SIAG	Cloud federation	Public sector	Delivering shared IT infrastructure, applications, and end-user support services
Arsenà.IT	Cloud federation	Public sector	Delivering a shared platform and application services

Name	H-CLOUD key area	Sector	Focus
ARIA	Cloud federation	Public sector	Delivering shared IT infrastructure, applications, and end-user support services
Lepida	Cloud federation	Public sector	Delivering shared IT infrastructure, applications, and end-user support services
Insiel	Cloud federation	Public sector	Delivering shared IT infrastructure, applications, and end-user support services
Dataport	Cloud federation	Public sector	Delivering a shared platform and application services
AGID Cloud Marketplace	Cloud federation	Public sector	A catalogue of AGID-certified cloud service providers
BRZ	Cloud federation	Public sector	Delivering shared IT infrastructure, applications, and end-user support services
NICS-ESS	Cloud federation	Public sector	Delivering efficient and effective customer-focused services, combining HR, IT, finance, digital services, and property management
G-Cloud	Cloud federation	Public sector	A catalogue of cloud services certified by the UK government and included in framework procurement agreements
P-Direkt	Cloud federation	Public sector	HR application and business processing services
NoiPA	Cloud federation	Public sector	HR application and business processing services
LGMA	Cloud federation	Public sector	HR application and business processing services
SPCSS	Cloud federation	Public sector	Delivering IaaS, PaaS, and SaaS services in the public sector
DCOM	Cloud federation	Public sector	SaaS solutions developed for local administration
Veeva OpenData	Cloud federation	Private sector	A science-focused subscription service for HCP, HCO, affiliation, email, and compliance data
SAP ICH	Cloud federation	Private sector	A cloud-based solution that enables pharmaceutical partners to exchange

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			serialisation information in a secure and easy manner
CODE	Cloud federation	Private sector	Driving innovation and supporting improvements in cancer care, addressing information gaps by providing timely information on anti-cancer medicine use via healthcare systems
Schneider Electric Exchange	Cloud federation	Private sector	A digital platform for energy solution collaboration and a marketplace – an open ecosystem for IoT energy management and automation solutions
Helix Nebula Science Cloud	Cloud federation	Public-private	A hybrid cloud platform linking commercial cloud service providers and publicly funded research organisations' in-house IT resources, via the GEANT network, to provide innovative solutions in support of data-intensive science
CREODIAS	Cloud federation	Public-private	Cloud infrastructure adapted to process large amounts of Earth observation (EO) data, including an EO data storage cluster and dedicated IaaS cloud infrastructure for the platform's users
WEKEO	Cloud federation	Public-private	The EU's Copernicus DIAS reference service for environmental data, virtual environments for data processing, and skilled user support
SENSORIS	Cloud federation	Public-private	A data standard and exchange for the automotive industry that defines consistency for gathering in-vehicle data
IDS	Cloud federation	Public-private	Aiming to create a secure data space that supports enterprises in different industries and of different sizes in the autonomous management of data
GAIA-X	Cloud federation Edge computing	Public-private	Aiming to connect decentralised infrastructure services, such cloud and edge, via a user-friendly homogeneous system
FIWARE	Edge computing	Public-private	A framework of open-source platform components to accelerate the development of smart solutions

Name	H-CLOUD key area	Sector	Focus
Polymore	Cloud federation Green IT	Private sector	A digital B2B market for the sustainable plastics industry (compounds, recycles, and post-industrial waste) in Europe
CODE-DE	Cloud federation Green IT	Public-private	Offering high-performance access to all Copernicus data throughout Germany
Estfeed (E- elering)	Cloud federation Green IT	Public-private	Energetics-centric IT infrastructure developed in cooperation with partners to offer all interested parties the chance to develop, market, and use smart solutions
Entso-e	Cloud federation Green IT	Public-private	Providing continuous and free access to key information on the European grid for all market participants and other stakeholders