

# Collaboration Partnership

between

**EOSC DIH and CloudSME**

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# Partnership Overview

## Brief Intro

### CloudSME

CloudSME was created to provide vendor independent cloud technology to support sustainable growth and digitalization within Europe as well as to increase its competitiveness in the worldwide economy.

cloudSME is an independent **European cloud technology** provider founded 2016 and based in Duisburg, Germany. The small company has development and coding capabilities and the experience in the implementation of about 30 industrial use cases from former EU projects. Namely the cloudSME project<sup>[1]</sup>, the COLA project<sup>[2]</sup>, and the CloudiFacturing Project<sup>[3]</sup>. CloudSME is a spin-off of the aforementioned cloudSME project and the only commercial provider of the therein resulting CloudBroker / cloudSME platform which was awarded as **best European innovation by the European Commission in 2015**. The cloudSME platform is a generic cloud-based, cloud-agnostic simulation platform which offers various opportunities to be leveraged by stakeholders (SaaS, PaaS, IaaS, HPCaaS) from different industries. Simulation software deployed on the cloudSME platform can be seamlessly migrated between heterogeneous cloud and HPC resources. The platform currently supports commercial cloud resources (Amazon and CloudSigma) as well as private and public clouds based on Open Source Cloud Middleware such as OpenStack and Open Nebula, and HPC centers (e.g. CINECA, HLRS, ROMEO, German Open Stack Cloud).

Within the COLA Project a Microservice-based Cloud Application-level Dynamic Orchestrator (MiCADO) was developed and represents one of cloudSME's baseline technologies today. **MiCADO** is a **modular multi-cloud framework to automate deployment and auto-scale application cluster** to accommodate high peak loads while also optimising resource consumption by auto-scaling at the levels of virtual machines and Kubernetes deployments.

MiCADO originally is an Open Source software and available via the GitHub Repository. A commercial version of the software, called MiCADOscale, will be further developed after the project and managed by cloudSME. With MiCADO, cloudSME is able to deliver automated scalability and orchestration on cloud computing resources which various scientific and commercial applications require. With MiCADOscale highly individual scaling logics (not only CPU-based as many IaaS Providers provide) can be used and implemented deeply within the application itself. Thereby, MiCADO enables the easy deployment, run-time orchestration and secure scalability of cloud applications on various cloud resources while optimizing resource consumption and costs.

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<sup>[1]</sup>Project cloudSME – Cloud Simulation for Manufacturing and Engineering (grant agreement no: 608886); 2013 – 2016; [www.cloudsme-project.eu](http://www.cloudsme-project.eu)

<sup>[2]</sup>Project COLA – Cloud Orchestration at the Level of Application (grant agreement no: 731574); 2016 – 2019; [www.project-cola.eu](http://www.project-cola.eu)

<sup>[3]</sup>CloudiFacturing Project - Cloudification of Production Engineering for Predictive Digital Manufacturing (grant agreement no: 768892); 2017 – today (ongoing); [www.cloudifacturing.eu](http://www.cloudifacturing.eu)



## **EOSC DIH**

The EOSC Digital Innovation Hub (DIH) is a mechanism for private companies to collaborate with public sector institutions in order to access technical services, research data, and human capital. Some of the services offered by the EOSC DIH are the following:

- Piloting and co-design: Pilots/proofs of concepts, Service/product design, PaaS/SaaS integration, Performance verification ,Testing
- Training & Support, Technical consultancy ,Service management, Commercialization & business coaching, Brokerage to funding & opportunities
- Technical Access, Compute (HTC, HPC, Cloud), Storage (Online/Archive), Data management, Research data Tools & applications
- Visibility, Media Exposure, Participation to events, Promotional print material, Inclusion in marketplace, Networking

## **Objectives**

Some of the possible collaborations are aligned with:

1. Introduce the MiCADO tool as framework that supports automated scalability of a large variety of applications in the EOSC Marketplace.
2. EOSC DIH could support CloudSME in the visibility from an operational point of view (not technical support /integration)
3. CloudSME could provide information about the DIH services to research collaborators, Cloudifactoring and COLA projects and their stakeholders.
4. In general, explore possible collaborations between the parties to promote the visibility of them in both research and commercial markets and to participate in H2020 proposals.
5. EOSC could support cloudME at the uptake of business relevant relations.

## **Activites**

Concrete actions and potential timelines:

- CloudSME will provide information about MICADO to evaluate their integration in EOSC Marketplace, Timeline: 1st December
- EOSC DIH will provide info and materials to promote the EOSC DIH services among CloudSME stakeholders. Timeline: 5th December

