Cloud4SOA focuses on resolving the semantic interoperability issues that exist in current Clouds infrastructures and on introducing a user-centric approach for applications which are built upon and deployed using Cloud resources. To this end, Cloud4SOA aims to combine three fundamental and complementary computing paradigms, namely Cloud computing, Service Oriented Architectures (SOA) and lightweight semantics. The project will propose a reference architecture and deploy fully operational prototypes.

**The Call for Interoperability**

Cloud Computing’s quick rise in the market is flourishing due to clear industry-ready benefits: a business model to decrease capital expenditure, a “pay-as-you-go” service model, public/private/hybrid Infrastructure as Service (IaaS) combinations, storage solutions, dynamic provisioning, and more.

At its high pace the Cloud paradigm also brings associated risks with vendor “lock-in” at the top of the list. Cloud vendors will be pressed to ensure interoperability with parallel (and competing) platforms as users invest more in their hosting services. The future will need a compromise between vendor-distinct innovation and user-friendly standardisation that allows movement of applications and data between providers.

Although standardisation is in its infancy for Clouds, the call for this interoperability between vendors’ platforms not only serves to overcome this barrier to adoption but also ensures increased competition in this evolving user-focused market.

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**At a glance**

**Project:**
A Cloud Interoperability Framework and Platform for user-centric, semantically-enhanced service-oriented applications design, deployment and distributed execution (STREP)

**Project coordinator:**
Francesco D’Andria
Atos Origin (ES)

**Partners:**
National University of Ireland Galway (IE), SingularLogic (GR), Centre for Research and Technology Hellas (GR), cloudControl (DE), Cyntelix (IE), Portugal Telecom Inovação SA (PT), Fraunhofer FIT (DE), RomTelecom (RO)

**Duration:**
September 2010 – August 2013

**Total cost:**
€ 4.1 M

**Website:**
http://www.cloud4soa.eu
The Cloud4SOA project contributes towards Cloud interoperability through the following research and innovation related activities:

- Identify and analyse the semantic interoperability problems within the Cloud by carrying out a comprehensive analysis on both IaaS and PaaS (Platform as a Service) layers, while including stakeholder experience, requirements and feedback. The Cloud Semantic Interoperability Framework will be the result of this exercise, acting as a roadmap for creating such user-oriented platforms.

- Resolve the most problematic semantic interoperability issues through the Cloud4SOA Reference Architecture. This introduces an open, generic architecture for a semantically interoperable Cloud, capitalising on Service Oriented Architecture, lightweight semantics and user-centric design and development principles.

- Implement, deploy and evaluate the usability, applicability and adaptability of the Cloud4SOA Reference Architecture by developing a proof of concept platform which will be applied in different scenarios and setups across 3 European industrial and business showcases.

In addition to its collaboration with standardisation bodies, Cloud4SOA will reach out to the SME participants in the European Cloud market, including service (Saas) and middleware (PaaS) providers, as well as user demands. By highlighting known and potential barriers in interoperability and portability, their consistent feedback is key towards such a framework and platform. This dynamic keeps the project practical and relevant throughout its lifecycle, needed to accurately address this rapidly evolving Cloud market.

Supporting Expert Group

Cloud4SOA will establish an expert group on Cloud Semantic Interoperability to aid the community building process for discussion and development in Europe. This group will also be an important external feedback vehicle for project results, including the Cloud4SOA Semantic Interoperability Framework.

Details on how to join the expert group can be found on our website www.cloud4soa.eu.