



Project Results

InCloudInG

Robust identity management in inter-cloud environments

EXECUTIVE SUMMARY

The transition from traditional cloud services between customer and provider to cloud broker services and cloud security deployment was the target for the ITEA InCloudInG project. InCloudInG acts as a trusted security anchor in the 'sky', implementing innovative mechanisms to securely and efficiently govern the identities and permissions of end-users in the extended environment of SaaS (Software-as-a-Service).

PROJECT ORIGINS

Cloud consumers use business applications from several cloud providers, but since they are not able to globally administer identities, consumer organisations and cloud service providers experience severe difficulties in ensuring efficient and safe management of identities. So a key business necessity for cloud service providers, and for cloud consumers, is to increase the uptake of cloud computing technology by providing robustness, trustworthiness and performance. This is especially true for applications that are considered too critical to be deployed on existing clouds. The solution lies in a modular ecosystem. Here different components are combined to offer a complete solution in which secure initialisation provides a trusted environment that makes all the components reliable. This is the approach taken by InCloudInG.

TECHNOLOGY APPLIED

Current solutions to manage interoperability between SLAs are based on purely syntactical matching, but the negotiation fails if the exact matching between the SLAs involved in the negotiation is not possible. This leads to complex and specific integration mechanisms that lack flexibility. By specifying and implementing more flexible negotiation protocols based on semantic matching of SLAs, InCloudInG solves this limitation. One of the project innovations is based on an ontology of security concepts and the definition of a logical framework to compare security



Metrology data and reports can be visualized everywhere with M3Workspace

requirements to be negotiated. This innovation enables organisations to regain control of the governance, risk management and compliance of their IT processes where these involve on-premise services or services delivered by multiple external cloud services. The key innovative results are the creation and delivery of a suite of software modules to deliver identity and access governance in inter-cloud environments: inter-cloud steering of security service level agreements, new schemes of versatile authentication for end-users accessing inter-cloud applications, and a security gateway between the enterprise perimeter and the inter-cloud domains. By delivering a cloud gateway that acts as a focal point in the organisation for authentication, identity management,

audit, reporting, etc., this software platform provides a single front-end vision to SaaS applications, to end-customers. At the same time, it still maintains the traditional on-premise management of identities and access.

The central InCloudInG business case focused on Zero Defect Manufacturing through metrology solutions in 3D dimensional inspection, virtual metrology and in-line inspections. The main objective was to enable the expansion of metrology services to manufacturing companies, especially SMEs. These cloud-based metrology services allow SME manufacturers to utilise the advanced single and multipart analytics through the cloud-based computing click-per-use service.

Security and trust are the main concerns in sharing important files, such as CAD designs, high-quality cloud points and manufacturing data and methods. InCloudInG provides real added value by ensuring the requisite security and trust to allow businesses to offer their cloud-based services.

MAKING THE DIFFERENCE

Overall, InCloudInG enables the easy administration of employees' identities, improved security, greater customer satisfaction and new job opportunities for entrepreneurs along with highly efficient company strategies. Not only does it encourage the use of inter-cloud environments for all the stakeholders of the SaaS value chain, but it also boosts their competitiveness and opens up new markets.

In terms of exploitation by the project partners, the results are already being used in various ways to improve their operations and business. Nextel, for example, intends to extend its portfolio of skills available for customers. The modules, developed in InCloudInG, for the cloud-based administration of identities are being implemented by several customers in the areas of manufacturing, logistics and road traffic management, where the control over data security will enable more sophisticated and valuable services with greater revenue.

Thanks to InCloudInG, Datapixel can exploit in complete safety the capabilities of the cloud to manage, store and analyse point clouds and 3D images and will be able to better address demanding market sectors such as aeronautics and energy, where requirements on data security are very strict. For its part, Unimetrik is already using cloud solutions to manage the metrological information of its own services. The advanced security control of data, offered by InCloudInG is being welcomed by customers and will result on the medium term in increased revenue. Innovalia is consolidating its position as technology oriented provider to business in the field of Zero Defect Manufacturing and Cybersecurity, with a special focus on the needs and concerns of SMEs.

Beia sees exploitation potential in accessing new markets by developing cloud-based products and services to meet emerging market demands. It will work on new R&D projects by using the knowhow and the experience gained from InCloudInG to continue the process of innovation. This is evident in the Cloud Computing Customer Communications Centre project financed by the European Regional Development Fund Competitiveness Operational Programme 2014-2020 and cloud consultancy for the University Politehnica of Bucharest.

Partners

Romania

Beia Consult International

Spain

Datapixel

Innovalia Association

Nextel

Unimetrik

Project start

July 2014

Project end

June 2017

Project leader

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MAJOR PROJECT OUTCOMES

Dissemination

- Several presentation/demo at conferences/fair (Metromeet, Euromold 2017, Nextel security Days, Eureka Innovation Week, IMWorld, NetFutures)
- 10 workshops with customers from manufacturing sector
- Metrology Foundation Degree (Training for manufacturing workers)

Exploitation (so far)

New products:

- Nextel Cloud box – modular solution for access management, data security and encryption for cloud based applications
- M3workspace – Cloud based metrology platform

New services:

- Design and development of security solutions for cloud migration of application and services
- Ubiquitous access to metrology data

ITEA is a transnational and industry-driven R&D&I programme in the domain of software innovation. ITEA is a EUREKA Cluster programme, enabling a global and knowledgeable community of large industry, SMEs, start-ups, academia and customer organisations, to collaborate in funded projects that turn innovative ideas into new businesses, jobs, economic growth and benefits for society.