



# **Case study: SME cloud service provider in HNSciCloud PCP**

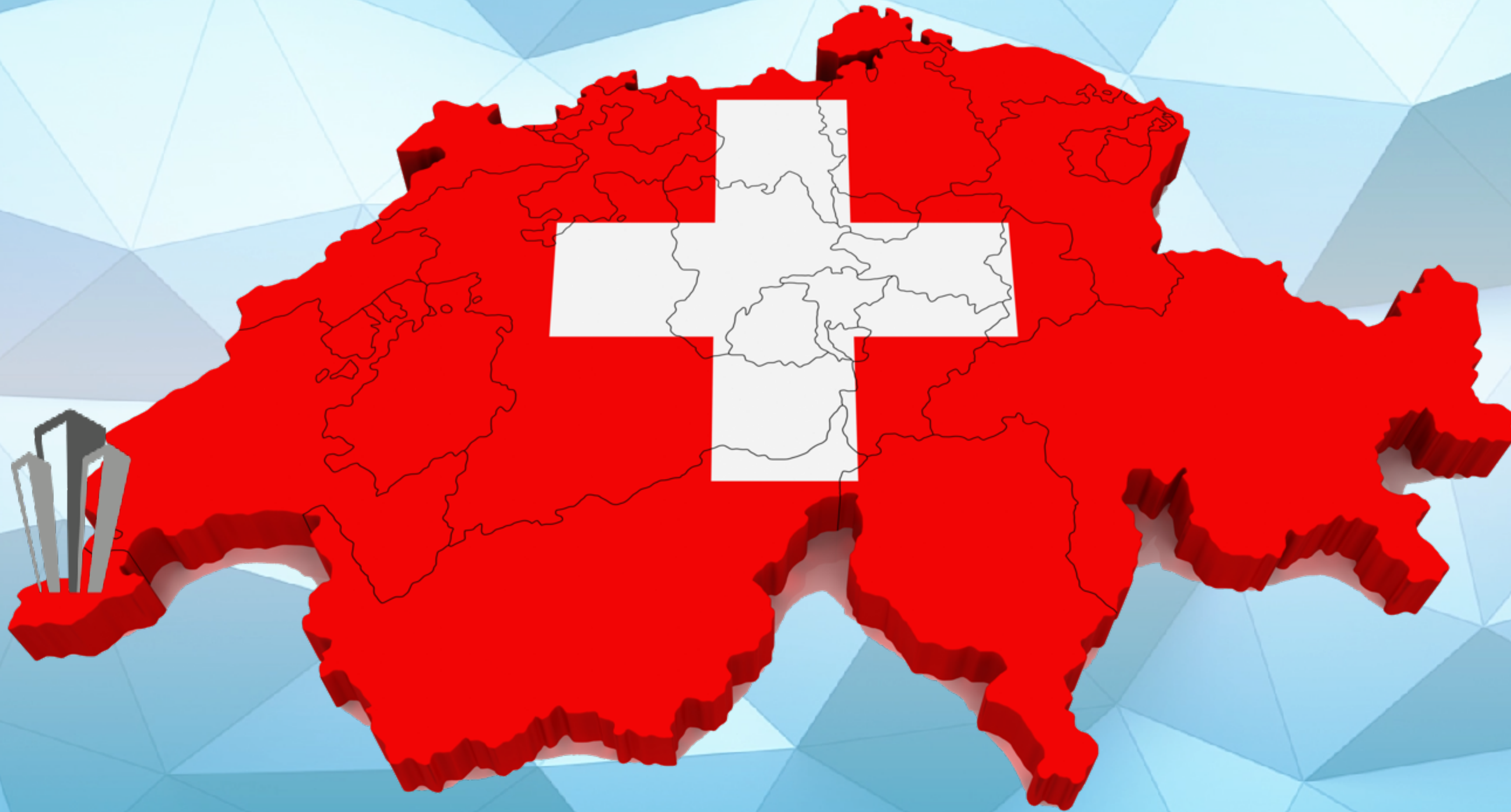
**The journey of an SME towards the European Open Science Cloud**

Marc-Elia Bégin  
CEO, Co-founder

e-IRG, June 2017



Established in Geneva, Switzerland, since 2007



**Cutting-edge software development with Swiss & European innovation**



We are... **software artisans**, expert in Cloud Computing and Application deployment automation

We provide... solutions for **Edge Computing, DevOps, Big Data, Smart City** and IoT

We help... customers **take real advantage** of cloud computing technologies and services

We deliver... **cost reduction** and **gain in productivity**, quality and **security**

We are... multi-cultural team of **highly skilled software engineers** and system administrators





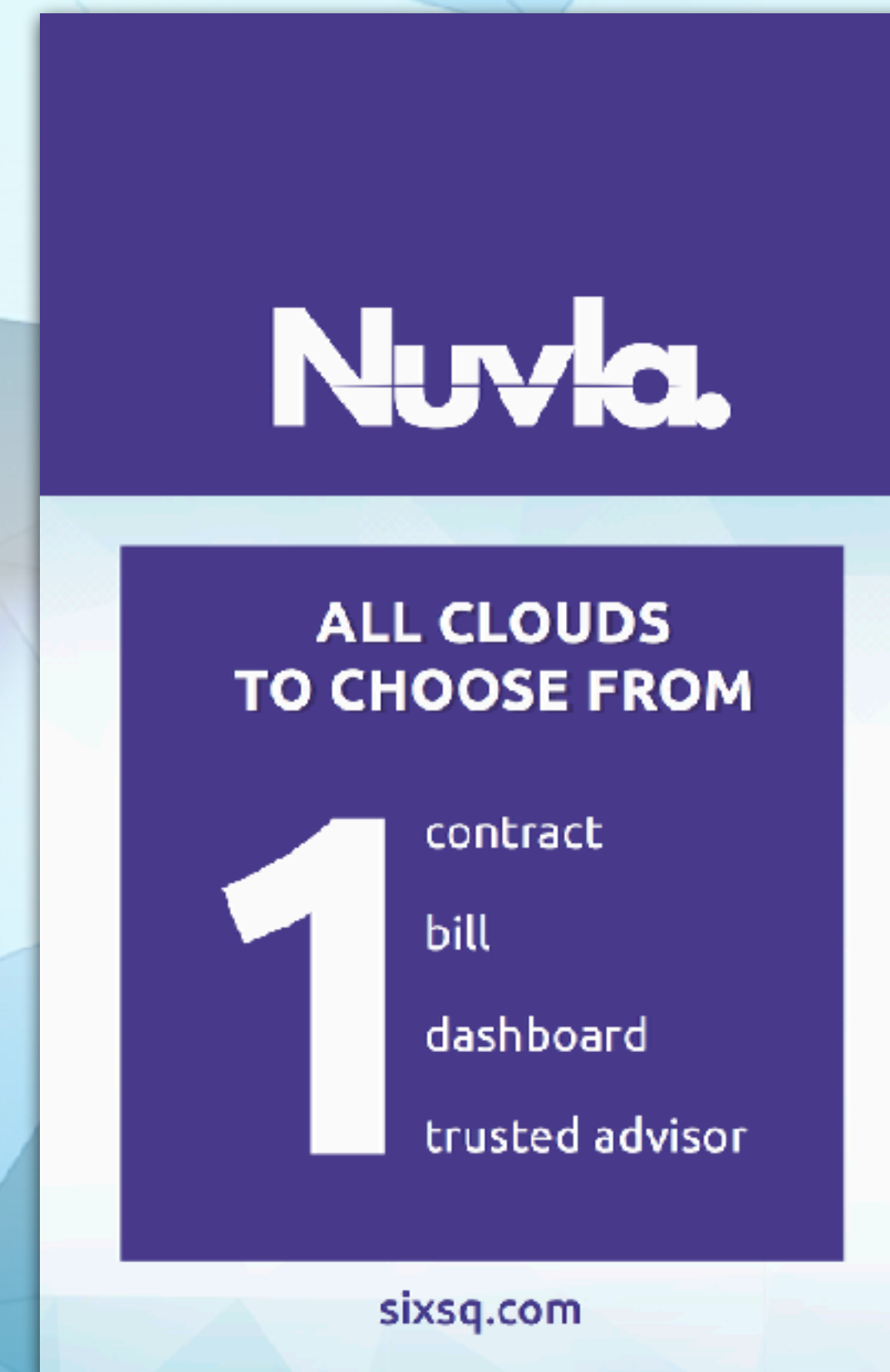
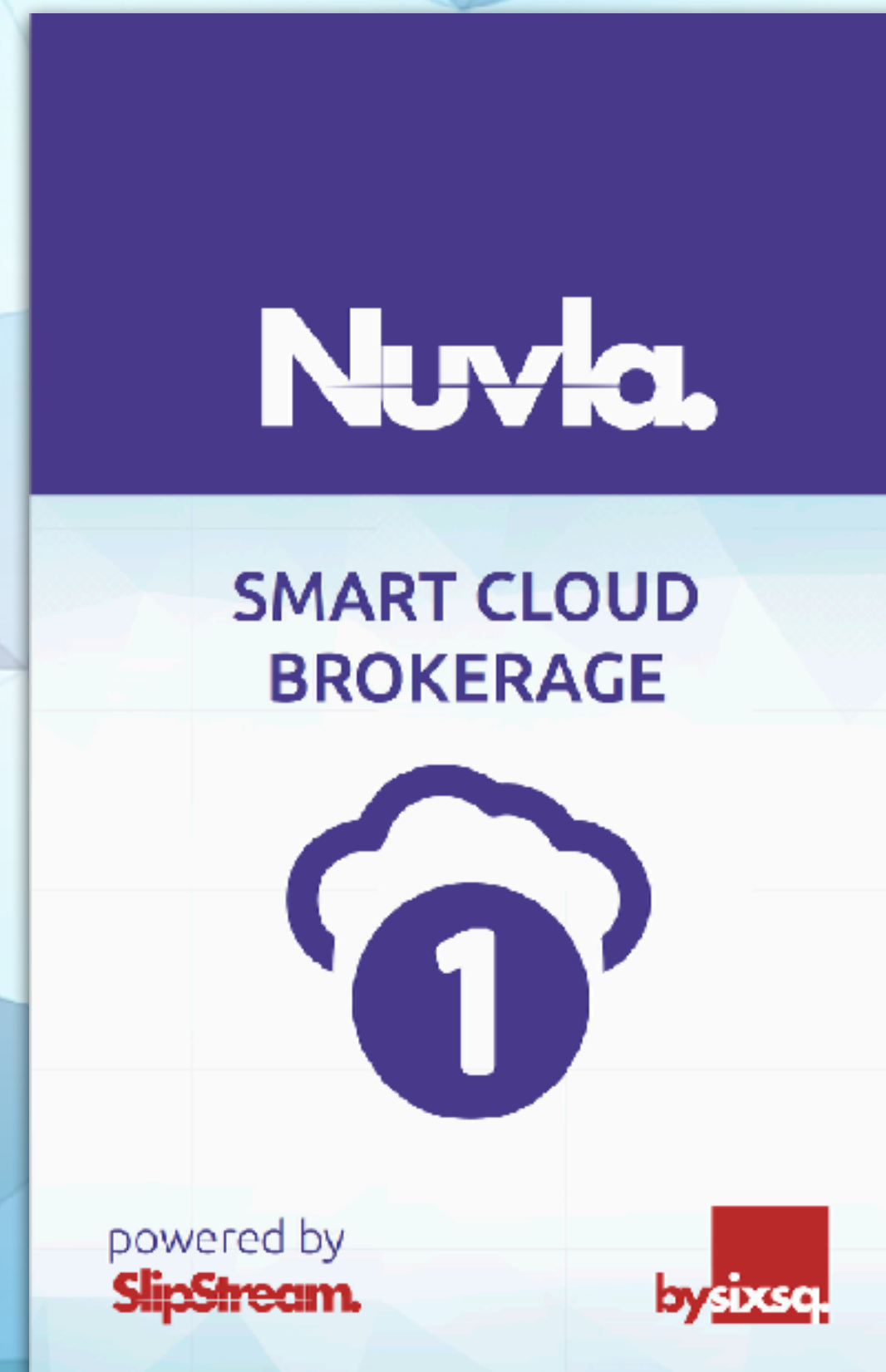
# Our products and services portfolio



**engineering, transformation and innovation**



# Our products and services portfolio



**engineering, transformation and innovation**



# Who uses our products and services?





# What people say about us?

*“ SixSq delivers the type of fluid and secure cloud solutions for application deployment automation that are critical to successful businesses. ”*



William Fellows, Analyst,  
Research Vice President and  
Co-founder, 451 Research



*“ Using SlipStream is like driving a Tesla. It’s that good! ”*



Jurry de la Mar, Head of  
International Sales, Public  
Sector, T-Systems





# What people say about the NuvlaBox?

*“ The nuvlabox allowed us to deliver a simple, fully bootstrapped cloud in a box to small businesses. With SlipStream it is a great solution for containerised application. ”*



Sebastien Goasguen, Senior Open Source Architect, Citrix

*“ The NuvlaBox provides a flexible platform to host multi-purpose and complex data intensive applications, as part of the PANOPTESSEC project, which delivers a cyber defence decision support system. ”*



Douglas Wiemer, Director, Cyber Security Solutions, RHEA Group





# H2020 Projects

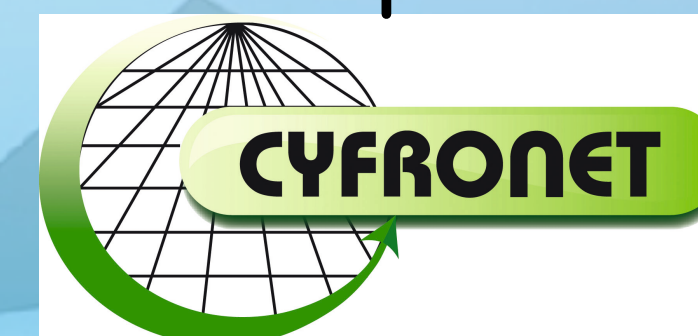
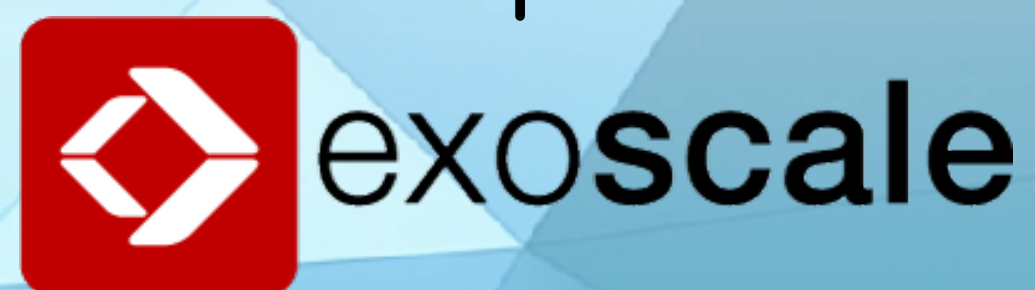
- ▶ **CYCLONE**: Complete dynamic multi-cloud application management
- ▶ **PaaSword**: Secure storage in the cloud
- ▶ **SCISSOR**: Security in SCADA and Smart Grids
- ▶ **mF2C**: bring cloud computing capabilities closer to the end-device and users
- ▶ **EU-SEC**: studying ways to improve approaches to trust, assurance and compliance in the ICT market
- ▶ **Cloud for Europe** (FP7): cloud brokerage for public administration
- ▶ **Yes we heavily leverage this investment** in HNSciCloud and our journey towards the European Open Science Cloud



# HNSciCloud RHEA Team



*Consortium Members*

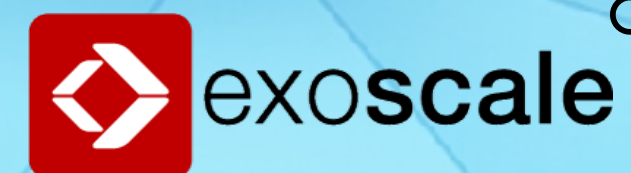
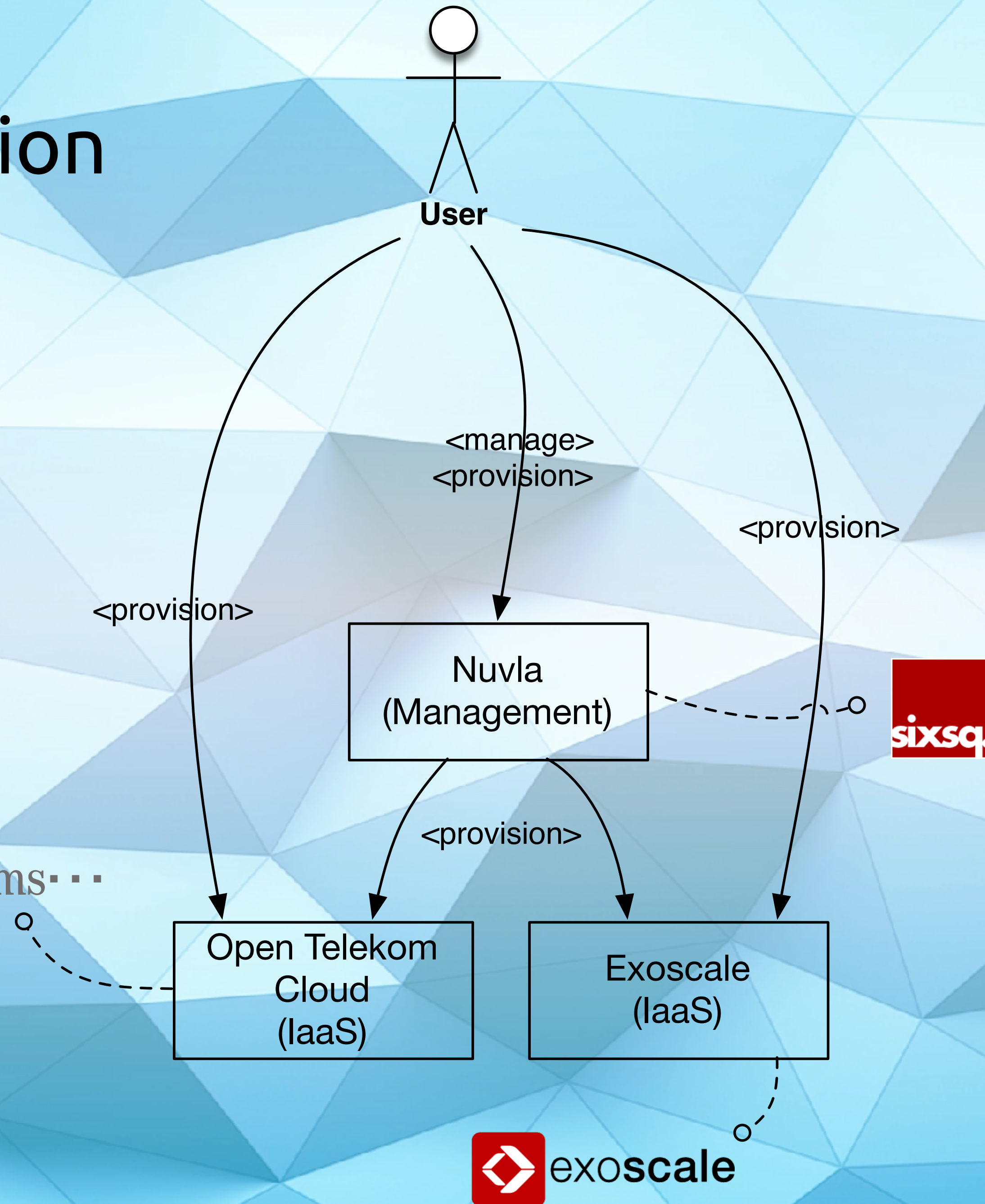




# High-level solution



T...Systems...





# The hybrid/multi-cloud service evolution

## ► **Role of SixSq in Helix Nebula**

- Initial (2011): cloud subject matter expert
- First service experiment (2013): Helix Nebula Marketplace, based on SlipStream technology and supplier IaaS (Atos, T-Systems, Orange, Exoscale, etc)
- Business convergence (2015): Nuvla, managed multi-cloud brokerage
- HNSciCloud (2016-today): leveraging Nuvla, with evolutions



# Building the European Open Science Cloud

## ► DNA of the EOSC

- Multi-cloud: both commercial and private/academic
- Hybrid-cloud: applications deployed concurrently on different cloud services
- Support *Most Economically Advantageous Tender* (MEAT), for each provisioning action
- Build on existing infrastructures:
  - GEANT for networking
  - eduGain, ELIXIR, etc. authentication federations
- Continuous monitoring of SLA



# Building the European Open Science Cloud (2)

- ▶ **Many small technical hurdles that should not be underestimated:**
  - ▶ Bulk purchase definition (what are you buying and under what terms?)
  - ▶ Account and sub-account creation and configuration
  - ▶ Quota management
  - ▶ Federated identity management integration and maintenance
  - ▶ Continuous testing and monitoring of end-to-end service availability and performance
  - ▶ Many more...
- ▶ **Practice makes perfect!!**



# Building the European Open Science Cloud (3)

- ▶ **Brokerage layer fundamental in the overall success of EOSC:**
  - ▶ Unify and harmonise cloud providers' SLA (they are different)
  - ▶ Provide trusted comparative metrics for MEAT selection
  - ▶ Remove friction in resource provisioning and migration
  - ▶ Negotiate bulk purchase and share resulting savings
- ▶ We charge 10% for this basic service and believe its is cost effective
- ▶ ... but requires volume to be profitable



# Building the European Open Science Cloud (4)

## ► **Education:**

- Native cloud applications will best leverage cloud environments
- Build applications without cloud dependencies (hidden lock-in)
- Promote best practices: object store, container technology for packaging, deployment automation, ...

► **Education is key and could accelerate transition towards cloud native applications and resulting savings**



# Building the European Open Science Cloud (5)

## ► **Current SixSq challenges:**

- Support 1'000'000 VMs under Nuvla management by 2019
- Automate accounting and billing, including federated identity management
- Support both traditional (distributed file system) and native (object store) data management models, at scale (>100 PB)
- Simplify SLA definition and monitoring for better MEAT support



# Conclusion

- ▶ HNSciCloud PCP is a key stepping stone towards EOSC
- ▶ Our SME status provides high rate of innovation and necessary independence between buyers and providers
- ▶ Volume is required to make the eco-system sustainable and
- ▶ Early adopters have a unique opportunity to shape it as anchor tenants
- ▶ **It's by doing that we get better!!**





Thanks :-)  
[sixsq.com](http://sixsq.com)