

Session on Procurement and financial schemes of digital services for research

1. Andres Steijaert (GEANT)
Clouds on the ground - making clouds accessible through pan-European framework agreements
2. Garvan McFeeley (HEAnet)
Case study: GEANT IaaS procurer
3. Dario Vianello (EMBL-EBI)
Case study: procurer from the HNSciCloud project
4. Marc-Eliaen Begin (SixSq)
Case study: SME cloud service provider in HNSciCloud PCP - *via video*
5. Jurry de la Mar (T-Systems)
Case study: cloud service provider in GEANT IaaS and HNSciCloud PCP
6. Bob Jones (CERN)
Cross-border procurement of e-Infrastructure services: Opportunities, Barriers, Use cases, Best Practices (based on the [study supported by the EGI-Engage project](#))



CLOUD ON THE GROUND

Making cloud services accessible
through pan-European framework agreements

Andres Steijaert

SURFnet
GÉANT cloud activity leader

Garvan McFeeley

HEAnet
Brokerage service manager







TO CLOUD
OR NOT
TO CLOUD?
THAT IS THE
QUESTION





There is community demand for cloud

But it is important to ensure that ...

GET IN

Assure data is handled safely and meets European and national regulations

Acquire and use services through the institutions' structures:

- Affordable and predictable cost and purchasing models (prevent bill shock)
- Limit network traffic costs and provide network integration
- Log in with institutional account

GET OUT

Be able to move data (to another provider)

CLOUD SERVICES

Users are choosers

What do we



CONSUME from others



PRODUCE ourselves



INTEGRATE with our infrastructure

Hybrid multi-cloud





40 European National Research and Education Networks (NRENs)

Collaborate in their European association GÉANT:
Network, Identity Management, Clouds

Deliver to 10.000 organisations with 50 million users

Collective hybrid multi-cloud approach

- Public clouds: procure from commercial suppliers
- Community clouds: build and operate sector specific solutions

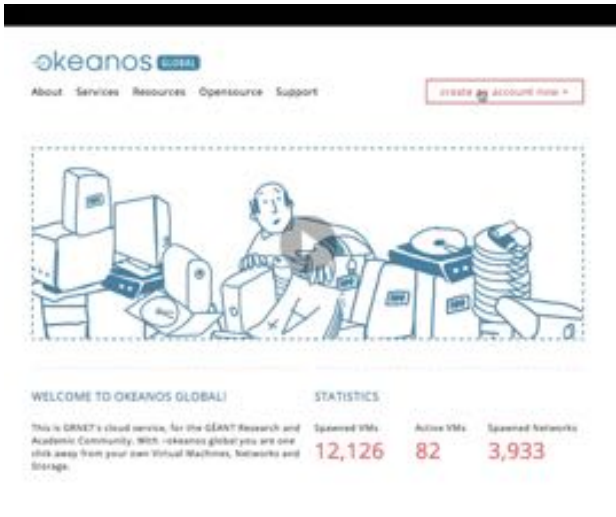
Together, establish right conditions of use:
services that are safe and easy to use,
accessible, affordable and interoperable

*1 digital single market
with many cloud services*

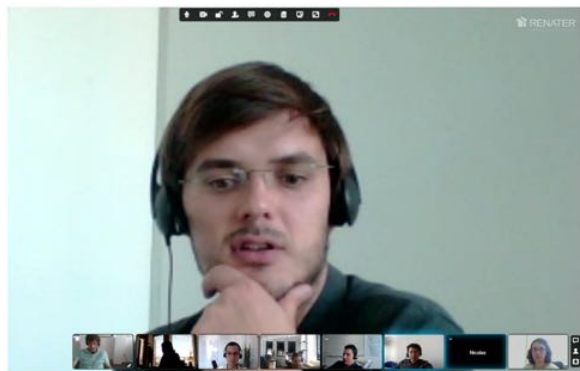


Scale up national community cloud solutions to a European level

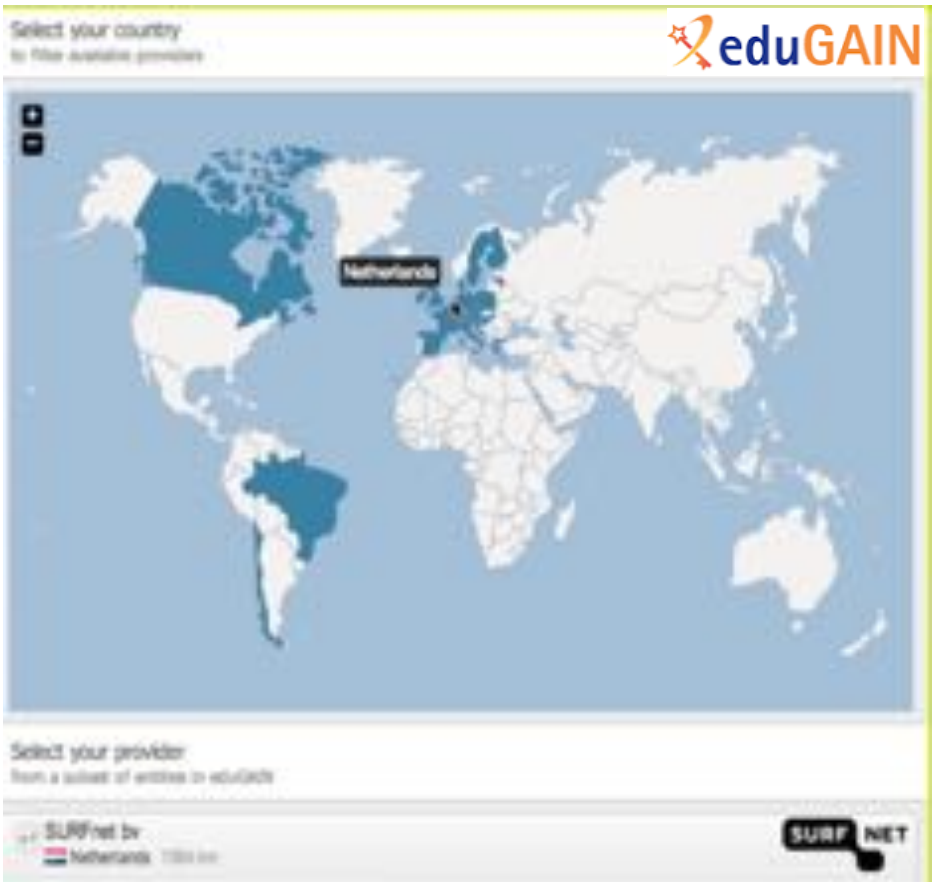
Greek IaaS cloud
built and operated by GRNET



French web conferencing service
built and operated by RENATER



Accessible by whole
European Research and Education community
Single sign-on
Log-in with institutional account



Infrastructure as a Service (IaaS) in high demand

Pan-European tender, conducted in 2016

Through GÉANT
as cross-border, central purchasing body

GÉANT → member NRENs → member institutions

Using EC Procurement Directive (2014/24/EU)

Results: framework agreements
with suitable suppliers

Not winner takes all,
but provide choice

11 different IaaS solutions,
over 20 providers

4 year framework agreements
starting January 2017

NRENs bring the agreements
to institutions for consumption



The screenshot shows the European Commission website under the 'DIGITAL SINGLE MARKET' banner. The page title is 'Results of the GÉANT tender for Infrastructure as a Service solutions'. It was published on 30/09/2016. The text describes Europe's leading collaboration on e-infrastructure and services for research and education through GÉANT, which conducted a Pan-European tender to allow Research and Education institutions to consume the cloud in a safe, easy, and predictable way. The tender for 36 countries aimed to allow Research and Education institutions to consume the cloud in a safe, easy and predictable way, where services meet European and national regulations, have attractive pricing, are connected to the community's networks and identity management capabilities and can be purchased in a controlled and transparent manner. This demand aggregation in GÉANT, of the NRENs and their close to 10,000 participating institutions, creates a substantial single digital market where up to 500 million euro will be channeled through the framework contracts over the next four years. The left sidebar contains a 'DG CONNECT' menu with links to 'Who we are', 'Advisors', 'Events', 'Funding Opportunities', 'Newsletters', 'Consultations', 'Blog', and 'Discussions'. The 'Discussions' section lists 'CoP for Better self- and co-regulation', 'Broadband Europe', 'ICT4Society', 'Students at ICT 2015', 'Discussion Forums', and 'E-Infrastructures for You'.

DIGITAL SINGLE MARKET
Digital Economy & Society

European Commission > Results of the GÉANT tender for Infrastructure as a Service solutions

Home The strategy Economy Society Access & connectivity Research & Innovation **DG CONNECT**

DG CONNECT

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CoP for Better self- and co-regulation
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E-Infrastructures for You

Results of the GÉANT tender for Infrastructure as a Service solutions

Published on 30/09/2016

Europe's leading collaboration on e-infrastructure and services for research and education GÉANT, conducted a Pan-European tender to allow Research and Education institutions to consume the cloud in a safe, easy and predictable way.

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Share

Adoption and service support.
Strategic collaboration.

Network: No data traffic charges.
Connect to GÉANT and NRENs networks over public IP.
Direct connect to institutions, Layer 2 point-to-point connections.

Exit support.
Data portability.

Identity Management:
SAML2 and eduGAIN.

Compliance with EU Data Security Directives.
Ability to offer IaaS from inside the EC / EEA.

General security policies.
Handling of sensitive data (including public health or military research).
Certifications.

Admin management portal.
Customer self service portal.
Order placement, reporting and group management.

Volume discount (initial discount and additional tiered discounted pricing). No price increase.
Purchase order and post-paid billing.
Recognising aggregated spending, combined for all participating institutions.
Accommodating capital expenditure (upfront commitment).

Mechanisms to reduce costs for underutilised (or paused) cloud resources.
Support for Bring Your Own License (use existing educational licenses).
Migration of existing contracts.

API support.

IaaS Framework Agreements



TELECOM ITALIA GROUP



TELECOM ITALIA GROUP



Sort by

Name of supplier

Filters

Show all resellers

Denmark

Show all capabilities

IaaS Solution

Data Transport

Federated user authentication

Data protection and security

Commercial terms

	Aggregated Open	Capital expenditure	Contract terms	Cost recovery fee	Data traffic	Direct network cc	EU Data Security	Exit support	General Data Sec	Identity managen	Identity managen	Idle server setup	Licensing require	Marketing and ad	Migrating existing	Offering	Post-paid billing	Pricing	Public IP network	Sensitive data	Service	Strang
Supplier A																						
Supplier B																						
Supplier C																						
Supplier D																						
Supplier E																						
Supplier F																						
Supplier G																						
Supplier H																						
Supplier I																						
Supplier J																						
Supplier K																						
Supplier L																						

Online cloud catalogue
'IaaS service matrix'
to display results

	EU Data Security	General Data Sec	Sensitive data
Arcus Global			
Atea			
CloudSigma			
Comparex (MS)			
Comparex (AWS)			
Dimension Data			
Infosoft Systems			
Interoute			
Micromail			
NTT Europe			
SoftwareONE			
com Italia (AWS)			



AC8 – General Data Security (Awarding Criteria)

R. Providers need to ensure secure, reliable and a legally compliant treatment of customer's data.

Q. Please describe in detail the policies and processes to ensure data security and data privacy in relation to the proposed services.

Response Guidance

- "Describe mechanisms to protect data at rest and in transit. "
- *Describe how customer data transiting networks (Internet, inside your network, connection to 3rd parties) is protected against tampering and eavesdropping (e.g. network protection, use of*

How to use the available services?

Call-offs

OPTION 1

Use as is, via a

Direct award

default terms and conditions

Use the conditions as established via the GÉANT tender (no 'customisation')

Pick the supplier of your choice
Sign the call-off agreement
Use the service

OPTION 2

Customise, through a

Mini competition

apply 'add-ons'

Ask additional questions to the suppliers selected by GEANT.

Evaluate their answers, select a winner

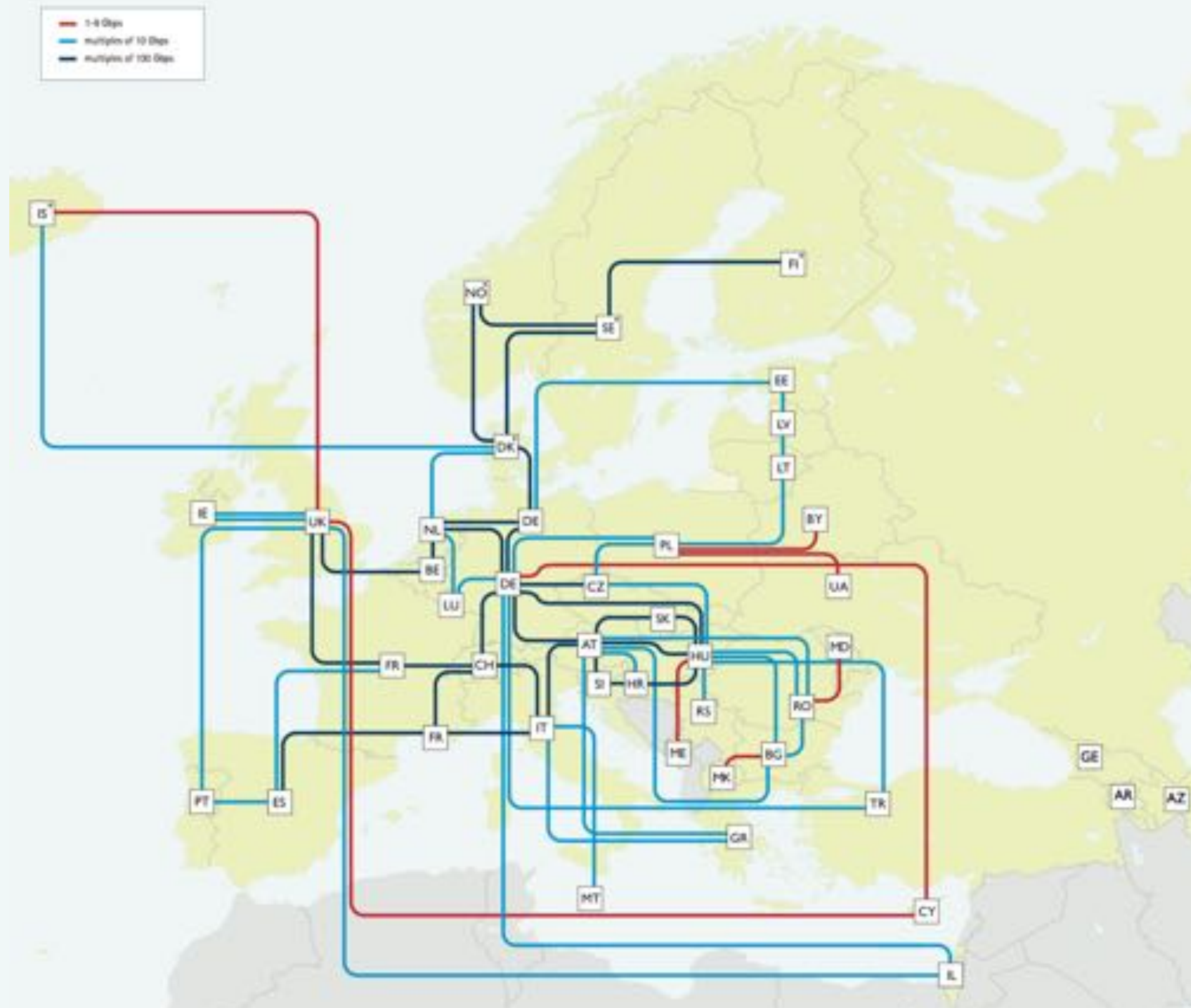
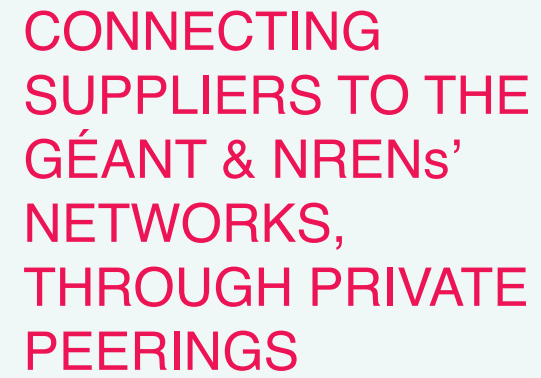
Use the call-off agreement from GEANT and add additional clauses as needed



eduGAIN interconnects identity federations
around the world



Over 40 federations
worldwide support more than
1,500 Identity Providers and
1,000 Service Providers.



Cloud adoption support to institutions

organisational changes

workshops (skills advancement)

workload migration (technical)

contract and license aspects

multi-cloud management portals



GÉANT CloudServices

CONTACT NEWSLETTER

GÉANT CLOUD ACTIVITY SERVICES NREN SUPPORT VENDOR SUPPORT RESOURCES

GÉANT Cloud Activity

SERVICES: GÉANT and European NRENs work together to offer a range of cloud services to research and education.

NREN SUPPORT: GÉANT partners with NRENs to realise the potential of cloud-based ICT and help NRENs offer attractive services to users.

VENDOR SUPPORT: is uniquely capable helping vendors deliver cloud services to the European Research Education community.

In focus

Cloud services are in rapidly growing demand. End users are already using these services, often outside the control of the institutions and its established standards and governance controls. The users want the inherent benefits of cloud services: agility, scalability, free or pay as you go services. They want access to computing power, storage, file sync and share and collaboration services at the click of a mouse.

MEETING USER NEEDS
The NRENs in the GÉANT Cloud Activity are responding to the needs of R&E institutions and users throughout Europe, through our role as trusted advisors.

The GÉANT cloud activity is to:

- Provide a secure and trusted service for a range of useful cloud services by creating the right legal, procurement and technical environment.
- Create a strong community vision, based on the aggregation of demand across GÉANT members, to put the optimum technical and governance solutions from vendors.
- Provide vendors aligned to common operational requirements and standards such as FedRAMP.

FOUR CLOUD SERVICE AREAS
Through broad consultation with European NRENs, the GÉANT Cloud Activity concentrates on four areas of cloud services. Based on the input from the NRENs, it has selected a service body to select and deliver services to bring forward services.

COMMUNITY EFFORT
The European NRENs collaborating through the GÉANT Cloud Activity are:

GÉANT CLOUD SERVICES
The GÉANT Cloud Activity project is a joint effort of GÉANT members, delivering cloud and web services to their communities with the right combination of risk, cost and the benefits of the cloud can be delivered and the costs managed. It provides a complete set of services to support the European Research Education community and help them realise their cloud capabilities and better with the procurement of cloud services.

More information:
<http://services.giant.net/cloud>
Contact us at: cloud@giant.net

Networks • Services • People

13 June 2015





AWS Educate provides an academic gateway for the next generation of IT and cloud professionals.

AWS Educate is Amazon's global initiative to provide students and educators with the resources needed to accelerate cloud-related learning endeavors.



AWS and GÉANT are bringing the AWS Educate program to the European Research and Education community.

AWS will make available free AWS credits (vouchers) to students and educators, for hands-on experience of AWS cloud, access to AWS technology, open content for courses, training resources, and a community of cloud evangelists.

Access to AWS Educate takes place through the GÉANT InAcademia service.

InAcademia is a simple online validation service in a privacy preserving way. It allows online retailers to validate if a customer is a student or has any other affiliation to an education institute.



ONLINE
GÉANT
CLOUD
CATALOGUE



PAN-EUROPEAN
CLOUD
FRAMEWORK
AGREEMENTS

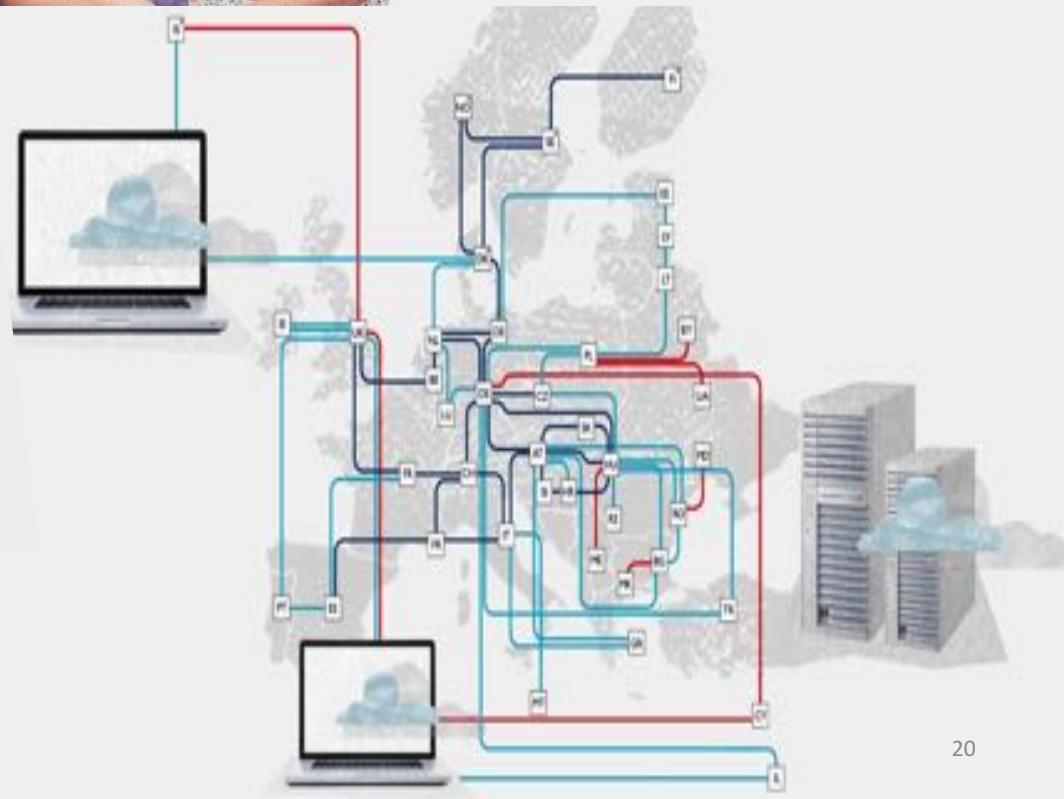
- ✓ PROCUREMENT
- ✓ CONTRACTING
- ✓ DATA PRIVACY
- ✓ DATA INTEGRATION

LOCAL CONTRACT

DATA SECURITY

PRIVACY

TRUST



- Main Focus - Higher Education Sector
- 21 Main Clients
- 70 Clients in total
- Schools Broadband

- Students in HE 210K
- Students in K-12 800K

- Provide a range of services on top of the core national network
 - Schools Filtering
 - Hosting
 - Managed Services
 - Co-location
 - Brokerage

HEAnet and its Institutions



Cloud Vendors for Ireland



MICROMAIL

ATERA

softwareONE

COMPAREX
Software · Consulting · Services



arcus
global

SPARKLE
TELECOM ITALIA GROUP

COMPAREX
Software · Consulting · Services

CloudSigma

dimension
data

interoute
from the ground to the cloud

Provider offerings





IaaS Preparation – 2016

- Decided on procurement approach
- Marketing & Communications
 - Press release – October
 - Cloud SIG - October
 - HEAnet conference – November





IaaS Adoption – 2017

- Comprehended the provider offerings
- March launch workshop
- Procurement exercises in progress
- Initial consumption has taken place
- Interesting questions
- To Do
 - Quickstart guide / FAQ for clients



Main Questions So Far

- What can I...
 - buy
 - buy without limits?
 - buy that is limited
 - not buy

- IaaS looks expensive
- I can only spend capital, is this for me?
- Will my bill look complicated

- Is Direct Award really that simple?
- Is Direct Award really that simple?
- Is Direct Award really that simple?



What can I buy



-
- Compute
 - Storage
 - Networking
 - Professional services

How much can I buy?



- Unlimited
 - IaaS
 - Onboarding
 - Architecture supports
 - Related support services
- Limited
 - Managed Services
 - Implementation services
 - License based services (e.g. VMs with applications pre-installed from a vendor's cloud "marketplace")
 - 50% of the contract value

What can I NOT buy

- Private Cloud
- Co-location
- SaaS
- BUT
 - You can tender for SaaS and possibly bring your own IaaS
 - Just like you did with servers and software licensing

This looks expensive

- Do you know the true costs of onsite hosting?
- Who pays your electricity bill currently
 - Facilities?
 - You?
 - Someone else?
- Who pays support and maintenance on HVAC systems?
- Do you have a 'sinking fund' in your budget cycles?

- Handling Capex is supported by ALL framework participants
- Will take Capex payment and drip feed to Opex bill
- Multi-year obviously!
- This brings interesting benefits
 - Price drops over time, the framework supports this
 - Economies of scale
 - Service evolution

My bill is complicated!

- Pricing is complex
- What you can consume is broad
- Expect that ANYTHING can be metered
- Discounts can be multifactorial
- This will make your head hurt on occasion
- Software licensing can be
 - Confusing
 - Complicated
 - Bizarre



There is no silver bullet
Demand aggregation works
This solves many problems
Easy to consume
Future proof

The background of the slide is the European Union flag, featuring a circle of twelve gold stars on a blue field. The stars are arranged in a circle, with some appearing slightly blurred due to a depth-of-field effect.

Europe

Largest producer of research
data in the world.

But IT infrastructure is
insufficient and too fragmented.

Which leads to an
underutilisation of big data.
EC wants to strengthen and
interconnect
research IT infrastructure,
through the **European Open
Science Cloud**.