

JRA4 Application Services Delivery



A collective approach for the delivery
and adoption of cloud services

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Mission





Clouds for research & education
Collective service delivery efforts in GÉANT



40 European National Research and Education Networks (NRENs)

GÉANT Project collaborates on:
Network, Identity Management, Clouds

Community of 10.000 organisations with 50 million users
1 digital single market

Hybrid Service Delivery

EXTERNAL: Jointly procure public clouds from commercial suppliers

INTERNAL: Share sector specific community clouds

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



GÉANT application service delivery



- We do not build application services ourselves.
- GÉANT is **delivery vehicle** for application services from other organisations (both providers within the R&E community and commercial suppliers)
- Make these services fit the requirements of the R&E community, integrate them with the community's infrastructure and support NRENs to offer them to their institutions and users.
- **Best value; most favorable conditions of use.**
Only able to get those through a **collective** approach.




Need for the IaaS services by the Research & Education Community



- Maximizing limited resources and personnel by moving in-house operations to cloud
- Collaboration environments becoming cloud-based
- Managed IaaS services
- Virtual machines for testing
- Cloud computing classes
- Secure data sharing and data security solutions (no need for handing over passwords)
- Storage - running out of space, steady increase in use and file size
- Disaster Recovery, incl backup and storage (duplicate copies of all data and emails)
- Researchers: shadow IT and on-demand research computing
- Student virtual machines (not always studying at campus)





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)

Meeting user needs: Providing the right choices



- Faster and easier access to a range of useful cloud services by creating the right legal, procurement and technical environments.
- Creating a strong community voice, based on the aggregation of demand across GÉANT members, to get the optimum technical and commercial solutions from vendors
- Adapted to common community requirements and standards such as federation





IaaS tender

IaaS tender

Legal basis for joint NREN procurement activity



EC Procurement Directive (2014/24/EU)

New Directive sets out key provisions;
key to the success of the planned GEANT IaaS
tender and Frameworks:

- *Framework Agreement use*
- *Cross-border procurements*
- *Centralised Purchasing Bodies*



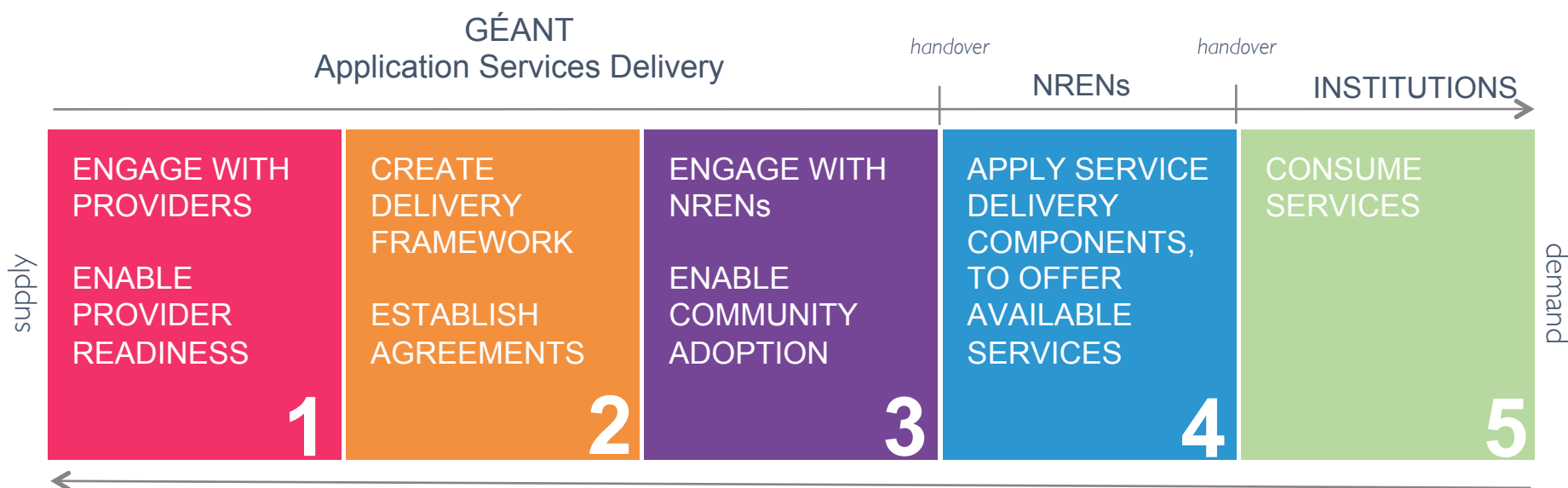
Member State Procurement Legislation

To be implemented by Member States no later than
18th April 2016



- Call-Off is made under UK regulation – guides will be made available
- EU/EEA countries: if Directive 2014/24/EU on public procurement *is* properly adopted, NREs who are subject to public procurement are free to use GÉANT as a centralised purchasing body
- EU/EEA countries: if Directive 2014/24/EU on public procurement *is not* properly adopted, NREs can use centralised purchasing activities of GEANT by invoking direct application of the Directive
- Non-EU: some states in the pre-accession or accession process have undertaken to implement EU directives; check your laws!

The supply chain





Framework

Joint NREN IaaS tender in GÉANT



IaaS in high demand by community

36 NRENs
establishing framework agreements with
suitable suppliers

Not winner takes all, but provide choice

NRENs bring the agreements
to institutions for consumption





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 supplier

4 year framework agreements
starting January 2017



NRENS bring the agreements
to institutions for consumption

The screenshot shows the European Commission website page titled "Results of the GÉANT tender for Infrastructure as a Service solutions". The page is part of the Digital Single Market, Digital Economy & Society section. The main content area features a headline "Results of the GÉANT tender for Infrastructure as a Service solutions" published on 30/09/2016. A summary text states: "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." Below this is a "Share" button. A larger text block explains: "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." It further states: "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." A left sidebar menu includes items like "Who we are", "Advisors", "Events", "Funding Opportunities", "Newsletters", "Consultations", "Blog", "Discussions" (with sub-items like "CoP for Better self- and co-regulation", "Broadband Europe", "ICT4Society", "Students at ICT 2015", "Discussion Forums", and "E-Infrastructures for You"), and "DG CONNECT".

IaaS Framework Vendors for Austria 2017



Some benefits

- Procurement compliant in EU & EEA
- Legal compliance (EU data protection law)
- Invoice billing, no creditcard needed
- Aggregate use discounts (10.000 institutions)
- Mandatory SAML support (some eduGAIN)
- Direct peering with GÉANT network
- no extra data transport charges

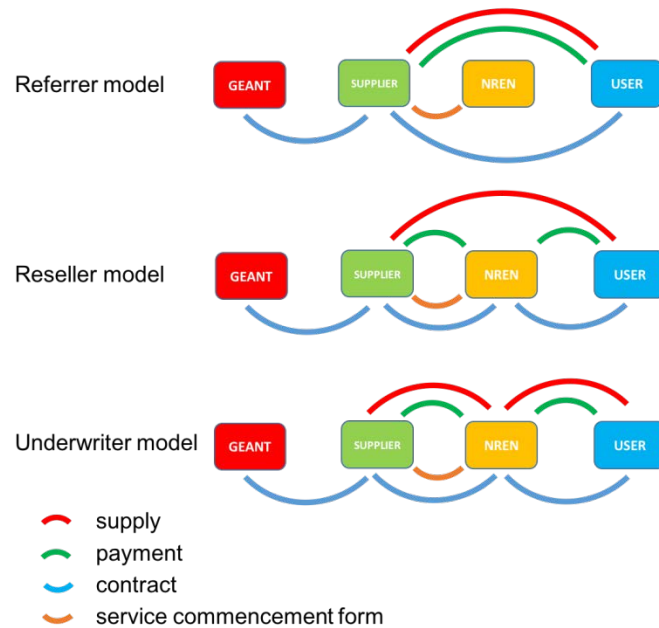


NREN Cloud Service Delivery Manager



- Coordinate national activities – make it happen –key role, needs NREN commitment
- Setup NREN role – Reseller, Referrer, Underwriter
- On-boarding pack provided by GN4-2 JRA4
- Marketing & communication activities with vendors
- Enabling institutions and feedback on needs

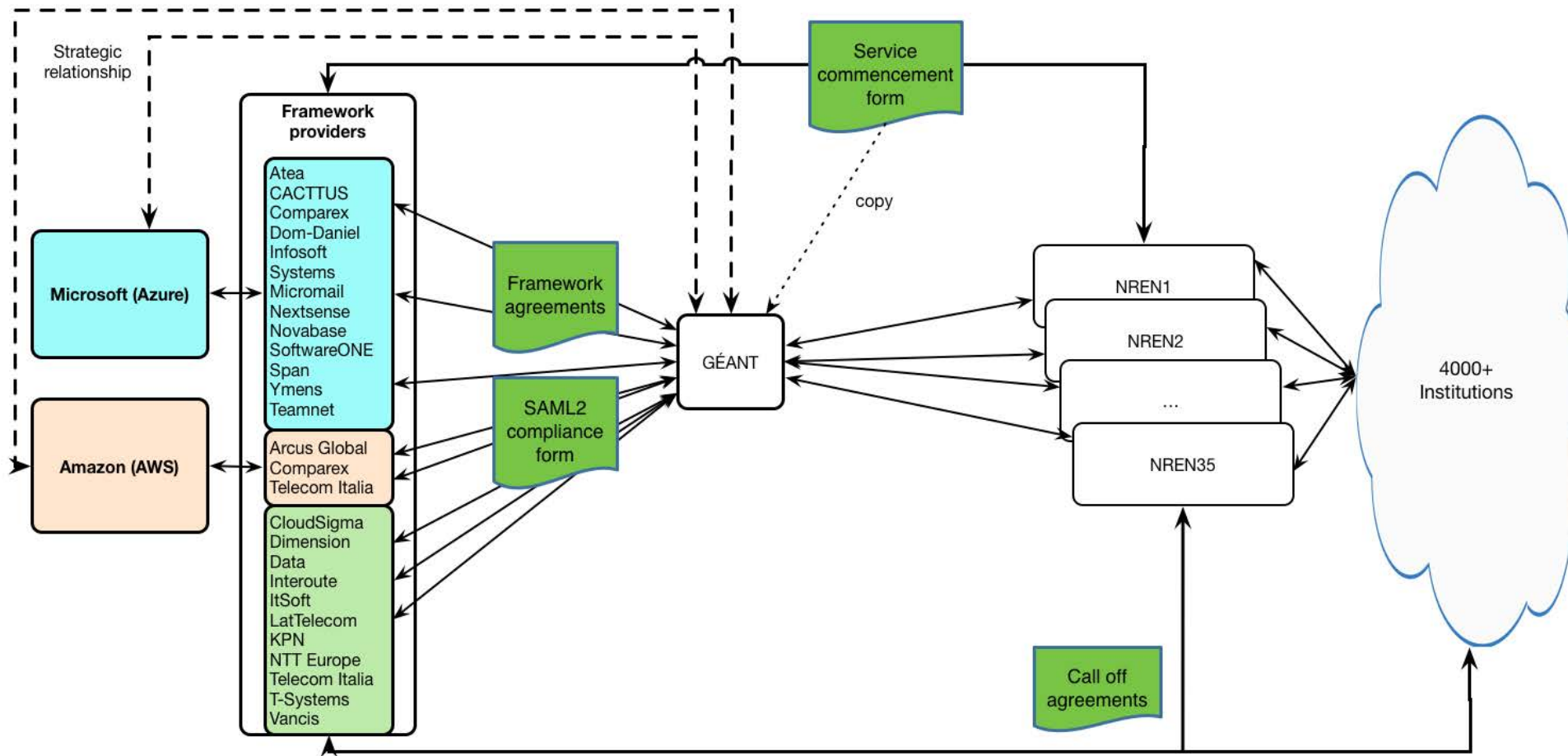
Roles per service, vendor or client sector



Referrer

- Facilitator making the Framework Agreements (FWA) available
- Consolidating users requirements
- Arranges Terms & Conditions with vendors when needed
- Contracts and payments between the institution and the provider

Framework delivery organisation





Adoption

GÉANT, the NRENs and their Institutions that are part of this tender can use its outcomes without additional procurement required

There is no obligation whatsoever on the Customers to purchase, and they are entitled to run their own procurement to purchase any products covered within this contract

The participating countries, NRENs and Institutions are as follows:

	COUNTRY	NREN	INSTITUTIONS
1.	Albania	ANA, Intercollegiate Services Center and Telematic Network	https://wiki.geant.org/display/gn41sa7/laaS+tender+institutions%3A+ANA
2.	Armenia	ASNET-AM	https://asnet.am/about.php?art=members&lang=en
3.	Austria	ACOnet	https://www.aco.net/teilnehmer.html?L=1
4.	Azerbaijan	ANAS	https://wiki.geant.org/display/gn41sa7/laaS+tender+institutions%3A+ANAS
5.	Belarus	BASNET	https://wiki.geant.org/display/gn41sa7/laaS+tender+institutions%3A+BASNET
6.	Belgium	Belnet	http://www.belnet.be/en/about-us/belnet-network

ACOnet Participants

ACOnet participants include universities, colleges, schools, dormitories, libraries, research institutions, arts and cultural organizations, health institutions, and public administration institutions.

If you are interested in becoming a participant of ACOnet and using its services, please read the section [ACOnet Participation Request](#).

Jump to: [A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#)

ACOnet-Participant
A
Academy of Fine Arts Vienna
ACR - Austrian Cooperative Research
Agency for Quality Assurance and Accreditation Austria
AIM Austrian Institute of Management GmbH
Akademie Burgenland GmbH
Akademikerhilfe Studentenunterstützungsverein
Anton Bruckner Privatuniversität
APA-IT Information Technology GmbH
Austrian Academy of Sciences
Austrian Computer Society
Austrian Economic Chamber Styria
Austrian Exchange Service
Austrian Gallery Belvedere
Austrian Marketing University of Applied Sciences
Austrian Museum of Applied Arts / Contemporary Art
Austrian National Library

On-boarding the institution

- **Selecting Providers**
 - After SAML2 compliance is announced
 - MS Azure call-offs can be made within 4 years from 1 Jan 2017 (contract signed between GÉANT and MS), for other suppliers using FW agreement that goes beyond the end date of the FW itself
 - Providers can be directly selected if GÉANT template solution is used (otherwise a mini-competition)
- **Setting up the Institution as an Organisation at the Cloud Provider**
 - Contact names, billing details, new cloud accounts or migrating existing ones etc
- **Ensuring appropriate policies and controls are in place**
- **Managing costs and resource usage**
- **Using value added services**
 - Participating in additional trainings
 - Security consultancy
 - Education grants for cloud

Online Material



- Website
 - <https://clouds.geant.org>
- IaaS Service Matrix
 - <https://catalogue.geant.org>

The screenshot shows the GEANT CloudServices website interface. At the top, there is a search bar and navigation links for CONTACT and NEWSLETTER. Below the header, there are links for GEANT CLOUD ACTIVITY, SERVICES, NREN SUPPORT, VENDOR SUPPORT, RESOURCES, GEANT CLOUD CATALOGUE, and NEWS & EVENTS. The main content area features a 'GÉANT Cloud Activity' section with a 'HELP SUPPORT ADVICE GUIDANCE' button and a 'GÉANT' logo. Below this, there is a 'SERVICES: GÉANT European NRENs together to offer cloud services to and education.' section. The central focus is the 'IaaS Service Matrix', which is a table with 12 rows (Supplier A to Supplier L) and 18 columns representing various capabilities. A dropdown menu is open over the matrix, showing a list of capabilities: 'Show all capabilities', 'IaaS Solution', 'Data Transport', 'Federated user authentication', 'Data protection and security', and 'Commercial terms'. The matrix cells are colored green, indicating the presence of a capability for a specific supplier.

Supplier	Aggregated Sporn	Capital expenditure	Contract terms	Cost recovery fee	Data traffic	Direct network cc	EU Data Security	Exit support	General Data Sec	Identity management	Identity management	Info server setup	Licensing require	Marketing and ad	Migrating existing	Offering	Pre-paid billing	Public IP network	Serviceable data	Service	Storage
Supplier A																					
Supplier B																					
Supplier C																					
Supplier D																					
Supplier E																					
Supplier F																					
Supplier G																					
Supplier H																					
Supplier I																					
Supplier J																					
Supplier K																					
Supplier L																					

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 Spen	Capital expenditu	Contract terms	Cost recovery fee	Data traffic	Direct network cc	EU Data Security	Exit support	General Data Sec	Identity manager	Identity manager	Idle server setups	Licensing requirei	Marketing and ad	Migrating existing	Offering	Post-paid billing	Pricing	Public IP network	Sensitive data	Service	Strateg
Supplier A	Light	Light	Light	Light	Light	Light	Light	Light	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
Supplier B	Light	Light	Light	Light	Light	Light	Light	Light	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
Supplier C	Light	Light	Light	Light	Light	Light	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
Supplier D	Light	Light	Light	Light	Light	Light	Light	Light	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
Supplier E	Light	Light	Light	Light	Light	Light	Light	Light	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
Supplier F	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
Supplier G	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
Supplier H	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Dark	Light	Light
Supplier I	Light	Light	Light	Light	Light	Light	Light	Light	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
Supplier J	Light	Light	Light	Light	Light	Light	Light	Light	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Dark	Light	Light	Light	Light
Supplier K	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light
Supplier L	Light	Light	Light	Light	Light	Light	Light	Light	Light	Dark	Light	Light	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Light

Online cloud catalogue
'IaaS service matrix'
to display results

IaaS Service Matrix – view with the requirements legend



MR	Minimum requirement (mandatory requirement) Minimum functionalities/services that GEANT requires its appointed service provider to meet or exceed.
6	Exceeds the stated requirements Response provides a clear and comprehensive solution to GEANT's requirements and brings significant added value and benefit, which is supported by evidence (where relevant) and which presents no concerns in relation to deliverability and/or performance and/or transfer of risk to GEANT.
5	Fully meets the stated requirements Response provides a clear and comprehensive solution to GEANT's requirements, which is supported by evidence (where relevant) and which presents no concerns in relation to deliverability and/or performance and/or transfer of risk to GEANT.
3	Minor Reservations Response provides a clear and comprehensive solution to GEANT's requirements but there are minor deficiencies in the evidence provided (where relevant) and minor concerns in relation to deliverability and/or performance and/or transfer of risk to GEANT.
1	Significant Reservations Response provides a solution to GEANT's requirements but there are major deficiencies in the evidence provided (where relevant) and major concerns in relation to deliverability and/or performance and/or transfer of risk to GEANT.
0	Not Answered / Unacceptable The response does not meet requirements.

Sort by

Filters



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*

Cloud Services Central Repository



Recent
Cloud Services Repository
Site Contents

Home

Documents

+ new document or drag files here

✓	📁	Title	Name	Modified
	📁	Arcus Global	Arcus Global	... Monday at 10:25
	📁	Atea	Atea	... Monday at 10:25
	📁	CACTTUS	CACTTUS	... Monday at 10:25
	📁	CloudSigma	CloudSigma	... Monday at 10:25
	📁	Comparex (AWS)	Comparex (AWS)	... Monday at 10:26
	📁	Comparex (MS)	Comparex (MS)	... Monday at 10:25
	📁	Dimension Data	Dimension Data	... Monday at 10:26
	📁	Dom-Daniel LLC	Dom-Daniel LLC	... Monday at 10:26
	📁	Infosoft Systems	Infosoft Systems	... Monday at 10:26
	📁	ITsoft	ITsoft	... Monday at 10:27
	📁	KPN	KPN	... Monday at 10:27
	📁	Lattelecom	Lattelecom	... Monday at 10:27
	📁	Micromail	Micromail	... Monday at 10:27
	📁	Nextsense	Nextsense	... Monday at 10:27
	📁	Novabase	Novabase	... Monday at 10:28
	📁	NTT Europe	NTT Europe	... Monday at 10:28
	📁	SoftwareONE	SoftwareONE	... Monday at 10:28
	📁	Span	Span	... Monday at 10:28
	📁	Telecom (AWS)	Telecom (AWS)	... Monday at 10:29

- Framework agreements
- URL
 - https://intranet.geant.org/cloud_services_repository/Pages/default.aspx
- Cloud Service Delivery Managers will be able to give access to the repository.

Communication and support

- Document Repository
- Newsletter
- Webinars, showcases, tutorials, workshops
- IaaS Forum for NREN Cloud Managers every Friday @10 CET
- Use cases, best practices
- Presentations at meetings & user conferences (e.g TNC17 in Linz)



- **IaaS:** The provision of **compute, storage, network** and related services as a public cloud service. The services should be standardized, highly automated, available on-demand, elastic and on a pay per use basis. Access should be via a web-based self-service portal or API and support multi-tenancy.

How much can I buy?

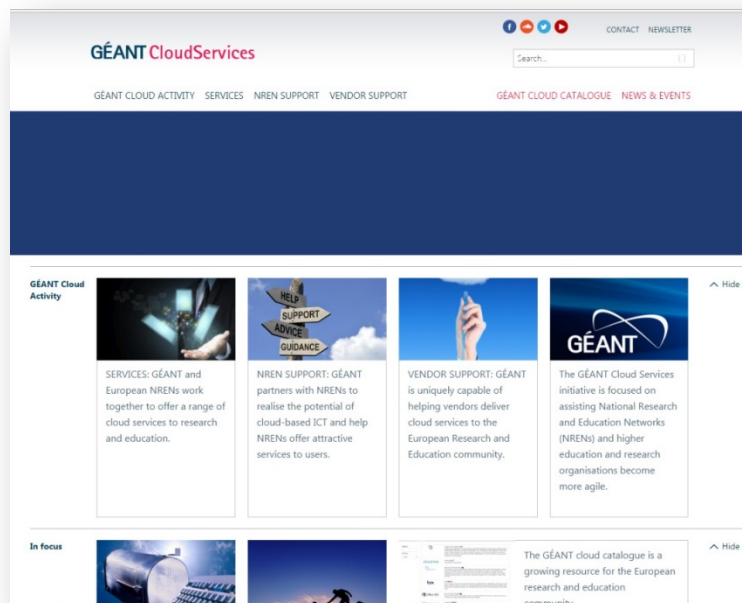


- Unlimited
 - IaaS
 - Onboarding
 - Architecture supports
 - Related support services
- Limited
 - Managed Services
 - Implementation services
 - License based services (e.g. VMs with applications pre-installed from a vendor's cloud "marketplace")
 - 50% of the contract value

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

How can my institution participate/benefit?



Talk to your NREN or find out more at <https://clouds.geant.org/>



LET'S GET READY

Prepare and execute adoption,
together