27-03-2017

GÉANT IaaS Framework Cookbook

Table of Contents

Table of Figures

Table of Tables

1 Introduction

Through GN4-2 Joint Research Activity 4 Application Services Delivery Development (JRA4), GÉANT supports the joint efforts of the European National Research and Education Networks (NRENs) to create a service delivery and adoption chain for online applications and cloud services. A framework of IaaS suppliers is now up and running.

This Cookbook offers step-by-step instructions on how to use the GÉANT IaaS Framework. It provides the basics of the IaaS framework operations and includes a tutorial on how to enrol, adopt the framework and begin providing IaaS services to the participating Institutions.

This Cookbook is designed to help Cloud Service Delivery Managers (CSDMs) designated by the European National Research and Education Network (NREN) organisations.

2 IaaS Framework Agreement

This IaaS Framework Agreement is the result of a joint procurement 'umbrella agreement' between GÉANT and IaaS Suppliers. These IaaS suppliers were awarded contracts with GÉANT following a tender [FRAMEWORK].

This framework agreement sets out the terms under which NRENs may acquire and provide IaaS cloud services to their end-user organisations via individual contracts, throughout the four-year duration of the agreement. The terms address price, quality, quantity, the procedure for ordering services, and the obligations of the suppliers. Individual contracts can be established via direct call-offs or mini-competitions.
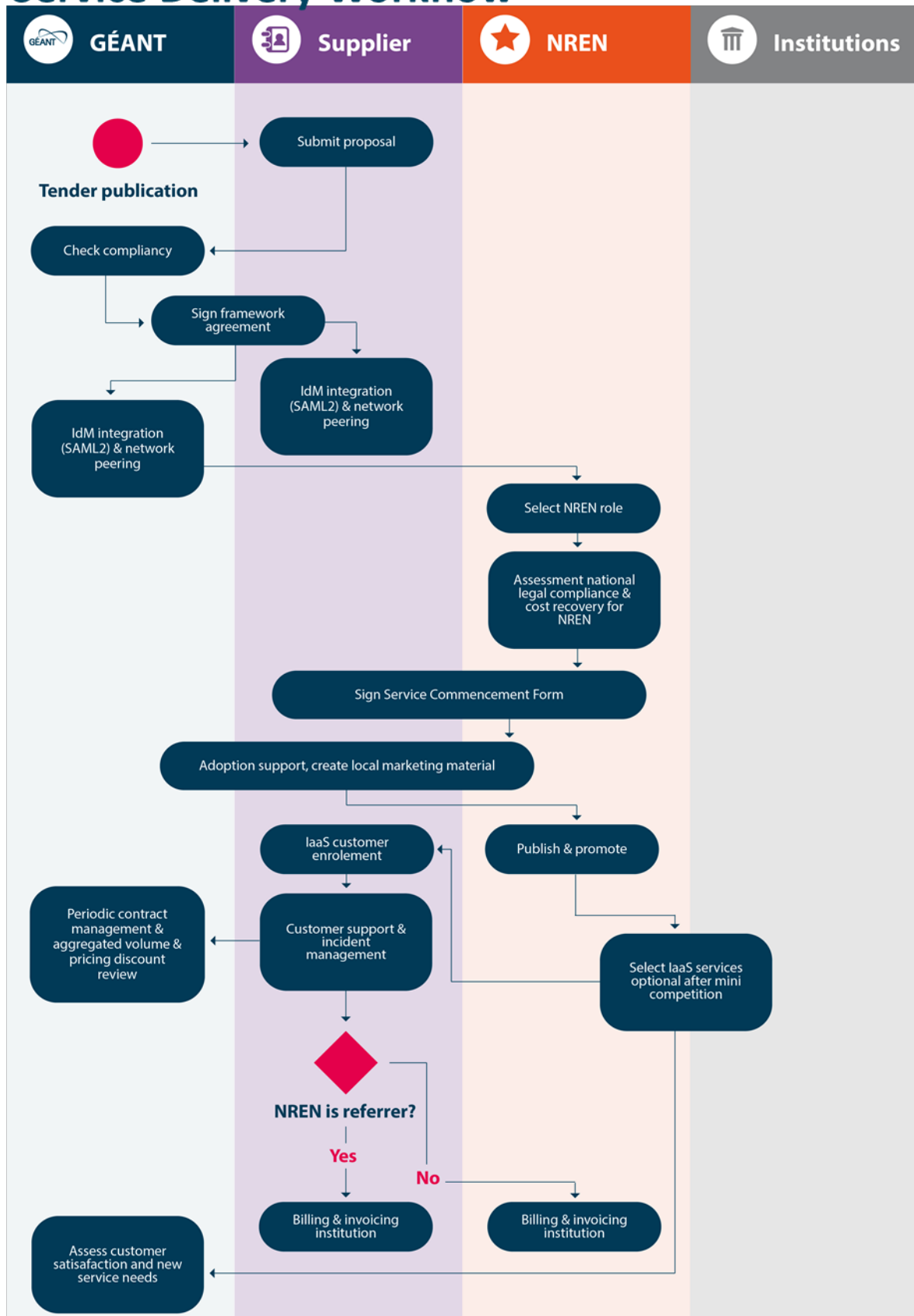
Service Delivery Workflow

Figure 2.1: Service delivery workflow

3   Benefits of the Framework

By delivering a single digital market across the European NREN community, institutions are ensured the best-value services. Individual institutions will see that they can obtain the most discounted rates that meet the specific technical requirements of educational institutions. For NRENs, a single digital market ensures an equal playing field within the community, and saves time and resources negotiating the labyrinth of legal terms and conditions. In addition, a wide and diverse offering of such vital services serves to strengthen the relationship between NRENs and constituent institutions.

- Procurement-compliant mechanism for consuming cloud services.
- Better pricing through increased purchasing power by aggregating demand across many countries.
- Pre-pared legal due diligence and contracts, thereby substantially reducing legal costs and offering better legal conditions.
- Single Sign-On (SSO) and user authentication using Security Assertion Markup Language (SAML) and eduGAIN facilitating the use of institutional log-in credentials [eduGAIN].
- Ensuring data is handled safely and meets European and national regulations.
- Limit network traffic costs
- Automatic data egress charge waivers
- Direct peering, high capacity and low-latency network.

For more information please refer to the website [CLOUDBENEFITS].

4   NREN On-Boarding

NRENs will be on-boarding to the framework in three phases, the initiation phase, the adoption phase and the early-life phase, according to Figure 4.3. In the first phase (initiation phase), the NREN follows the first steps and selects its role as referrer, reseller or underwriter. In the second phase (adoption phase), the operations to support the Institutions within the IaaS framework agreement begin, which also has an option to include billing management for the institutions. The third phase (early-life phase) lasts for six months after the end of second phase, during which the NREN extends the number of institutions and suppliers, while taking care of user satisfaction and new needs.

NREN on-boarding in three phases

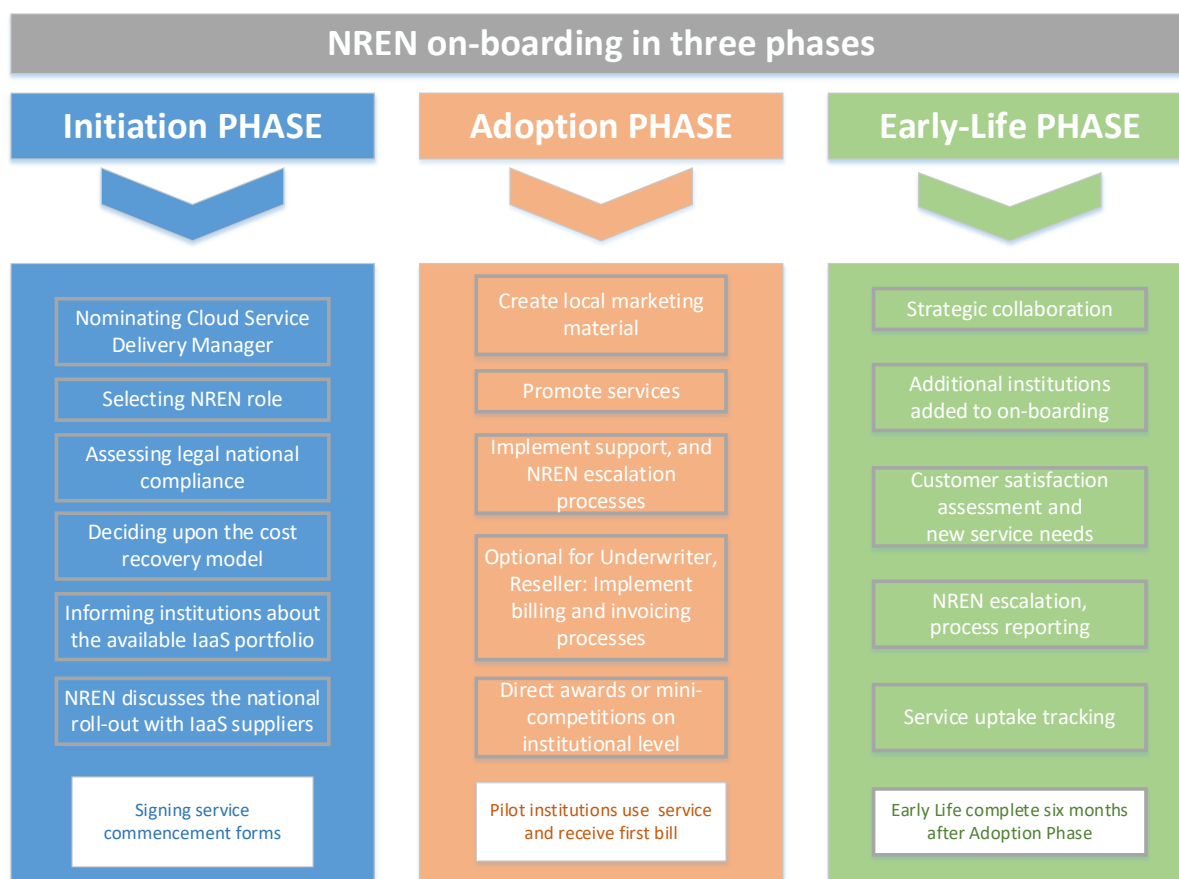| Initiation PHASE	Adoption PHASE	Early-Life PHASE
Nominating Cloud Service Delivery Manager	Create local marketing material	Strategic collaboration
Selecting NREN role	Promote services	Additional institutions added to on-boarding
Assessing legal national compliance	Implement support, and NREN escalation processes	Customer satisfaction assessment and new service needs
Deciding upon the cost recovery model	Optional for Underwriter, Reseller: Implement billing and invoicing processes	NREN escalation, process reporting
Informing institutions about the available IaaS portfolio	Direct awards or mini-competitions on institutional level	Service uptake tracking
NREN discusses the national roll-out with IaaS suppliers		
Signing service commencement forms	Pilot institutions use service and receive first bill	Early Life complete six months after Adoption Phase

Figure 4.1: NREN on-boarding phases

4.1 Picking the Role

The first step is for an NREN to determine which service delivery model is most suitable for its institutional engagements. The chosen model can be changed at any time. The goal is to find the right model that best suits the needs of the NREN's institutions.

An NREN chooses its role for each adopted service, from one of the three available roles (Referrer, Reseller, Underwriter) under the IaaS Framework agreement. The decision for a particular role is on a per-vendor basis, so an NREN could decide to be a Referrer for one vendor and a Reseller for another. It is possible for an NREN to have more than one role for a particular vendor, e.g. one role might be appropriate for a particular user sector and another role for a different sector. It is anticipated, however, that, in general, NRENs will adopt a common role for all vendors (most likely Referrers).

The framework allows for the following models: Referrer, Reseller and Underwriter, as detailed below.

4.1.1 Referrer

In this model, an NREN acts as a facilitator on behalf of its users. The NREN simply makes the framework agreements available within its country, and makes the connections between institutions and suppliers. Institutions directly purchase services from suppliers. To do this effectively, an NREN must understand and consolidate users' requirements, and when needed, the NREN arranges appropriate terms and conditions with vendors, conducts due diligence to optimise value. In this case, NRENs receive a referral fee for their services. For the Referrer model, the contract (and payment) is between the end-user institution and the cloud provider.

4.1.2 Reseller

As a reseller, institutions buy IaaS services directly from their local NREN. The NREN is involved in the contracting and billing of some or all of the institutions' service orders by aggregating demand and providing efficiencies of scale. In this case, suppliers interface primarily with the NREN. The NREN may also provide value-added services on top of their IaaS offering. The NREN adds a margin on top of the supplier's price. GÉANT can also act as a reseller on behalf of an NREN and provide contracting and billing services, as per request.

4.1.3 Underwriter

This model enables institutions to acquire IaaS services that are made available to users through their NREN. Underwriter NRENs purchase IaaS packages from suppliers, and distribute the acquired resources to institutions and end-users. In this case, NRENs must commit to a level of purchase on behalf of the sector and as a result, receives preferential pricing terms and revenue share. As an underwriter, the risk lies with the NREN to meet sales quotas based on "inventory". GÉANT may also act as an underwriter and make purchases from suppliers on behalf of underwriter NRENs, upon request.
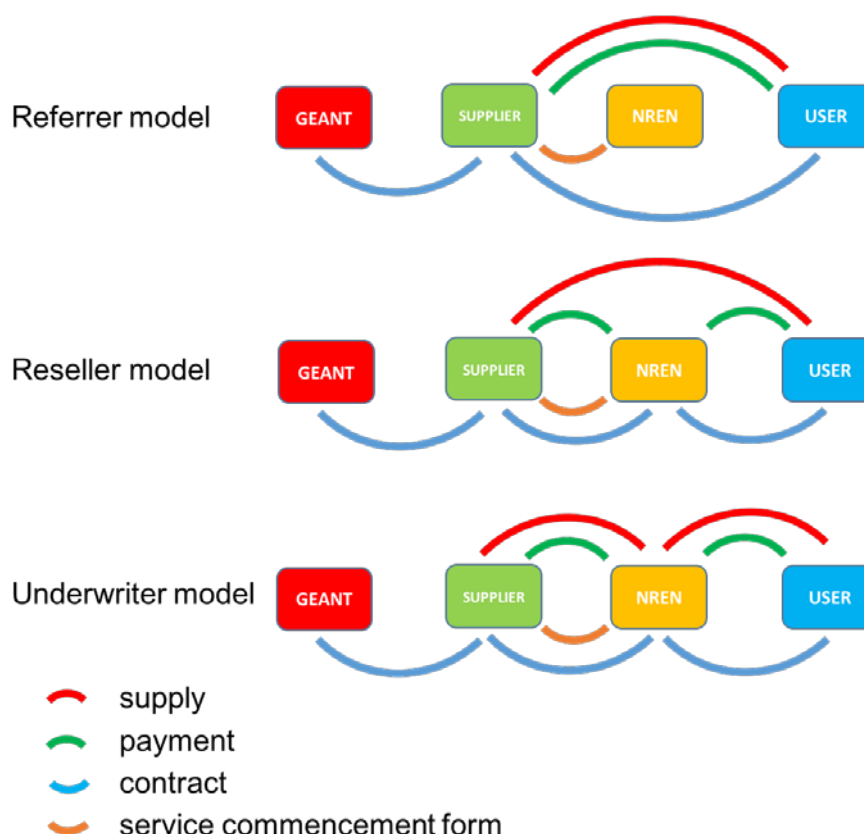
Figure 4.2: Different NREN models for the IaaS Framework

In general, a Referrer NREN benefits from being the central gateway for the best deals, including commercial services. This model within the IaaS Framework enables NRENs, as a community, to shape the commercial cloud market with AAI federation requirements, aggregation, pricing, and peering. Central procurement delivers better economies of scale.

As a Reseller or Underwriter, NRENs relieve the burden from institutions to deliver seamless IaaS services.

4.2 Main decision criteria for role selection

Besides several strategic aspects evolving from an NREN's cloud strategy, the operational and financial capabilities required by a specific role present the main decision criteria for NRENs.

Capabilities for an NREN to consider within this context include:

- Ability and willingness to take financial risks.
- Ability and willingness to exert data control.
- Maturity of NRENs billing procedures and in providing commercially procured services to its community.

Capability	Referrer	Reseller	Underwriter
Taking Financial Risks	no	No	yes
Data Control	no	No	yes
Billing and Procurement	no	Yes	yes

Table 4.1: Decision criteria to choose the role

As can be seen in Table 4.1, both Resellers and Underwriters need to be able to provide commercially procured services on a repeatable, and preferably automated, basis. As an Underwriter, the NREN takes the risk for the whole consumption, and also "owns" the resources and infrastructure, which the reseller does not. The Reseller signs contracts with institutions and the supplier, while the underwriter has to pay for the resources (has to have funding) and possibly has a re-buy commitment from the institutions.

Additionally, as an Underwriter, the NREN becomes the customer and, as a result, also controls the data. While this may benefit the consulting of institutions, it may be undesirable by institutions due to loss of data oversight.
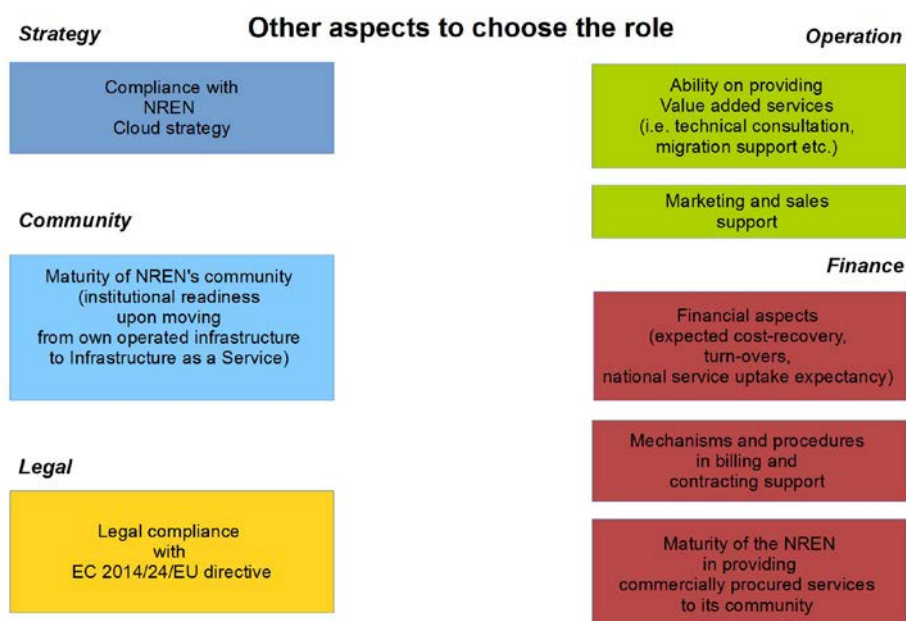

Figure 4.3: Other aspects to choose the role

4.3   NREN Administration and Personnel

If an NREN wishes to provide services within the IaaS framework, a **Cloud Service Delivery Manager** (CSDM) needs to be nominated. This Manager:

- Is responsible for the overall communication between the NREN and GÉANT.

- Coordinates national activities, legal matters regarding mini-competitions and call-offs, as well as marketing to institutions.

A **Technical Contact** should be assigned if SAML2 implementation is needed on a national level. GÉANT will proactively enable vendors in eduGAIN so that SAML2 integration will be required only by some vendors.

NRENs may also feel they need a **marketing contact** or a **legal contact** for procurement matters.

4.4   Assessing National Legal Compliance

An NREN must check and ensure compliance with the EU Directives, in-house principles and other national legal compliance such as personal data, data privacy, etc.

The GÉANT IaaS Framework is a joint approach, with many NRENs collaborating to provide a pan-European framework to create the right conditions for consuming IaaS cloud services for educational and research institutions across Europe, as per the benefits outlined in Section 3. The GÉANT Framework uses the European Directive 2014/24/EU, which enables NRENs and their clients (in those countries where the Directive is in force) to legally procure from the framework [2014/24/EU]. The GÉANT Framework is handled by GÉANT's UK office, and as such, UK governing law applies. In some countries, additional national legal requirements or regulations may also apply, e.g. data protection regulations, and each NREN should confirm the legal status regarding the EU Directive and any additional requirements for their country.

Each NREN and Institution must check the EU and local laws, and pay heed to the following directives:

- UK Framework, local-law Call-Off Agreements.

- Call-off is made under UK regulation – guides to be made available.

- EU and EEA countries: if Directive 2014/24/EU on public procurement is properly adopted, NRENs that are normally subject to public procurement must be free to use centralised purchasing activities offered by bodies from other EU countries (GÉANT, in this case). The following reference link [2014/24/EU] allows visibility of who has implemented this in their national legislation and provides copies of such documentation.

- Article 33 of the EC Directive, particularly Paragraph 4 sets, out how contracts may be directly awarded under a framework arrangement:

  "…following the terms and conditions of the framework agreement, without reopening competition, where it sets out all the terms governing the provision of the works, services and supplies concerned and the objective conditions for determining which of the economic operators, party to the framework agreement, shall perform them; the latter conditions shall be indicated in the procurement documents for the framework agreement."

  In other words, a Contracting Authority (NREN/Institution etc.) can place an order with any supplier where the service catalogue clearly sets out what they wish to buy. It is solely their discretion to choose which one they wish to contract with.

To complete the analysis of approaches in regard to further competition, Paragraph 5 of Article 33 of the Directive can be considered. This sets out that further competition must be carried out in accordance with the instructions set out in the Framework itself. The GÉANT IaaS Framework describes this in Clause 4.4.

- EU and EEA countries: if Directive [2014/24/EU](#) on public procurement is not properly adopted, NRENs and Institutions can use centralised purchasing activities of GÉANT by invoking direct application of the Directive.

- Non-EU: some states in the pre-accession or accession process undertook to implement EU directives; it is important to check the applicable laws, as these will vary by country. A local procurement can also be held in the form of mini-competition.

NRENs wishing to resell services to its connected institutions without the need for them to tender for such services must check Article 12 of the directive test.

Summary description of the procurement [DIRECTIVE](#), in local languages is available. [LIST OF COUNTRIES](#) that have adopted ('National transposition') the directive is also available.

In-house Award 1 (vertical exclusion)	Buyer exercises control on the seller (may be joint control)– for instance the board of the NREN is made up of HE institution representatives
	More than 80% of the activities of the seller are performed for the buyer or other bodies buyer controls
	No direct private capital participation in the seller
In-house award 2 (vertical exclusion)	Buyer is controlled (i) by the seller, or (ii) by the same entity controlling the seller–i. e. the NREN is owned by the HE institutions or by the Ministry
	No direct private capital participation in the seller
Public-cooperation (horizontal exclusion)	Parties co-operate to perform public services they provide, meeting common objectives– the consortium model
	Co-operation is for public interest reasons only
	Parties perform less than 20% of the cooperative activities on the open market

Table 4.2: Article 12 summary

4.5 Cost Recovery Models

The NREN is an essential element in the GÉANT IaaS Framework, ensuring that its client institutions can use it to procure IaaS cloud services. The NREN activities and responsibilities will depend on its role, as previously described, and will require ongoing efforts to sustain the GÉANT IaaS Framework in its country. In recognition of this ongoing resource commitment, NRENs may, at their discretion, apply a Cost Recovery Fee (a percentage) for any procurement through the GÉANT Framework. The Cost recovery Fee is agreed on a per-vendor basis and documented with each vendor in the Service Commencement Form [SCF]. GÉANT has notified the vendors that they cannot commence activities in a country until the SCF is agreed and signed with the NREN.

A supplier and an NREN create the SCF that gives permission to the vendor to start delivering services in this country. An NREN can ask for Cost Recovery Fee from the supplier. As a Reseller, an NREN cannot ask for the Cost Recovery Fee, but can agree on a Margin of Surcharge.

For the NREN cost recovery, there are three options currently being applied by NRENs, in practice:

- **Cost Recovery Model A**
  - An NREN adds a percentage on top of 'each cloud unit sold by the supplier', which results in an institution paying the supplier: supplier price + the NREN fee.
  - If an NREN would have a 1% cost recovery fee, the price an institution pays to the supplier is 101% (100% of supplier price + 1% NREN fee).

- In other words, the NREN fee does not eat into the supplier's margin. It is a mark-up that comes on top of the price the suppliers lists in the price sheet attached to the Framework Agreement.
- Please note: Supplier price means the special discounted price the supplier makes available via the GÉANT IaaS framework.
- Thus, more precisely, the price an institution pays is:
  — Supplier list price (regular/standard price), minus all applicable framework discounts/rebates the supplier offers through the GÉANT framework agreement, plus the NREN cost recovery fee.
- In cases where the NREN is Referrer:
  — The Supplier uses its billing system to collect the institution's payments.
  — The Supplier adds the NREN fee to the bill that it sends to an institution, labeling this item as 'NREN cost recovery fee'.
- The institution pays the Supplier (101% in the example used). The supplier pays the NREN (1% in this example).
- If the NREN is acting as Reseller, the NREN will handle the billing: institutions pay the NREN (101% in this example) and the NREN pays the supplier (100%).

- **Cost Recovery Model B**
  - Institutions and the NREN decide on a (fixed) annual cloud subscription fee, to accommodate the NREN work. The fee can be equal for all institutions or graded after institution size or other criteria. Each institution pays this fee directly to the NREN.
  - There is no supplier involvement and this fee would then not be tied to actual 'cloud units' sold by a supplier.
  - The NREN would therefore list a 0% cost recovery fee in the Supplier Commencement Form.

- **Cost Recovery Model C**
  - No cost recovery fee needed or possible.
  - The NREN would list a 0% cost recovery fee in the Supplier Commencement Form.

It is important to note that all institutions are considered to be formal customers in the tender, and if an NREN would not enable the service delivery (would not facilitate consumption), an institution would have a legal basis to independently reach out to a supplier.

4.6   Institutions On-Boarding

Once the GÉANT Framework is signed and the Service Commencement Form is in place (signed by the NREN and the supplier), then all legal, technical and contractual requirements will have been satisfied. In order for NREN clients (i.e. academic and research institutions) to start taking advantage of the new framework opportunities, some on-boarding tasks will be necessary to get started, for instance setting up cloud accounts with the cloud provider or moving an existing account to be included by the new framework. A number of activities are likely to be required that will vary from vendor to vendor, as well as variations on the NREN role, but these will typically include the following:

- Information on procurement options for the institution (influenced by NREN role).
- Information on the cloud vendor and its service offerings.

- Setting up Single Sign-On for any local requirements which may require some technical setup at the institution (IdP).
- Setting up the Institution as an organisation at the Cloud Provider (or NREN depending on role) - contact names, billing details.
- How to set up a cloud account(s) in the Cloud provider's IAAS cloud or migrate existing accounts.

It is anticipated that an initiative by the NREN in co-operation with the cloud providers to launch the new GÉANT Framework in their country will be an essential part of informing clients on how to start using the new frameworks (which will depend on the NREN role) and start realising the benefits. In general, it is the responsibility of end user institutions to address key enabling requirements relevant to their organisation such as:

- Ensuring appropriate policies and controls are in place for the use of cloud services.
- The technical know-how on developing or migrating solutions in the cloud.
- Manage costs and resource usage in the cloud.

Some NRENs or cloud vendors provide additional value added services e.g. training, migration, security consultancy (many of which are also within the scope of the framework) to address these requirements. Some vendors also provide free services e.g. education grants for cloud usage, as well as online training to help institutions get started. The IaaS service matrix in the Cloud Catalogue describes these options [CATALOGUE].

5 Adoption and Service Delivery

5.1 Local Marketing

In order to promote services to different end-user institutions, such as universities, schools, and e-infrastructures, NRENs are encouraged to use all available communication channels available, such as websites, user portals, mailing lists, newsletters, articles in magazines, webinars, user events, conferences or workshops, printed material, etc. Reseller NRENs may also request marketing support from Suppliers in the form of client workshops, conference participation, events and whitepapers.

5.2 Selecting Providers

Providers should be selected from the list of vendors available for the NREN country, only after SAML2 compliance is announced, and only within first 45 months after the Framework was made available. NRENs can directly select providers if the GÉANT templates associated with IaaS Framework are used, otherwise a mini-competition can be organised.

Please note that not all suppliers deliver in all countries. Also, the number of Microsoft and Amazon resellers is limited per country. A customer is able to select the suppliers available in its country. The IaaS service matrix, a part of the GÉANT Cloud Catalogue, allows customers to quickly drill-down to the suppliers available in a specific country [CATALOGUE].

5.3 Direct Call-Offs and Mini-Competitions

Call-offs take place on the customer level. There are two options:

- A direct award; direct selection of one supplier.
- A mini-competition, with additional questions and requirements for the suppliers in addition to the ones that were in the GEANT IaaS tender.

If a customer can satisfy its requirements with what's already available from the IaaS Framework , the customer can carry out a direct award. If the customer's needs are different (package service in a way not mentioned, need for additional services or compliance with national legislation), the customer can run a mini-tender.

NOTE: The GÉANT clouds team recommends NRENs to advise their connected institutions to give preference to direct awards as this is quickest method to consume IaaS services.

A **direct award** is to one vendor / supplier. The direct call-off process is under UK law, considering the tender was also under UK law. Under UK law there are no particular requirements, notes or minutes to be put in place, on the criteria a customer uses to select one particular supplier. A customer can simply pick the supplier it wants to buy from and is not required to write-down how it made this selection.

The customer then signs a contract with the selected supplier, by using the call-off template made available as part of the IaaS Framework contract package, and only adds information in the items between brackets. No further changes to this document are allowed.

If changes are needed to this call-off template, then a customer would run a **mini-competition**. This allows the customer to add specific local requirements (language support, specific data protection support, better pricing, etc.). In other words, a mini-competition may be useful in cases of special conditions or national legislation or regulations. If a mini-competition is needed, the customer will create its own criteria for suppliers or redraft the proposed call-off agreement and then invite suppliers and evaluate/score tenders, eventually signing with the highest-scoring tenderer.

A mini-competition enables tailor-made solutions, covering the following areas:

- Technical.
- Operational (e.g. specific reporting requirements).
- Legal (e.g. specific legal terms needed in the service agreement).
- Financial.

5.4 Comparing IAAS Providers

The GÉANT IaaS Framework includes 12 Cloud Providers (referred to as Original Infrastructure providers (OIPs), as well as a number of Resellers of Cloud providers (For Amazon AWS and Microsoft Azure). The list of suppliers is available at [SUPPLIERLIST].

In some cases, institutions will have already decided which cloud provider to use, but in other cases, they may wish to assess providers to see which one best meets their needs. In order to assess or

compare vendors or to run a mini-competition for procurement, institutions can use the responses of the vendors to the IaaS Framework, which is available on the GÉANT website in tabular format to enable easy comparisons. This online resource for evaluating vendors is available at [CATALOGUE].
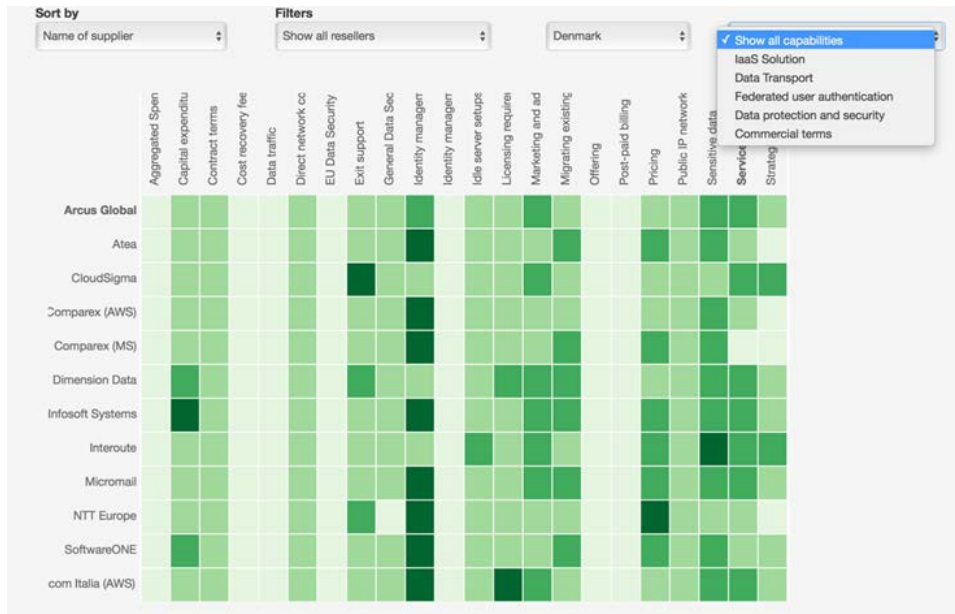

Figure 5.1: IaaS Service Matrix

The IaaS Service Matrix, which is a part of the GÉANT Cloud Catalogue, allows customers of the IaaS tender (IT and purchase managers at European NRENs and research and education organisations) to view the outcomes of the tender and drill down to the detailed answers from suppliers. It includes: legal aspects, security, continuity, confidentiality, and marketing and institutions on-boarding support, billing, as well as reporting requirements.
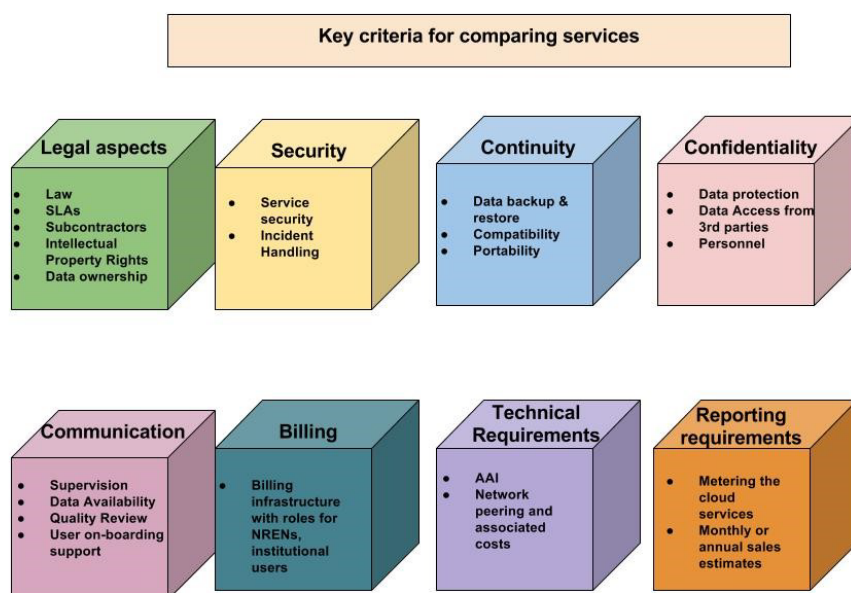
Figure 5.2: Key criteria for comparing services

NREN cloud managers can give their colleagues and IT and purchase managers from their institutions access to the IaaS service matrix. Instructions on how to do so, are described in the step-by-step guide [AUTHORISATION].

6 GÉANT Support

GÉANT assists NRENs' roll out of compelling and relevant cloud services and products for institutions and users. Equipped with common strategies, standards-based practices and interoperability, economies of scale brokerage and vendor management, and support for technical and mobile integration, GÉANT helps the NRENs to realise the potential of cloud-based ICT and offer attractive services to their institutions and users.

The GÉANT Cloud Team consists of experts from both NRENs and GEANT Limited, and offers support to the NRENs in all stages of cloud services deployment – from initial specifications and design to service portfolio roll out.

After Framework Agreements with Suppliers are signed, relevant documentation of the legal documents will be made available to the NREN cloud representatives [REPOSITORY].

For more information please refer to [SUPPORT].

FAQs – Frequently Asked Questions

The following topics are covered in the FAQs:

- IaaS Framework Scope
- Data Egress Discounts
- Call-off and Mini-Competitions
- NREN Roles
- Interaction with Suppliers
- GÉANT Support

IaaS Framework Scope

Q: Can a new NREN-connected institution use the Framework Agreement?
A: Yes, as long as the institution is added to on the published customer lists referenced in the Call for Tender. List of institutions of each NREN is available on the GÉANT Clouds website [CLOUDWEB].

Q: Can a university-affiliated institution use the Framework Agreement?
A: Yes, if it falls within definition of the character as listed by the NREN.

Q: Can Institutions/NRENs migrate a contract with an existing IaaS provider to the GÉANT IaaS Framework Agreement?
A: In principle, yes, but limitation and restrictions may apply to existing cloud provider accounts. This is a topic to be addressed as part of the institution's on-boarding activities. The relevant clause 9AC14) in the vendors' response to the Framework will provide further detail, see the Migrating Existing Contract column of the IaaS Matrix [CATALOGUE].

Q: Is there a GÉANT IaaS Framework contract exit strategy?
A: Yes, there is a clause (A.3.6) in the tender documents.

Q: What is the duration of the IaaS Framework contracts?
A: Framework Agreements have a duration of four years. A customer has four years minus three months to initiate a call-off. Then the call-off can exist for four years (and thus outlive the Framework Agreements). Exception: Microsoft services are time bound for four years in total.

Q: What happens after expiration of the contract negotiated by GÉANT? Is there an extension option and what does a favorable exit scenario look like?
A: There is no extension option for the Framework Agreement, but there is a plan to run a new IaaS tender before the current Framework runs out in four years' time.

Q: Is the list of suppliers per country a fixed list or can NRENs expect it to change?
A: The list of IaaS Frameworks awarded to a country is fixed. It is also impossible to guarantee that this list may not become smaller, for instance, if a supplier may refuse to sign, or may disappear for other reasons. The list of suppliers will NOT get bigger during the lifetime of this IaaS Framework.

Q: Is it necessary for an NREN and GÉANT to sign a document to start the process?

A: No, once the Framework Agreements are signed by GÉANT and counter-signed by the supplier, you can start consuming the services. However, An NREN must sign a Service Commencement Form [SCF] with each Supplier.

If the NREN is unwilling or unable to take the next steps (not sign SCF, not speak to suppliers) it can lead to certain issues, because the institutions can then directly approach suppliers and can bypass NRENs.

Q: How can we do changes to Framework Agreement once it has been signed?
A: NRENs cannot make changes to the Framework Agreement. Changes can be made by (and through) GEANT Limited. NRENs and institutions can make changes to the Call-Off Agreement, but only through a mini competition. When carrying out a call-off using a direct award, the Framework Agreement must be used as-is, including the Call-Off Agreement.

Q: What happens if Supplier X closes its office in the country?
A: Cloud suppliers are not required to have offices in all countries, and many will serve multiple countries from one office/country. GÉANT will have a vendor management role, and as part of its responsibilities for the ongoing operation of the IaaS Framework will assess suppliers to ensure they continue to meet the requirements of the framework.

Q: If an NREN resells virtual machines to an institution, can this institution resell these machines to another institution?
A: This would typically breach the terms and conditions of the Cloud Supplier and/or the NREN Reseller Agreement. The institution is free, however, to cross-charge the services internally, for instance, to allocate costs and overheads.

Q: Will the volume of discounts offered to NRENs as part of the IaaS Framework be limited by country or include the whole of Europe?

A: Consumption of services is aggregated across all clients in all the whole of Europe, so all will benefit.

Q: What happens if different NRENs apply significantly different cost recovery fee percentages?
A: The cost recovery fee is applied at the discretion of the NREN, but if excessive fees are applied, it will negate the beneficial results of the framework, and likely become a disincentive to clients.

Q: How can an NREN consume services?
A: By signing a contract in the same manner/following the same process as an institution.

Q: What will be the impact of Brexit?
A: An amendment will be added to allow the IaaS Framework to novate contracts from GÉANT's UK entity to GEANT's Dutch entity. The situation is still uncertain, but at present, we do not foresee any consequences of Brexit to be applied retrospectively. In any case, Brexit is not expected to take place before March 2019, which is close to the date of the IaaS Framework replacement.

Q: From the perspective of the Framework, to what country does an international or intergovernmental organisation belong? (How does an international organisation determine its affiliation?)
A: Such an organisation has a choice of whether to follow certain rules. By honouring the principle, such an organisation would go through one of the local NRENs. As long as such an organisation

adheres to its own internal rules, it is not bound by the EU procurement directive or its implementation in the GÉANT Framework.

Q: What information about the Framework Agreement and its results can safely and legally be disclosed, to whom and when? There will be cases where institutions will sign both enrollments, for education and non-education entities (e.g. different departments of an organisation).

A: Information under the IaaS Framework, such as prices and discounts, is confidential for both educational and non-educational organisations. The information is not public. Disclosure within an institution is the responsibility of that institution. Clause 11 of the Framework Agreement specifies how/what information may be disclosed.

Q: How can an NREN give staff and institutions access to the IaaS Service Matrix and Cloud Services?

A: NREN Cloud Manager can give access to the colleagues included in the Central Authorisation Management System [AUTHORISATION2]. A step-by-step guide is available on the Clouds website [CLOUDWEB].

Data Egress Discounts

Q: Do IaaS Framework users enjoy additional data egress discounts with Microsoft Azure?
A: Yes. While the general egress waiver for research applies, if GÉANT IaaS Framework users exceed the threshold, and subsequently do incur data charges, they will receive a 15% reduction on those charges via the GÉANT IAAS Framework.

Q: Do IaaS Framework users enjoy additional data egress benefits for Amazon Web Services (AWS)?
A: Yes. The AWS waiver is automatically applied to GÉANT IaaS users' bills and is automatically deducted. Researchers outside of the GÉANT IaaS Framework must take action to receive this benefit. In addition to being aware the discount exists, user must notify AWS that they wish to receive the discount and then prove their eligibility. The GÉANT IaaS Framework takes care of tall that for you.

Call-off and Mini-Competitions

Q: Will institutions be able to run separate IaaS procurements of their own?
A: Yes, institutions are not obliged to use the GÉANT IaaS Framework. Alternatively, it may be appropriate for an institution to procure using a mini-competition.

Q: Can the call-off process be conducted under national law?
A: No, UK law (Article 39 of procurement directive).

Q: Can call-offs be conducted in national language?

A: Formally, nothing is preventing this, however, GÉANT's legal and procurement specialists advise to keep a call-off in English due to:
- Non-discrimination procurement.

- Some vendors may not be able to reply if other languages are used, which may lead to less competition than anticipated.
- Given that it is a pan-European tender and all communication is in English, vendors would expect call-offs to also be in English.
- GÉANT's assistance cannot be expected in case of local language in a call-off.

Q: Can an NREN/institution can only conduct a call-off from the suppliers listed for their country**?**

A: Yes. Not all suppliers deliver service in all countries. Also, the number of Microsoft and Amazon resellers is limited per country. Therefore, it is possible for an NREN/institution to select the available suppliers. The IaaS service matrix [CATALOGUE], a part of the GÉANT Cloud Catalogue, allows a quick drill-down to the suppliers available in a specific country.

Q: What does the call-off process look like when the customer wants to use the GÉANT framework directly without organising a mini-competition? Does the customer just select its favourite supplier from a country-specific list? Or is there some other selection criteria?

A: NRENs/institutions are not required to write-down how the selection was made. For each supplier, there will be a contract packages [REPOSITORY] to help them with the selection.

Q: Is the call-off related to the role of the NREN (Referrer, Reseller)? Does the institution initiate it, when the NREN is the Referrer, and NREN initiate it when it is the Reseller?
A: If taking a Referrer role, both institution and NREN can carry out a call off. If the NREN is in a Reseller role, then the NREN must initiate the call-off procedure.

Q: What award criteria can be used on a mini-tender? Least price, most economic advantageous proposal?
A: Commercial: 70, quality: 30.

Q: Can a mini-competition have multiple winners?
A: Yes, it can if the mini-competition fulfils all local requirements.

NREN Roles

Q: Is it possible for one NREN to choose multiple roles under the Framework Agreement?
A: Yes, NREN roles are defined for each vendor, and in some cases it might make sense (e.g. to meet the requirements of a specific sector) to have more than one role per vendor.

Interaction with Suppliers

Q: Can suppliers approach Institutions directly without interacting with the NREN?
A: Yes, but only after supplier signs the Service Commencement Form [SCF] with the NREN.

Q: Can there be cases in which services of the suppliers will be sold without an NREN being involved?

A: How much involvement the NREN subsequently has in the actual sales of services depends on the NREN role (Referrer, Reseller or Underwriter) and what is agreed between the supplier and the NREN. NREN involvement can be anything from none (Referrer) to significant (Underwriter).

It is the responsibility of the party conducting the call-off to ensure that a compliant call-off is carried out. If there is a problem of a non-compliant call-off, then it is the responsibility of the NREN has to identify and resolve the problem. Suppliers, however, are required to provide GÉANT with management information about their sales because the cost recovery for GÉANT is based on the revenue per supplier.

Q: In case the NREN is willing to act as a Referrer, what steps should be taken to start the process?
A: The NREN and the Supplier sign the Service Commencement Form [SCF] in which they indicate the NREN as a Referrer and the amount of cost recovery payment.

Q: If an NREN changes its role during the framework term, does the NREN need to sign an additional Service Commencement Form with the Supplier?
A: Yes, a new Service Commencement Form [SCF] that replaces the previous one(s) has to be signed to track any changes in role.

Q: As for the Reseller model, the Sub-Clause 1.3.6 Volume 0 states: Information for Economic Operators states that by choosing the Reseller role, the NREN may be involved in the contracting and billing of its institution's service orders, and Supplier interfaces primarily with the NREN. Accordingly, is it possible the Supplier concludes a Call-Off Agreement with NREN, subsequently institutions will procure and use the services through its NREN on the basis of their existing contractual arrangements?
A: Yes, this is a plausible scenario.

Q: In the aforementioned scenario, will the NREN be entitled to manage prices for services, or NREN's profitability will depend solely on the additional services?
A: There are different possibilities for an NREN to recover the costs associated with reselling. The framework allows an NREN to levy a Cost Recovery Fee, in practice, as a percentage on top of list prices. An NREN can charge a Cost Recovery Fee using any of the model explained in Section 4.5 Cost Recovery Models of the Cookbook. NRENs are not-for-profit organisations, so it is a cost recovery they are interested in.

GÉANT Support

Q: Will GÉANT provide technical support for services to the Institutions?
A: No, the local NREN is responsible for ensuring technical requirements are in place e.g. SAML, network connectivity.

Q: How does the NREN contact GÉANT for support?
A: Please email *clouds@geant.org*

References

[2014/24/EU]   http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32014L0024

[AUTHORISATION]   https://intranet.geant.org/cloud_services_repository/
Documents/Cloud%20Services%20Offerings/IaaS%20Framework
%20Agreements/For%20NRENs%20-
%20Templates/G%C3%89ANT%20CAMS%
20User%20Guide.docx?Web=1

[AUTHORISATION2]   https://authzmanager.geant.org/registry/

[CATALOGUE]   https://catalogue.geant.org/reports/

[CLOUDBENEFITS]   https://clouds.geant.org/infrastructure-service-iaas-benefits/

[CLOUDWEB]   http://www.geant.org/Services/Storage_and_clouds/Pages/Tender.aspx

[eduGAIN]   http://www.geant.org/Services/Trust_identity_and_security/eduGAIN

[DIRECTIVE]   http://eur-lex.europa.eu/legal-content/EN/LSU/?uri=celex:32014L0024

[FRAMEWORK]   http://ted.europa.eu/udl?uri=TED:NOTICE:142458-2016:TEXT:EN:HTML

[LIST OF COUNTRIES]   http://eur-lex.europa.eu/legal-content/EN/NIM/?uri=celex:32014L0024

[REPOSITORY]   https://intranet.geant.org/cloud_services_repository/Pages/default.aspx

[SCF]   https://intranet.geant.org/cloud_services_repository/Documents/
Cloud%20Services%20Offerings/IaaS%20Framework%20Agreements/
For%20NRENs%20%20Templates/GE%CC%81ANT%20IaaS%20Framework
%20contract%20-%20Service%20Commencement%20Form%20v1.1-
final.docx?Web=1

[SUPPLIERLIST]   https://www.geant.org/News_and_Events/Pages/Game-changer-for-
cloud-computing.aspx

[SUPPORT]   https://clouds.geant.org/nren-support/

Glossary

AAI   Authentication, Authorisation, Identification.
AWS   Amazon Web Services

CSDM	Cloud Service Delivery Manager
IaaS	Infrastructure as a Service
IdP	Identity Provider
NREN	National Research and Education Network
OIP	Original Infrastructure Providers
SAML	Security Assertion Markup Language
SCF	Service Commencement Form
SSO	Single Sign-On