Version 1.0 10-03-2021

2020 IaaS+ Framework Agreement: A Guide to Using the Framework

Grant Agreement No.:   856726
Work Package   WP4
Task Item: Task 4
Dissemination Level: PU (Public)
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1   Introduction

In 2016 GÉANT led on a fully EU-rules-compliant tender process to seek commercial providers of cloud services on behalf of the European research and education community, supported by its member National Research and Education Networks (NRENs). Since the introduction in 2016, the Infrastructure as a Service (IaaS) Frameworks have shown a significant growth in annual turnover.

Well before the end of the GÉANT IaaS Framework (December 2020), it was decided to do a follow-on procurement to build on this success and extend the scope of the original Framework by accommodating other cloud services such as Platform as a Service (PaaS) and Software as a Service (SaaS). The number of eligible participants was to be increased by including many more countries, and by making the resulting services also available to the European research community via bodies such as the European Open Science Cloud (EOSC).

The 2020 IaaS+ Framework Agreement is the outcome of the OCRE project [OCRE], representing a consortium of partners which includes Trust-IT Services [Trust-IT], the RHEA Group [RHEA_Group], and GÉANT (on behalf of the European NRENs) [GÉANT].

This document provides guidance on the use of the 2020 IaaS+ Framework Agreement. It explains the basics of how the Framework operates (Section 2), outlines its benefits (Section 3) and offers a step-by-step description of roles and how to adopt the Framework and start the provisioning of procured cloud services using one of three methods under the Framework (Section 4). It concludes by summarising the GÉANT support available to NRENs (Section 5).

The guide is primarily aimed at the Cloud Service Delivery Managers appointed by European NRENs and their member institutions. Section 4 is intended to serve as guidance also for NRENs supporting their institutions in performing compliant call-offs.

2   2020 IaaS+ Framework Agreement

The 2020 IaaS+ Framework Agreement governs the relationship between GÉANT and the Suppliers (awarded Tenderers) in respect of the provision of services by the Suppliers to Customers (in this case, NRENs and their member institutions). A framework agreement is an "umbrella agreement" that sets out the terms (particularly relating to price, quality and quantity) under which parties named in the original tender (in this case, NRENs and their member institutions) can acquire and provide services to their community (end organisations) by individual call-off contracts throughout the period of the agreement. Individual contracts can be established by:

- Direct call-off (also known as direct award).
- Desktop evaluation (also known as desktop mini-competition).
- Mini-competition (also known as regular mini-competition).

The 2020 IaaS+ Framework Agreement sets out the procedure for ordering services, the main terms and conditions for the provision of the services, and the obligations of the Suppliers under this Framework Agreement. Customers (NRENs and their member institutions) may, at their absolute

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discretion and from time to time, order services from the Suppliers in accordance with the ordering procedure.

3   Benefits of the Framework

Through the Framework Agreement, the European NRENs deliver a digital single market for the consumption of cloud services offerings (IaaS, PaaS and SaaS) from selected Suppliers by the European research and education (R&E) community. The collective tender outcomes ensure these services are available for all participating NRENs and their institutions. Specific benefits are described below.

Collective expenditure and discounts

Through the collective pan-European tender led by GÉANT, the European R&E institutions have a stronger negotiating position: they aggregate the purchasing power of over 10,000 institutions across Europe. This allows the participants to negotiate better legal and financial conditions, otherwise not possible for individual institutions or even countries.

The Suppliers submitted bids with various extra discounts, some as a percentage of current prices, some as a consumption-based discount with thresholds, and more. In addition, the fees normally charged for data egress from the cloud are waived.

Saving time – no need for separate tenders

The GÉANT cloud tender saves both institutions and Suppliers valuable time. Institutions do not need to run separate tenders themselves. Suppliers reach a large user base, through one tender and Framework Agreement.

Legal benefits

The GÉANT framework agreements contain standardised terms and conditions. While in some cases individual countries may have additional local legal or regulatory requirements, the GÉANT framework agreements save legal costs as well as time and effort for individual institutions.

GÉANT applied the EC Procurement Directive (2014/24/EU) [EC_2014/24/EU], which enables cross-border procurement through a central purchasing body. This EC Directive ensures institutions can easily consume cloud solutions from the GÉANT Cloud Catalogue, via either a direct call-off, desktop evaluation or mini-competition.

The delivery model is as follows:

- GÉANT ran the tender and established framework agreements with providers.
- The Framework is split into 40 Lots (based on 40 participating countries) and agreements were awarded to Suppliers on a basis of one supplier per platform. NRENs and their connected institutions can choose the services that best fit their needs and the needs of their users.
- NRENs make these frameworks available in their respective country (and in some cases may add national legislative elements).
- Institutions consume without the need to run a tender themselves.

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Federated login and AAI services

The GÉANT identity management infrastructure significantly reduces the costs, complexity and security risks of the online services and the data is handled safely.

More specifically, single sign-on (SSO), federated login and authentication and authorisation infrastructure (AAI) services enable fast and easy access to various online services in R&E institutions and provide assurance to economic operators. The IaaS services offered by Suppliers are compatible with the GÉANT community's identity management capabilities as SSO, the federated authentication mechanism feature that uses existing institution-based ID, matches the needs of R&E institutions. SSO offers access management to institutions, accelerating the adoption of cloud services and reducing the complexity of creating and supporting multiple sets of IDs. Only one username and password need to be remembered for accessing the wide variety of e-services provided.

SAML, the key enabler for the exchange

Security Assertion Markup Language (SAML), being the standard within the sector worldwide, adds an additional security layer for the data-sensitive users. GÉANT and the NRENs provide authentication services based on the SAML2 protocol, which is the key enabler for the exchange of identity attributes in a trust relationship between an identity provider (IdP) and a service provider (SP). Using SAML2 on its own requires configuration on a per-institution basis for each service and therefore does not scale. SAML2 was a mandatory requirement in the tender and must be provided by all eligible Suppliers.

OpenID Connect is an equally admissible technology for SSO under OCRE.

eduGAIN infrastructure – no need for individual configuration

Some IaaS services will support authentication provided by eduGAIN, which is the pan-European standard and SAML-based authentication and authorisation infrastructure for single sign-on/off. eduGAIN provides access to online services that students, researchers and educators need and gives NRENs and service providers access to a large pool of users internationally, allowing users to access the resources of institutions or commercial cloud services using their one trusted identity. Participation in the eduGAIN federation provides access to an authentication service for all participating vendors and institutions without the need for individual configuration and lets users access online services with their trusted institutional account.

Network connections

The cloud services Suppliers will not charge for data traffic costs. Some Suppliers will apply a fair use policy. The Suppliers are required by GÉANT to connect their cloud infrastructure to the GÉANT and/or NRENs' networks.

High-capacity, low-latency network and direct peering

With an extensive GÉANT backbone, the national NREN network capabilities provide secure, high-capacity and low-latency network access to over 10,000 institutions across Europe. Direct peering between the NRENs, institutions and Suppliers helps to offer services without data-transport-related costs.

4 Getting Started

This section presents the different steps an NREN must follow to deliver cloud services to its institutions, including the procedures for each of the three award methods by which Customers establish contracts under the Framework in order to use specific services from a Supplier.

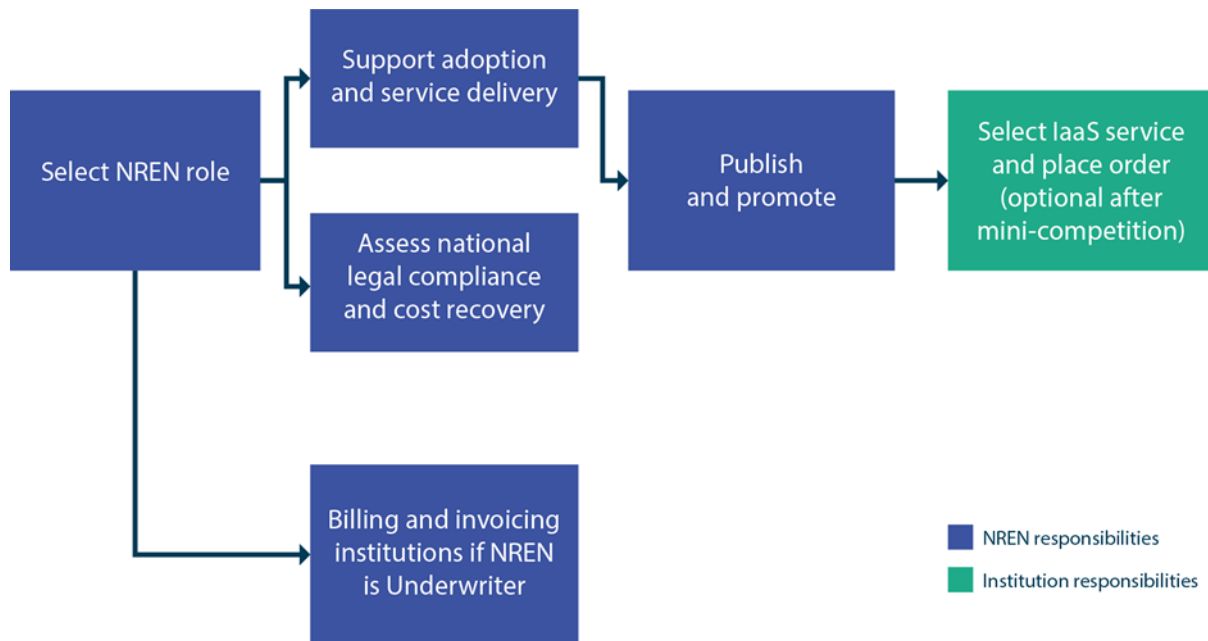The steps are summarised in the workflow in Figure 4.1:

Figure 4.1: NREN service delivery workflow

Each step is discussed in more detail below.

4.1 Role of NRENs

NRENs have already selected which role to take in the 2020 IaaS+ Framework Agreement: either Referrer or Underwriter. A description of each role and its implications for the NREN's member institutions is provided in Table 4.1:

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NREN Role	Description of the Role	What Institutions Can Do
Referrer	• Acts as intermediary by making the framework agreements available in its respective country and facilitating connected institutions in purchasing from Suppliers (direct delivery model). • Understands and consolidates the needs of the sector. Where appropriate, the NREN arranges added-value contributions for their community, such as improving terms and conditions with the vendor by mini-competition and conducting appropriate levels of due diligence to improve the value of the product for the sector on a national level. • The vendor makes the improved proposition to the sector and the NREN is paid a referral fee. • The NREN does not sit in the contracting line. • The NREN takes the Referrer income at a responsible level with benefits for both the sector and the NREN.	Directly acquire and use the cloud services from the Suppliers
Underwriter	• Makes purchases from Suppliers (on behalf of its connected institutions) and distributes the acquired resources across its community (institutions and end users). • The NREN sits in the contracting line and is seen as the only call-off Customer towards the Supplier. • GÉANT may also act as an Underwriter and make purchases from Suppliers in cases where an NREN asks GÉANT to fulfil this role.	Use the cloud services made available through its NREN

Table 4.1: NREN roles in the Framework Agreement

Each NREN should make sure it understands the role it has selected in the Framework Agreement. The main criteria on which each NREN based its selection relate to its knowledge, experience and fields of expertise, and are presented in Figure 4.2 below:

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NREN fields of expertise in the Framework

Strategic aspects

Compliance with NREN cloud strategy

Maturity of the NREN in providing commercially procured services to its community

Maturity of NREN's community (institutional readiness to move from own-operated infrastructure to Infrastructure as a Service)

Operational aspects

Ability to provide value-added services (e.g. technical consultancy, migration support, etc.)

Marketing and sales support

Financial aspects

Financial aspects (expected cost recovery, turnover and national service uptake)

Mechanisms and procedures in billing and contracting support

Legal aspects

Legal compliance with EC 2014/24/EU Directive

Figure 4.2: NREN fields of expertise on which role selection was based

As a Referrer, the NREN becomes the central gateway for the best deals, including commercial services. The 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 an Underwriter, the NREN takes responsibility and unburdens its customer institutions by taking care of their infrastructure services. This reduces costs and ensures competitive pricing, and provides the institution with IT expertise and support.

4.1.1 Nominating the Contacts

Each NREN will nominate the following cloud contacts:

- Cloud Service Delivery Manager who is responsible for the overall communication between the NREN and GÉANT and who coordinates national activities, legal matters regarding mini-competitions and call-offs, as well as marketing to the institutions.

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- In addition, if delegated by the primary contact, the NREN can have a marketing contact or a legal contact for procurement matters.

4.2　Assessing National Legal Compliance

The NREN should check that its usage of the Framework complies with EU and local laws, noting the following points:

- The tender has been let under the procurement legislation of The Netherlands, the Framework Agreement has been drafted under Irish law, and the call-off contract falls under the local law and jurisdiction of the signing institution.
- EU and EEA countries:
  - If Directive 2014/24/EU on public procurement is properly adopted, NRENs who are normally subject to public procurement must be free to use centralised purchasing activities offered by bodies from other EU countries (in this instance, GÉANT). [EC_2014/24/EU] shows who has implemented this in their national legislation and copies of such.
  - If Directive 2014/24/EU on public procurement is not properly adopted, NRENs can use the centralised purchasing activities of GÉANT by invoking direct application of the Directive.
- Non-EU countries:
  - Some states in the pre-accession or accession process undertook to implement EU directives. NRENs should check their laws and local procurement regulations.

4.3　Assessing Cost Recovery

Each Supplier will be notified about the chosen role of each NREN in their region by the GÉANT Contract Management Team.

Referrer role

NRENs will need to decide at the commencement of the Framework if they wish to apply cost recovery and the agreed rate up to a maximum of 5%. They will need to confirm this once every year to the GÉANT Contract Management Team.

NRENs will need to invoice Suppliers for the cost recovery fee on a regular basis, based on the sales figures reported by the Suppliers in the management information returns submitted on a quarterly basis to the GÉANT Contract Management Team.

Underwriter role

NRENs will need to complete a call-off contract with the Suppliers in their Lot. They will need to consider whether they need to run a mini-competition to secure additional or modified terms and conditions.

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4.4 Adoption and Service Delivery

A Customer (i.e. NREN or institution) who is planning to sign a call-off contract must go through the award procedure to close the procurement activity and be compliant with public procurement law. Three methods for awarding are described in Tender Volume 2, Annex D (which will be made available to nominated NREN cloud representatives on the GÉANT intranet in the GÉANT Cloud Services document repository [GÉANT_Cloud_Svcs_Doc_Rep]):

- Direct award (also known as direct call-off).
- Desktop mini-competition (also known as desktop evaluation).
- Regular mini-competition (also known as mini-competition).

Each method of buying services is described below.

4.4.1 Award Method 1: Direct Award

For direct award to be the appropriate method, one of the following statements should hold true for the Customer NREN or institution:

- We have an existing cloud platform.
- The service we wish to buy is not available on any other platforms on the Framework.
- Switching to an entirely new platform is not economically feasible.
- The partner organisation in the use case has already standardised on one platform.
- The licensing arrangements around our existing platform mean that due to intellectual property rights we cannot switch to another provider.

If one of these or similarly clear statements holds true, then NRENs or institutions can use this method for buying specific cloud services.

To facilitate this option, the GÉANT Contract Management Team has developed an easy-to-use tool which will support Customers in excluding Suppliers who do not meet technical and licence criteria, responses to the tender Minimum Requirement 7 and other elements of the provider's service offering. The tool will be made available to NRENs.

Purchasing institutions are expected to take responsibility for documenting their specific decision and the reasons used, for reference purposes should the procurement be audited at any later time. Institutions will not be asked to publish this decision elsewhere.

4.4.2 Award Method 2: Desktop Mini-Competition

When to use this award method

When a Customer's requirements can potentially be satisfied by multiple Suppliers, a direct award cannot be made. The Customer may then attempt to select the most advantageous Supplier to satisfy their requirements via a desktop mini-competition. In a desktop mini-competition, the Customer will

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collect the required (price) information that is needed to make a Supplier selection through a self-service exercise, requiring no or very limited additional active input from the Suppliers.

To facilitate this option, the GÉANT Contract Management Team has developed an easy-to-use tool which will enable Customers to conduct this process digitally.

The tool will enable Customers to evaluate Suppliers by reusing the scoring for most of the tender award criteria (ACs), recalculate the scoring of the price-related ACs using the exact instructions provided in this section, and optionally adjust the relative weighting of ACs to reflect their local requirements.

How to use this award method

To make an award decision using a desktop mini-competition, the Customer will use information contained in the Supplier's tender, GÉANT's scoring and information from the Supplier's online cost calculator. Suppliers are not contacted for further input.

The Customer **must**:

- Evaluate all Suppliers in its Lot.
  - Exception: if a Supplier is clearly unable to meet a specific requirement, this Supplier may be excluded (see direct award support tool for excluding Suppliers).
- Reuse GÉANT's scores against the offer of the Supplier for the following award criteria (ACs):
  - AC1 – Service and Support
  - AC2 – Marketing and Adoption Support
  - AC3 – Exit Support
  - AC7 - Sustainability
- Calculate new scores for the following ACs as per the instructions in this section:
  - AC4 – Price. IaaS / PaaS / SaaS discount percentage applied to current prices.
  - AC6 – Price. Additional Services.
- Use the standard call-off contract template without modifications.

The Customer **may**:

- Adjust the relative weight given to each award criterion (AC) within the range specified in the Allowed Weight Range column (see Table 4.3).

The Customer **must not**:

- Use *AC5 – Price. Further Available Discounts* for desktop mini-competitions.

The definition of all ACs can be found in Volume 2 of the tender documents (which will be made available to nominated NREN cloud representatives on the GÉANT intranet in the GÉANT Cloud Services document repository [GÉANT_Cloud_Svcs_Doc_Rep]).

Calculating a Supplier's new score for AC4 – Price

For a particular desktop mini-competition (DMC), the Customer calculates a Supplier's new score for *AC4 – Price* using the following formula:

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$$Supplier's\ new\ AC4\ score = 100 * (\frac{Lowest\ AC4\ price\ of\ all\ Suppliers\ in\ this\ DMC}{Supplier's\ AC4\ price})$$

A Supplier's price is calculated as follows:

- Obtain the current standard list price using this Supplier's online cost calculator.
- Subtract this Supplier's discount percentage, as specified in its AC4 answer (combining the Discount Percentage (DP) and the Local Discount Percentage (LDP)) from the current standard list price.
- Add their NREN's Referrer Cost Recovery percentage if relevant.

Please note: standard list prices in online cost calculators are typically modified on a frequent basis. Customers must account for this, e.g. by obtaining values for all Suppliers on the same day.

Example:

Supplier	Current standard list price as obtained from Supplier's online calculator minus applicable discount	Supplier's new AC4 score
X	10	100 * 10/10 = 100
Y	50	100 * 10/50 = 20
Z	100	100 * 10/100 = 10

Table 4.2: Example AC4 calculations

Calculating a Supplier's new score for AC6 – Price. Additional Services

For a particular desktop mini-competition (DMC), the Customer calculates a Supplier's new score for *AC6 – Price. Additional Services* using the following formula:

$$Supplier's\ new\ AC6\ score = 100 * (\frac{Lowest\ AC6\ price\ of\ all\ Suppliers\ in\ this\ DMC}{Supplier's\ AC6\ price})$$

A Supplier's price for AC6 is calculated using the Excel sheet provided in Annex D to Volume 2 of the tender documents (which will be made available to nominated NREN cloud representatives on the GÉANT intranet in the GÉANT Cloud Services document repository [GÉANT_Cloud_Svcs_Doc_Rep]).

The Customer will fill out the Excel sheet with the hourly rates according to the Supplier's answers to *AC6 – Price. Additional Services* and multiply these hourly rates by the number of hours expected to be used. Filling out the Excel sheet will result in a total price for additional services per supplier.

Desktop mini-competition award criteria and weight ranges

Table 4.3 below, reproduced from Annex D Table 1: Desktop Mini-Competition Award Criteria and Weight Ranges, **must** be used for scoring Suppliers using Award Method 2: Desktop Mini-Competition.

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Award criterion as specified in Vol. 2 of the tender documents	Description	Original Weight in GÉANT tender (in %)	Allowed Weight Range (in %)	Score
AC1	Service and Support	20%	15% – 25%	As scored by OCRE
AC2	Marketing and Adoption Support	25%	5% – 25%	As scored by OCRE
AC3	Exit Support	5%	5% – 25%	As scored by OCRE
AC4	Price (obtained via online calculator)	35%	20% – 50%	Score recalculated by Customer
AC5	Price. Further Available Discounts	n/a	n/a	AC5 cannot be used in a desktop mini-competition
AC6	Price. Additional Services	5%	0% – 15%	Score recalculated by Customer
AC7	Sustainability	10%	5% – 25%	As scored by OCRE
	Weight must add up to a total of 100%	100%	100%	

Table 4.3: Annex D Table 1: Desktop mini-competition award criteria and weight ranges

Please note: AC6 – Price. Additional Services _does not apply for The Netherlands (Lot 27)._

4.4.3   Award Method 3: Regular Mini-Competition

When to use this award method

When the requirements of a use case cannot be satisfied using Award Method 1: Direct Award or Award Method 2: Desktop Mini-Competition, Customers can organise a regular mini-competition, reopening competition and requiring further input from Suppliers.

A mini-competition may be necessary in case of special conditions or issues on the national level. If a mini-competition is needed, the NREN or institution will create its own criteria for Suppliers or redraft the proposed call-off agreement. The NREN then invites Suppliers to bid and scores the tenders, finally signing with the highest-scoring Tenderer.

Mini-competitions enable tailor-made solutions, either:

- Technically.

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- Operationally (e.g. specific reporting requirements).
- Legally (e.g. specific legal terms needed in the service agreement).
- Financially (e.g. NREN cost recovery).

How to use this award method

The Customer **must**:

- Invite all Suppliers in its Lot to participate in the regular mini-competition.
- Follow the process below:

    1. Prepare a draft order and/or draft relevant appendices if and as applicable, including the reasonably supplemented or amended call-off terms and conditions.
    2. Invite tenders by conducting a regular mini-competition in accordance with the regulations and in particular:
        a. Consult in writing the Framework Providers for the services requirements and invite them within a specified reasonable time limit to submit a supplemental tender pursuant to award criteria elaborated in Volume 2, Annex D Award Procedures of the tender documents, as included in the Framework Agreement Schedule 2 (which will be made available to nominated NREN cloud representatives on the GÉANT intranet in the GÉANT Cloud Services document repository [GÉANT_Cloud_Svcs_Doc_Rep]).
        b. Set a reasonable time limit for the receipt of the supplemental tenders which takes into account factors such as the complexity of the subject matter of the call-off contract and the time needed to prepare those tenders.
        c. Keep each supplemental tender confidential.
    3. Apply the award criteria to any valid supplemental tender received.
    4. Make an order and execute the call-off contract with the successful Framework Provider.

The Customer **may**:

- Conduct collaborative regular mini-competitions on behalf of and/or with other Customers in their Lot.
- Use a modified call-off contract.

The GÉANT Cloud Team envisages that the majority of institutions will choose to run the desktop mini-competition method to select the most appropriate Supplier. To facilitate this, the Team has produced an Excel-based tool which will enable institutions to enter their requirements and find out which option best meets their needs.

4.5   Promotion

In order to promote services to different local audiences (universities, schools, researchers and e-infrastructures), NRENs can use different communication channels: websites and user portals, mailing lists, newsletters, articles in magazines, user events, conferences or workshops (for example, in-country clouds workshops or vendor-led workshops) and printed material (leaflets, booklets, reports).

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5 GÉANT Support

GÉANT is uniquely positioned to offer the resources and services to assist NRENs in rolling out market-leading, economically viable and relevant cloud services for users. Equipped with common strategies, standards-based practices and interoperability, economies of scale brokerage, vendor management and support for technical and mobile integration, GÉANT partners with NRENs to realise the potential of cloud-based ICT and help NRENs offer world-class services [GÉANT_Cloud_Svcs] to users.

The GÉANT Cloud Team offers support for NRENs at all stages of cloud services deployment, from initial specifications and design to service portfolio rollout.

All relevant documentation and legal documents will be made available to nominated NREN cloud representatives on the GÉANT intranet in the GÉANT Cloud Services document repository [GÉANT_Cloud_Svcs_Doc_Rep].

GÉANT will provide support to the NRENs in multiple ways, as summarised in Table 5.1.

Support Aspect	Description	Link
Websites	GÉANT Cloud Services website 2020 IaaS+ Framework catalogue	https://clouds.geant.org/ https://www.ocre-project.eu/services/cloud-suppliers
Data Classification Sheet	The Data Classification Sheet assists decision makers by enabling them to classify relevant data with respect to security considerations. Decisions can then be made on which data can safely be migrated into the cloud. This tool can be accessed on the GÉANT Clouds Services website.	https://clouds.geant.org/data-classification-for-cloud-services/
Communication materials	The GÉANT Cloud Team will provide templates which NRENs can use for communicating with their institutions.	–
Cloud Forum	The GÉANT Cloud Team hosts a fortnightly Cloud Forum VC session for the NREN Cloud Service Delivery Managers, on Fridays at 10.00 CET. This forum lets participants discuss and collaborate on rollout strategies, activities and progress.	–
NRENs and Supplier meetings	The GÉANT Cloud Team organises VC and (when possible) face-to-face sessions for the NRENs and Suppliers to meet and discuss cloud delivery and adoption.	–

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Support Aspect	Description	Link
Newsletter	The GÉANT Cloud Team publishes a newsletter, which includes useful links to user stories, case studies, interviews, showcases, workshops and much more. The newsletter is sent to NREN Cloud Service Delivery Managers and project contacts that have expressed interest in the GÉANT Cloud activity.	https://clouds.geant.org/geant-newsletter-subscription/
Outreach, knowledge-sharing and legal support	Other support services the GÉANT Cloud Team offers to NRENs include: • Local "roadshows". • Cloud showcases (live and recorded webcasts). • Vendor showcases. • Case studies. • Research collaborations on operating file storage platforms and IaaS platforms. NRENs are invited to contact the Team for more information or with their specific request.	clouds@geant.org

Table 5.1: GÉANT support

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                          Forms/AllItems.aspx
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[RHEA_Group]   https://www.rheagroup.com/
[Trust-IT]   https://www.trust-itservices.com/

Glossary

AAI	Authentication and Authorisation Infrastructure
AC	Award Criterion
DMC	Desktop Mini-Competition
DP	Discount Percentage
EEA	European Economic Area
EOSC	European Open Science Cloud
EU	European Union
IaaS	Infrastructure as a Service
ICT	Information and Communications Technology
ID	Identity
IdP	Identity Provider
LDP	Local Discount Percentage
NREN	National Research and Education Network
OCRE	Open Clouds for Research Environments
PaaS	Platform as a Service
R&E	Research and Education
SaaS	Software as a Service
SAML	Security Assertion Markup Language
SP	Service Provider
SSO	Single Sign-On
VC	Videoconference

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