GÉANT Infrastructure as a Service (IaaS) Framework Procurement 2016

CALL FOR COMPETITION

Volume 2: Invitation to Submit an Offer

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# Guidance Notes for Applicants

This Invitation to Submit an Offer is Volume 2 of a set of 4 (0 to 3), comprising the Call for Competition. Before completing this Invitation to Submit an Offer, which should be submitted alongside Volume 1, Selection Criteria, Tenderers should familiarise themselves with the procurement process as described in Volume 0, “Information for Economic Operators”. All procurement documents are available to download from the eProcurement Portal at [www.geant-procurement.net](http://www.geant-procurement.net).

This Invitation to Submit an Offer has been designed to identify Tenderers who offer the most economically advantageous Offers as judged by the evaluation mechanism set out within. Subject to passing Stage 2, due diligence those Tenderers will be awarded a Framework Agreement.

Please return a completed version of this and all documents and correspondence through the GEANT e-procurement portal at [www.geant-procurement.net](http://www.geant-procurement.net), according to the guidelines for Submission of Responses given in Volume 0, “Information for Economic Operators” of this Call for Competition.

“You”/ “Your” means Tenderer.

Tenderers must ensure that all questions are completed accurately and concisely and in the format requested in accordance with the Requirements at Section 3. Failure to do so may result in a Tenderer’s submission being disqualified. If the question does not apply to you as the Tenderer, please state clearly ‘N/A’ and explain why.

Where a “Yes” or “No” answer is required, Tenderers shall mark the relevant checkbox so as not to create ambiguity for evaluators. Any uncertainty should be raised by the Tenderers through clarifications via the eProcurement portal before submitting their response.

Information must be entered into the appropriate answer boxes except where additional documentation is required or specifically requested.

Should you need to provide additional Appendices in response to the questions, these should be numbered clearly and listed as part of your declaration. A template for providing additional information is provided at Annex A.

Tenderers must not alter any questions set out in this Volume in their response. Amended questions will not be evaluated and a score of zero will be applied in that scenario

Tenderers must not cross-reference their answer to one question in their answer to another, even where there is commonality. Cross-referenced questions will not be evaluated and a score of zero will be applied in that scenario.

GEANT may disregard any part of an answer to a question that exceeds the word limit (where one is specified) or when a response is considered disproportionate. For example, do not submit what may be considered standard sales literature as part of your Tender where it adds little or no value to the evaluation process.

# Scoring and Evaluation

Tenderers who have successfully passed the Selection Criteria assessment will have their Offers evaluated and scored on the basis of the most economically advantageous tender.

Any Tenderer who has successfully passed the Selection Criteria assessment (as described in Vol 1) will have their offers evaluated.

A score will be calculated in accordance with the methodology set out in this section and Tenderers will be ranked by score.

GEANT intend to award Framework Agreements to providers who can deliver the IaaS services as specified in this tender. This will be judged by identifying (based on the responses to Vol 1 and 2) Providers whose proposals meet all Minimum Requirements (MRs) and rank the highest against the Awarding Criteria. To come to the balanced set of IaaS providers awarded a Framework Agreement GEANT will use the scoring of the award criteria (ACs) in two ways:

--1.            For selecting right holder/OIP type providers

The total score for the evaluated AC questions will be used to compile a ranking of Tenderers. Any Tenderer who has reached an overall score of 60% or higher and meets all MRs will be considered to have passed.

--2.            For Tenders acting as Resellers from each IAAS provider Group per country per right holder/OIP (Resellers)

GEANT believes it is not in the best interest of the Customer, the IaaS brand or its resellers to award too many resellers a Framework Agreement for a specific country. GEANT realises that the requirements it states in this tender require commitment and investment on the reseller side. It is not deemed proportional by GEANT to award framework agreements to an unlimited number of resellers per country when it cannot guarantee a minimum volume per brand over the duration of the contract.  The maximum number of eligible Tenders from each IAAS provider Group per country per right holder/OIP will be related to the number of tertiary students per country as published by the EC at <http://ec.europa.eu/eurostat/statistics-explained/index.php/Tertiary_education_statistics>

|  |  |
| --- | --- |
| **Number of Tertiary students per country** | **Max. number of eligible Tenders from each IAAS provider Group per country per right holder/OIP, each scoring an overall score of 60% or higher** |
| 0 - 500.000 | 3 |
| 500.000 - 1.000.000 | 4 |
| 1.000.000 - 2.000.000 | 5 |
| more than 2.000.000 | 6 |

Table 2.1: Relationship between tertiary students per country and max. number of eligible Tenders.

The requirements set out in Section 3 are divided into MR: Minimum requirements (mandatory requirements), AC: Awarding criteria (scored based on completeness of specification) and IO Information Only (not scored).

Framework Agreements thus will be awarded to Resellers on a per country basis. The maximum number of Agreements awarded is set out in Table 2.1.

Where a Reseller meets all MR assessment requirements their response to AC questions will be assessed as described below. The Tenderers will then be ranked by their score and Framework Agreements awarded to those that fall within the range per country as specificed in Table 2.1.

Where a reseller identifies multiple countries in their response to MR1 then the response will be considered on a single country basis, i.e. a response may be for 6 countries but the Tenderer could be awarded a Framework Agreement for only 3 of these.

## Evaluation Methodology

Information Only (IO) questions within Section 3.6 are not scored, however the information provided may be used by GEANT if it assists the comprehension and assessment of another question.

Minimum Requirement (MR) questions within Section 3 describes the minimum functionalities/services that GEANT will require its appointed service provider to meet or exceed, and therefore are of a “Pass/Fail” nature.

Where a Tenderer is assessed as passing all MR questions then their responses to the questions will be assessed as described within this section and the mark for each question weighted in accordance with Table 2.2: Scoring mechanism.

Where the Tenderer answers “No” to any MR question at, GEANT reserves the right to exclude the Tenderer from consideration, but may at its discretion decide to allow the Tenderer to proceed further.

The Procurement Team will establish an evaluation panel that will use its collective professional judgement to evaluate responses in accordance with the evaluation criteria, weighted and (sub-weighted) as shown in Table 2.4 Awarding Criteria Weightings

GEANT reserves the right to reject offers that do not meet its minimum standards, where stated.

Evaluation will take place on a per country basis.

GEANT reserves the right to consider answers to one question where they may support the evaluation of another question.

The Procurement Team will award scores for those questions related to Quality Evaluation Criteria and non-price commercial questions reflecting reasoned professional judgement as to the merits of each answer.

Answers to Awarding Criteria (AC) 1-14 will be given a mark out of 6 (0 being the lowest and 6 being the highest). The mark will then be multiplied by the weighting to give a percentage for each question.

Answers to Awarding Criteria (AC) 15 will be given a mark out of 5 (0 being the lowest and 5 being the highest). The mark will then be multiplied by the weighting to give a percentage for each question.

Marks will be awarded in accordance with the allocations shown below. Where specific characteristics are expected in order to secure a certain score, these will be set out. However, the response should not necessarily be limited to these characteristics.

Where any questions are assessed as obtaining a 0 score, GEANT reserves the right to reject that Tender.

The scores for each will be calculated applying the weightings shown in Table 2.4 below.

| Score | Criteria | Judgement |
| --- | --- | --- |
| 6 | 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. | Exceeds the stated requirements |
| 5 | 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. | Fully meets the stated requirements |
| 3 | 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. | Minor Reservations |
| 1 | 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. | Significant Reservations |
| 0 | The response does not meet requirements. | Not Answered / Unacceptable |

Table 2.2: Scoring mechanism AC1-14

|  |  |  |
| --- | --- | --- |
| Evaluation result | Score | Description |
| Acceptable | 5 | Full acceptance of the relevant provisions of draft Contract or minor amendments having no appreciable impact on risk transfer. |
| Minor Reservations | 3 | Response implies some minor additional commercial or legal risk for the Customers. |
| Major Reservations / Unacceptable | 0 | Response implies material additional commercial or legal risk for the Customers. Response makes changes, which have the effect of removing or substantially depriving the Customer of all or a material part of the protection or rights provided by the clause. |

Table 2.3: Scoring mechanism AC15

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **DESCRIPTION** | **AC NUMBER** | **Description** | **WEIGHTING** | **SUB WEIGHTING** | **MAX POSSIBLE SCORE** | **MAX WEIGHTED SCORE** |
| **IaaS 15%** | 1 | Marketing and Adoption Support | 15 | 40 | 6 | 6 |
| 2 | Service and Support | 30 | 6 | 4,5 |
|  | 3 | Strategic Collaboration |  | 30 | 6 | 4,5 |
|  |  |  | **Sub total** | **100** |  | **15** |
|  |  |  |  |  |  |  |
| **Data - 15%** | 4 | Connecting Cloud Providers over Public IP | 15 | 50 | 6 | 7,5 |
| 5 | Direct Customer Connections | 25 | 6 | 3,75 |
| 6 | Exit Support | 25 | 6 | 3,75 |
|  |  |  | **Sub total** | **100** |  | **15** |
|  |  |  |  |  |  |  |
| **Auth - 30%** | 7 | edugain support | 30 | 25 | 6 | 7,5 |
| 8 | General Data Security | 50 | 6 | 15 |
| 9 | Sensitivity Levels for Data | 25 | 6 | 7,5 |
|  |  |  | **Sub total** | **100** |  | **30** |
|  |  |  |  |  |  |  |
| **Commercial 40%** | 10 | Cost transparency: Idle server setups | 40 | 5 | 6 | 2 |
| 11 | Accommodating capital expenditure | 5 | 6 | 2 |
| 12 | IaaS Cloud Service Licencing Requirements | 25 | 6 | 10 |
| 13 | Pricing | 50 | 6 | 20 |
| 14 | Migration of existing contracts | 10 | 6 | 4 |
|  | 15 | Framework Agreement |  | 5 | 5 | 2 |
|  |  |  | **Sub total** | **100** |  | **40** |

Table 2.4: Awarding Criteria weightings

### Price Evaluation Methodology

Where an discount is requested, the Tenderer with the highest overall discount for will be awarded the maximum available score. The remaining Tenderers shall be awarded a percentage of the maximum available score relative to the best price. For example: Tenderer A submits the highest overall discount of 30%. Tenderer A is awarded the maximum available score – 100%. Tenderer B submits a discount of 15%. As the discount is half the discount from Tenderer A, Tenderer B is awarded 50% of the maximum available score.

GEANT reserves the right to add additional costs to a Tenderer’s response in order to normalise any Bids.

### Contract Terms Evaluation Methodology (AC15)

Tenderers are required to complete the template in Volume 3 – MSA and, where they deem necessary, submit a mark-up of the contractual documentation in accordance with the instructions in Volume 3.

Tenderers accepting the Contract and Schedules in its presented form, and making no mark up to the proposed clauses and schedules will receive 100% of the total available marks for this evaluation criterion. Note however that extensive or mark-up of any specific clause that alters the balance of risk significantly may render the Tenderer’s entire Tender as incapable of being accepted.

Tenderers should accept all the Mandatory Clauses (including linked definitions) in the form in which they are presented.

Failure to accept any of the Mandatory Clauses (including changes to relevant defined terms) may result in the Tender being scored as below threshold for Contract. If a Tenderer takes such an approach, the entire Tender may be rejected.

A Tenderer is permitted to seek genuine clarifications in relation to the Mandatory Clauses (but this right should not be used to negotiate by the back-door).

The Tenderers’ responses will be evaluated using the methodology set out below. GEANT will score each Tenderer’s contractual response based on whether overall it regards the Tenderer’s response in the Category as “Acceptable”, “Minor Reservations”, “Major Reservations” or “Unacceptable”.

If a Tenderer has proposed any changes which GEANT regards as “Major Reservations” or “Unacceptable” the Tenderer’s entire Tender may be rejected.

Where Tenderers propose changes to clauses that are "Available for mark-up" they should, where required, be of substance and not purely stylistic.

All clauses are equally weighted, and the Procurement Team will use its professional judgement to allocate a mark for an aggregate assessment of any amendments. This mark will be determined as a proportion of the maximum marks available and weighted as set out in Table 2.3.

# Requirements

## IaaS Solution

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| MR1 – IaaS services offering (Minimum Requirement) |
| R. GEANT requires IaaS offerings that can be utilized by the Customer. Solutions must have functional and service characteristics that are at least equivalent to generally accepted marketplace IaaS service offerings. The countries to which the IaaS solution is to be available shall be known.  Complimentary IaaS solutions may be offered, subject to them being within the scope of the requirements, in addition to the main IaaS service offering, but must offer IAAS services as a minimum requirement.  The solution must be provided in such a way that it allows the Customer to operate in the roles of referrer, reseller and underwriter as described in Volume 0 section 1.2.6.  Q. Tenderers shall provide a service summary of the IaaS solutions being proposed under this framework and populate the spreadsheet in Annex B Countries to identify in which countries the described services will be available. Please note the definition of service availability on a country basis shall be that all features described for the service are available and the service can be delivered in the local language or English and at the service levels described, e.g. lead time for on-site professional services support.  Furthermore, Tenderers are to confirm that the license grant provisions set out in Vol 3, Schedule 4, Clause 3 are agreed.  *Response Guidance*   * Provide a list and summary description of IaaS services being offered- * Provide a list of complementary services being offered * Populate the spreadsheet (Annex B Countries) of which countries this will be delivered in * Please confirm that offers made as part of this tender will be available disregarding the number of countries in which Tenderer will be authorised to operate as part of this tender. * Please note that question IO1 asks for full product definitions. Responses to this question shall be limited to summary product descriptions i.e. not full product specification sheets * Response to Q to confirm Vol 3 review and acceptance of Clause 7.2 |
| Click here to enter text. |

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| AC1 – Marketing and Adoption Support (Awarding Criteria) | |
| R. GEANT is seeking Suppliers who can provide marketing to end-user institutions regardless of the preferred service delivery model (reseller, referral, and underwriter). Based on the preferable model GEANT/NRENs can provide providers with channels and the support to reach the users, however GEANT/NRENs are not capable of providing any sale support, which is expected to be handled by respected provider.  GEANT is expecting from Vendors to commit to the marketing for the services, support adoption, show what value IaaS services will bring to for R&E Community, show possibilities and best-cases, overcome reluctance and apprehensions, and to provide relevant information during decision making and evaluation of benefits of such services. GEANT and NRENs can provide market insight, ease of targeting R&E communities to simplify reaching of potential users, provide cost-effective channels to raise awareness, ease evaluation and purchase decision making, unite delivery mechanisms, and overcome barriers in service provisioning and after sale (support, outreach, reporting etc.)  Providers can play a large role in the speedy adoption of these IaaS services among institutions.  Q   * How do you propose marketing for the services and how would roles and responsibilities for provider, NRENs, GEANT and Institutes would be defined? * What marketing tools and channels can you provide? (i.e. free trials, consultancy for service adoption, adoption pilots, availability of promotion materials) What marketing support do you expect from GEANT, NRENs? * Confirm if there is any difference in the marketing activity proposed by country for the countries identified in response to MR1. * Are you able to provide 3 workshops per country per year free of charge to aid adoption? The NREN can provide meeting facilities and can facilitate sending invitations.   *Response Guidance*  Provide processes and plans to aid adoption in each of the countries in which you plan to offer these services. | |
| Click here to enter text. |

| AC2– Service and Support (Awarding Criteria) |
| --- |
| R: GEANT is seeking Suppliers who can provide direct support to end-user institutions regardless of the preferred service delivery model (Volume 0 section 1.2.6 c). Aspects as convenience, usability, are essential.  Q: Please provide as detailed as possible your ability to deliver the support forms listed underneath.   * Confirm if there is any difference in the service and support levels proposed by country for the countries identified in response to MR1 * Please confirm per country the lead time needed before a meeting at the main offices of the NREN.   *Response Guidance (please distinguish between own staff and abilities and those of Right Holder/OIP in case or reseller*   * *Detailed information on sales and support staff located in each of the countries* identified in response to MR1 * *Ability to deliver on the ground pre sales support* * *Ability to aid institutions with on-site support during migrations* * *Availability and costs of migration tooling* * *Service desk services*   + *e-mail, call desk, ticketing system, potential integration with client support interfaces*   + workflow for escalation process (escalation personnel, escalation thresholds)   + *Levels of support (*1st line, 2nd line,3rd line, workflow for communication, span-of-control*)*   + expected roles of provider / GEANT / NRENs within support chain   + *Operating hours* * *Premium support availability*   + *Services, Pricing model (free, access fees)* * *Other support*   + Knowledge base portal, manuals, how to, faq, community portal etc. * Clarify which services are provided free, and which are provided for additional costs). |
| Click here to enter text. |

| AC3 – Strategic Collaboration and Interaction (Awarding Criteria) |
| --- |
| Please explain your plans and procedures for the continuous and strategic collaboration and interaction with GEANT and the NRENs, including discussing feature requests, access for GEANT and the NRENs to product teams and sharing of product information and roadmaps, to ensure the service can meet future needs of the Research and Education community and is kept in line with technological developments, legislation and regulations. Part of this would involve closer interactions on Identity Management (federated Single Sign-On) and network connections, to allow for end-to-end orchestration and automated provisioning, to accommodate large scale use.  GEANT offers Tenderers the opportunity to apply for becoming an associate member of GEANT. Being a GEANT associate provides unique opportunities to meet and discuss, also on an informal basis, with decision makers from the GEANT NREN community. Associate status gives the right to receive information from the General Assembly, GEANT's highest governing body, which is not available publicly (excluding some confidential information). It also gives the right to attend meetings of the GEANT General Assembly and associated events in an observer capacity (with some exceptions for parts of meetings that may be designated as member-only). An application for an associate status has to be approved by the General Assembly. Associate status costs around 2500 euro per year.  *Response Guidance*   * Explanation of how you plan to interact with GEANT and the NRENs on a strategic level. * Which named resources will be available? * Which frequency and type of interaction do you propose? |
| Click here to enter text. |

## Data Transport

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| MR2 – Data Egress (Minimum Requirement) |
| R. IaaS uptake by European institutions is currently hampered by a lack of cost predictability. GEANT believes that having a direct network connection/peering with providers eliminates the need for providers to charge for data transport. GEANT is seeking to remove data transport charges for all its clients  Volume 3 clause 6 contains a statement to confirm that there will be no data transport charges levied for IaaS services.  Q. Bidders to confirm their acceptance of this clause  *Response Guidance* • Please explain how (under which conditions) your organisation is able to offer IaaS services without data transport related charges. |
| Click here to enter text. | |

| AC4 – Connecting Cloud Providers over Public IP (Awarding Criteria) |
| --- |
| R. GEANT and the NRENs operate a network connecting all institutions with secure, high capacity, low latency connections. The network is able to handle L3 (IP) traffic and L2 (Ethernet/vlan/MPLS etc) circuits. GEANT and the NRENs want to connect vendors directly (peer) to the GEANT network at layer 3 to the providers for delivery of the IaaS services to utilise this high performance network’s full potential. The direct connection will also help the vendor offer its services without data transport related costs as no commercial network routes need to be used for the service delivery.  GEANT wishes to provide the optimum service in terms of performance, security and end to service assurance to its client institutions by utilising the GEANT network.  A key GEANT objective is to eliminate traffic charges e.g. egress charges from Service Providers for the provision of IaaS services as it is a barrier to the adaption of cloud services by institutions. Direct connectivity across the GEANT network will help eliminate network charges (IP transit) for institutions and Service Providers. This because GEANT and the NRENs will take care of transporting the data form the Service provider to its destination.  The preferred approach is a direct connection with GEANT or with one or more of the connected NRENs. The response evaluation will score the connectivity options in order of preference as listed below:   * Connections can be made (in order of preference) to GEANT at its PoP locations, at NREN PoP locations or Internet Exchanges –as set out in Annex B. * Tenderers should indicate the network throughput limitations (if any) that limit performance for end users e.g. throttling and or filtering. * Tenderers should confirm the speed of the connection proposed e.g. Ethernet 1 GbE, 10 GbE or 100 GbE. * Tenderers should describe their capabilities for using the service without Network Address Translation (NAT), for handling public IPv4 and IPv6 ranges per customer in order to maximize integration between campus network and Service Provider. * Tenderers should describe their capabilities for multicast. * Service providers are responsible for any local loop connectivity or cross-connects and should clarify what the demarcation point will be, eg meet me room * Resilience in the number of interconnect points provided in the event of a failure in connectivity.   Q. Please provide details of how you already connect to or can interconnect your IaaS services to the GEANT network using IP BGP peering.  *Response Guidance*  Response guidance: Tenderers should confirm explicitly their ability to connect to or interconnect your IaaS services to the GEANT network using IP BGP peering and provide detailed information on the requested options. |
| Click here to enter text. |

| AC5 – Direct Customer Connections (Awarding Criteria) |
| --- |
| R. GEANT and the NRENS operate a network connecting all institutions with secure, high capacity, low latency connections. The network is able to handle L3 (IP) traffic and L2 (Ethernet) circuits. The GEANT community sees growing demand for L2 connections from campus networks to IaaS providers. Over these L2 or end-to-end connections institutions within the community can setup their own L3 networks or interconnect their own networks over L2 or L3. This capability is required in order to integrate the Cloud providers IaaS infrastructure with the campus network to gain flexibility, manage network based security parameters and have a guaranteed amount of bandwidth for the infrastructure hosted at the provider. To do this there needs to be a network connection between GEANT and the IaaS provider over which the circuits will be carried. GEANT and the NRENs have the ability to establish point to point circuits between the IaaS provider and campus sites at capacities of up to 10Gbps.  Q. Please provide details on how such L2 connections can be made from the IaaS provider perspective.  *Response Guidance*   * Tenderers should describe whether a connection between the IaaS supplier's network and the end customer’s network can be established at L2 to achieve the goals as described above. If this is possible Tenderer should describe the approach and whether a secure connection per customer / tenant can be set-up and managed on a per customer / tenant basis. * Bids should describe the roles and responsibilities (if any) proposed for GEANT in the provision of L2 connectivity to end user institutions. * Tenderers should indicate the network throughput limitations (if any) that limit performance for end users e.g. throttling and or filtering. * Tenderers should describe their capabilities for connecting to an end user institution’s network at L2. (for multiple network zones, VLANs, protocols supported etc.) * GEANT and the NRENs have a broad experience with automating multi domain L2 connections. Integrating these automated L2 circuits with the Service Providers services is recommended. * Service providers are responsible for any local loop connectivity or cross-connects and should clarify what resilience is provided in the event of a failure in connectivity. * GEANT does not consider VPN connectivity options on top of existing IP networks to be a valid solution and this will be judged as not meeting the requirements. |
| Click here to enter text. |

| AC6 – Exit Support (Awarding Criteria) |
| --- |
| R. End of service treatment of customers plays an important role in the uptake as it demonstrates the ability to migrate to other services. A good exit strategy/plan will lower the risks for public IaaS services currently perceived by many Institutions.  Q. Please outline the exit strategy for a customer exiting your service (or support offerings) and associated costs. Describe how you support customers who leave your IaaS Service in the following aspects: • Data portability including (archived) backups • Metadata extraction • Which support is offered for free and which additional services are offered • Decommissioning and migration of data after contract expiration • Providing unrestricted read-only access to the data stored for 6 months after contract expiration. • Guaranteeing the deletion of all data from all sites including backup sites after those 6 months. The Tenderer shall be responsible for maintaining and providing unrestricted read only access to the data stored in the services, subject to user access control, for 6 months after contract has expired. Response Guidance Please provide information about how a customer accesses the data stored in the service after the contract has expired, highlight any differences to services during the 6 months after contract expiration.  Describe the services which can be made available to support this and the associated costs. |
| Click here to enter text. |

## Federated user authentication

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| MR3 – Support for GEANT Federation Services, SAML2 (Minimum Requirement) | |
| R. Support by cloud providers for Single Sign-On using existing Institution based IDs accelerates the adoption of cloud services, as it prevents the complexity of creating and supporting multiple sets of IDs across multiple providers. GEANT and NRENs provide authentication services based on the SAML2 protocol, which is effectively a standard within the sector worldwide.  Using SAML2 for authentication, users can access the IaaS cloud service User Interface without having to sign in with a cloud service provider specific username and password. Instead, they log-in with their trusted institutional account. An Identity Provider (IdP) is used to verify the user identity based on a trust relationship and exchange of user attributes between the institution and the cloud service provider (SP). The service provider benefits from connecting via SAML2, because it will be guaranteed that the user’s data is up-to-date and does not have the support overhead associated with maintaining usernames and passwords. SAML2 support enables the implementation of Single Sign-on but does require some initial configuration work (as described below) for each institution.  GEANT will provide support to cloud providers to achieve SAML2 support in the form of knowledge base articles, webinars and advice from GEANT's technical specialists.  Q. Please provide details of current capabilities or commitment to provide SAML support for user SSO within 6 months for the proposed IaaS service(s) once a framework agreement is awarded. Suppliers must commit in their SAML implementation to establish a bilateral SAML trust using SAML metadata documents, the supplier must not require SAML attributes beyond those defined in the eduGAIN attribute schema, and must  support the edUGAIN SAML 2 WebSSO Profile as a minimum (based on previous experience with cloud providers, this will substantially ease implementation of SSO and is proven with institutions but does not require cloud providers to join a participant federation or eduGAIN). Note: GEANT and the member NRENs will work with cloud providers to define and finalise SAML support in advance of contract signing. IAAS Service providers must commit to the agreed SAML support within 6 months of framework signing  The eduGAIN SAML 2 WebSSO Profile and eduGAIN attribute schema is available from  <http://services.geant.net/edugain/Resources/Pages/Home.aspx>  *Response Guidance*   * Evidence of current operational solutions * Project plan for implementing a SAML2 solution | |
| Click here to enter text. |

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| AC7 – On EDUGAIN (Awarding Criteria) |
| R. The current GEANT procurement initiative is aimed at accelerating the adoption of IAAS cloud services across the large number of institutions within the GEANT/NREN client base. Based on the experience with vendors and their services, the implementation of federated access to services via GEANT's eduGAIN service has provided users with easy Single sign-on (SSO) access to a wide variety of services while easing the burden of authentication for the Institution and vendors.  The eduGAIN service is founded on SAML2 as 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. Participation in the EduGAIN federation provides access to an authentication service for all participating vendors and institutions without the need for individual configuration. eduGAIN allows the exchange of metadata and the exchange of an agreed set of attributes and is therefore a highly scalable mechanism for implementing SSO. More details of eduGAIN are available at <http://services.geant.net/edugain/Pages/Home.aspx>  Q. Please describe your current capability to support access to the proposed IAAS service(s) via the eduGAIN federation.  If support for eduGAIN is not currently available, please confirm your willingness to support access to the proposed IAAS service(s) via the eduGAIN federation within 6 months of the completion of a framework agreement.  *Response Guidance*   * Evidence of current operational solutions with eduGAIN * Project plan for implementing an eduGAIN federation within 6 months of contract signature |
| Click here to enter text. |

## Data protection and security

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| --- |
| MR4 – Compliance with EU Data Security Directives (Minimum Requirement) |
| Storing data in a safe and regulated environment is of paramount importance to the community.  Q: Providers must ensure any and all data is transferred and processed in compliance with EU data protection law where Providers comply with EU Model Standard Contractual Clauses.  Provider must declare full compliance with EU Model Standard Contractual Clauses (Refer to Vol 3 Clause12).  The Provider will have its services regularly audited by independent third parties and will let GEANT have access to the reports of those third parties  Please note that additional national requirements from NRENs and their institutions may be applied in retrospect.  *Response Guidance*   * Response to Q to confirm compliance, Vol 3 review and acceptance of Clause 12 |
| Click here to enter text. |

| 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 encryption)* * *Describe the provided features for data encryption on the primary data storage and the storage on the backup facility, including key management feature where the encryption key is exclusively available to the customer and is not stored by the IaaS service provider.* * *Describe in detail how the assets (i.e. systems) storing and processing customer data, as well as the log files, are protected and monitored against physical tampering, loss, damage, seizure and against misuse, manipulation and retrieval by unauthorized persons.* * *Describe how you ensure that data of different customers are reliably separated to prevent malicious or compromised customers from affecting the whole or parts of the IaaS service or data of another.* * *Describe processes and procedures in the field of IaaS in place to ensure operational security (Change Management, Configuration Management, Vulnerability Management, Protective monitoring, (Security) Incident Management)* * *Describe how you ensure human resource security prior, during and on termination or change of employment i.e. screening of new staff, security awareness programs.* * *If you developed your own applications to provide or support your offered IaaS services do you design and develop them following internationally accepted security development standards and procedures as well as conducting regular audits?* * *Describe how you ensure protection of external interfaces, e.g. management portal, APIs a customer can use to access the service and its data.* * *Describe the methods used by the service administrators to manage the operational service and mitigate any risk of exploitation* * *Describe in detail processes and procedures having in place, which a customer can (optionally) use to ensure business continuity or disaster recovery.* |
| Click here to enter text. |

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| AC9– Sensitivity Levels for Data (Awarding Criteria) |
| R. Specific rules apply in the handling of certain data types, e.g. in the area of public health or military research. Some customers may demand a secure, reliable and legally compliant treatment of such data.  Q. Tenderers are to describe how they define data types and what service options exist for tailoring services to ensure that data types are handled to meet compliance obligations.  NB It is the customers responsibility to determine which data type it’s data is.  *Response Guidance*   * *Please list any changes and/or additions to your response in AC6 above (General Data Security)* |
| Click here to enter text. |

## Commercial terms

| MR5 – Post-paid billing (Minimum Requirement) |
| --- |
| R. NRENs and institutions often don’t have credit cards and need internal approval prior to ordering of services. Vendors must accept ordering of services with a purchase order and receive post-paid billing in either Euro or the local currency.  Q. Please confirm purchase orders and post-paid billing will be offered and your ability to invoice in at least Euro or local currency for the countries you have identified that the service will be available in in response to MR1  *Response Guidance*   * Response to Q to confirm Vol 3 review and acceptance of Schedule 4, Clause 8 |
| Click here to enter text. |

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| --- |
| MR6 – Recognising Aggregated Spending (Minimum Requirement) |
| The collective expenditure of the R&E community through these frameworks is expected to enable the market to deliver IaaS efficiently to the community in volume. In return the R&E community expect to secure discounting and prices that reflects their education status in the market and also the volume procured.  R. Tenderers shall ensure that whether they are acting directly (where they are the rights holders of the underlying licences/service), or where they are reselling services to work with the rights holders, they ensure that expenditure through these frameworks is recorded and discount levels adjusted accordingly.  Q. Tenderers shall explain how their reporting will record all expenditure flowing through the framework and how it will ensure it reflects the aggregated expenditure of the community for a given IaaS.  *Response Guidance*   * Explanation of how the sales data is recorded and associated to the framework * Mechanism in place to adjust discount levels directly or via the rights holder in a Reseller model. * Evidence from OIP/Rights holder of the structure of a R&E discount scheme (discount off educational list price, further discounts at volume tiers over time) being applied at the framework level and is available to all eligible entities who are able to procure through the framework * Tenderers to confirm the proposal complies with Vol3 Clause 6.5 * If legal restrictions prevent the collecting and reporting of aggregated spend on a national or European scale, Tenderers are to:   1. Give detailed information on the legal restrictions  2. Propose a mechanism (available or to be developed within a reasonable time) to accommodate the requirement. |
| Click here to enter text. |

| MR7 – Cost recovery fee (Minimum Requirement) |
| --- |
| R. In order to ensure the ongoing sustainability of such frameworks and their active management for the R&E community, Tenderers are required to pay 0.5% of all monies received from contracts awarded through this framework back to GEANT Ltd. The cost recovery fee will primarily be used for aiding adoption of the IaaS services among education and research in Europe, contract management and cloud related (re-)procurement projects.  Tenderers are asked to note that NRENs may require a comparable arrangement where they (in addition to the GEANT cost recovery fee) apply a cost recovery fee, to help fund their activities in growing IaaS adoption. The Tenderers are to consider how such arrangements could be accommodated. Any such arrangements will be subject to separate agreement between NRENs and Tenderers after the award of a framework. Volume 3 clause 9.  Q. Tenderers are to confirm they will pay the 0.5% cost recovery fee to GEANT Ltd. and describe how this will be managed and reported. Further, Tenderers shall describe options for cost recovery arrangements for NRENs at the call down contract level.  *Response Guidance* - Confirm your acceptance of these fees  - Frequency of cost recovery payment  - Mechanisms for associating revenues received to contracts resulting from this framework  - Reporting to be provided  - Audit/validation |
| Click here to enter text. |

| AC10 – Cost transparency: Idle server setups (Awarding Criteria) |
| --- |
| R. Institutions are likely to use sets of virtual servers for research purposes. These can be fixed projects (setup, run once, delete), repeated projects on a regular basis (e.g. 4 days a month) or reusable setups for projects (i.e. load balancers, webserver, application servers, database server). For repeated or reusable projects, Institutions would like to understand the mechanisms available to minimize costs during the idle times.  Q. Please provide information on mechanisms available to enable Institutions to reduce costs for underutilised (or paused) cloud resources.  *Response Guidance*   * text |
| Click here to enter text. |

| AC11 – Accommodating capital expenditure (Awarding Criteria) |
| --- |
| R. Research by Institutions and Institution IT is often (partly) funded by grants. These grants often use old mechanisms in which hardware and software costs are allocated for capital purchases. National and/or institution policies may or may not allow cloud services usage as capital purchases if an upfront commitment can be made allowing usage over several years.  Q. Please provide information on your ability to offer the IaaS Service with an upfront commitment from an institution allowing usage over a prolonged period in accordance with International Accounting Standards.  *Response Guidance*   * please describe availability by country for the countries identified in response to MR1 |
| Click here to enter text. |

| AC12 – IaaS Cloud Service Licencing Requirements (Awarding Criteria) |
| --- |
| R. Potential end-user customers will have existing license agreements with a variety of application providers. In most cases, due to the Education and Research nature of the institutions, they benefit from license agreements which have commercial conditions which are much more attractive than those available outside the sector. This includes all-you-can-eat agreements. GEANT wishes to ensure that customers  a) continue to benefit from the attractive license and commercial conditions which are already established - otherwise this will be a barrier to adaption and  b) do not pay twice for application licenses i.e. via their own pre-existing agreements as well as licenses embedded in the cost of the proposed IAAS service(s).    Q. Please detail your support for Bring You Own License (BYOL) or any alternative mechanisms proposed where you are the licensor for licenses that a customer of this framework may wish to migrate in the IaaS solution. Please confirm the status for any relevant application providers including the following as a minimum:  - Microsoft Windows Server (all editions)  - Microsoft SQL Server  - Other Microsoft software  - Oracle database and associated Oracle stack  - Adobe Creative Suite  - Red Hat OS.  *Response Guidance:*  *Describe your abilities to accommodate BYOL for each of the software packages.* |
| Click here to enter text. |

| AC13 – Pricing (Awarding Criteria) |
| --- |
| R. GEANT expects that Suppliers can offer a flexible range of pricing mechanisms to continue to provide services at highly competitive rates throughout the lifetime of the framework. GEANT would also anticipate discount levels to be offered that are typical within the educational market and reflect the potential volume of business GEANT is representing. The GEANT objective is to ensure that the outcomes of this Call for Competition present the most attractive options for Customers to consume cloud and that this is a win/win situation for suppliers by lowering the barriers to connecting to the business potential of the Education and Research sector.  Whilst at a Framework Agreement Level no volume commitment can be given, Tenderers should note that it is anticipated that a significant proportion of awards will be made directly without further competition. This means that the baseline price should be competitive also.  For recurring costs across all services purchased under this framework, the following characteristics apply:   * A commercial model whereby Tenderers recognize expenditure across the entire R&E community eligible to use the Framework Agreement. * Volume discount as this aggregate expenditure grows over time:   + The discount level – a % of trigger level accumulated value, or a € amount   + The discount trigger (n) – the needed accumulation level to achieve a discount, and is applied to the discount period (n)   + The discount period (n) – is the period between triggers * Triggers: Defined as an agreed accumulated *volume –* achieved over time as shown in the diagram below      * The Provider shall be responsible for monitoring the cumulative spend and informing GEANT when the next tier is reached. * Payment of the cost recovery mechanism as described in MR7   Q. Tenderers are to provide a pricing proposal that addresses:  Offer a link to public standard price list (PSPL) - please do also provide API access and web calculators,  Offer initial universal discounts in percentages on this PSPL for any orders.  Describe tiered pricing which is being offered (additional discounts).  A mechanism for the tenure of a tier of discount before it is reviewed, e.g. after two consecutive months over a threshold, the additional discounts are effected and following Four consecutive months under the threshold will lead to a return to the previous tier  The provider (brand) is responsible for generating an aggregated reporting (turnover per reseller per country and over Europe) and will communicate these every month no later than 2 weeks after month end.  Additional discounts may be offered at any time.  If price reduction occurs to a service within 7 calendar days of taking a subscription, then a rebate or a service credit will take place.  Please expand on any special pricing incentives likely to be made available during the framework contract period  *Response Guidance*  GEANT will be using the baseline universal discount figure offered to compare Bids to rank Tenderers.  Responses shall therefore include:   * Universal Discount percentage applicable across all IaaS SKU’s available from day one without any volume commitment. * IaaS related services which are not to be considered as part of the core IaaS services may be discounted at different discount percentage * Information on how the discount will vary over time (as spend increases, market price changes impacting the price list) * How discounts by rights holders/OIP’s are managed through to resellers |
| Click here to enter text. |

| AC14 – Migration of existing contracts (Awarding Criteria) |
| --- |
| Institutions may already have running contracts with Tenderers who also may be awarded framework agreements under this tender. These Institutions are likely to be interested in migrating their existing contracts in order to be able to make use of the (expected) improved conditions and avoid future discussions on conditions resulting from two contracts.  Q. Please provide information on the following:   1. Will you accept or facilitate customers who are entitled to procure the services via their country’s NREN to migrate their existing contracts into this GEANT framework agreement? Thereby pricing and conditions of the existing contracts are effectively replaced by the pricing and conditions from the GEANT framework agreement. 2. If so, please describe the procedure and expected duration to have this completed.   *Response Guidance*   * Provide answer (Yes/No) and elaborate if the answer is Yes. |
| Click here to enter text. |

| AC15 – Contract terms (Awarding Criteria) |
| --- |
| Contract Terms Vol 3 sets out a proposed Framework Agreement that will govern the relationship between GEANT and any Tenderer awarded a contract from this procurement, and sets out the terms and conditions for any call down agreement made under the framework. In this Section 3, there are a number of MRs that obligate Tenderers are to confirm their acceptance of certain terms (mandatory) in the framework and are asked to provide that response within the relevant MR. Further to this Tenderers are to review the proposed Framework Agreement in Vol 3 to consider if the proposed agreement is acceptable in respect of the non-mandatory clauses.  Q. Tenderers are to complete the table 3.1 set out in Volume 3 to provide an indication of the acceptability of the proposed Framework Agreement.  *Response Guidance*   * Tenderers are reminded of the evaluation methodology set out in Section 2.2.3 and the requirement to accept Mandatory Clauses. |
| Click here to enter text. |

## Important for institutions.

As described in Volume 3 clause 4, Customers eligible to use the Framework Agreements resulting from this procurement can do so from a direct award or a further competition.

In order to make a direct award, Customers must be able to sufficiently define the solution from the information contained in the Framework Agreement.

The IaaS solutions (Services) that Tenderers propose in their Tender can be publicized on a web page where Customers can review the descriptions of the IaaS solutions. These web pages will be initially populated from information provided in response to this section and will be updated over the life of the Framework Agreement by the Supplier.

Customers will then use the web pages and the information contained therein when making direct awards to select the preferred offering.

Annex C sets out further information for Tenderers on parameters that are important to certain NRENs where known at the date of publishing this tender.

| IO1 – Description of IaaS Offered (Information Only) |
| --- |
| R. Please provide details including a product definition for each of the IaaS services and additional complimentary services which your organisation is proposing for inclusion in the current GEANT procurement initiative  Q. Provide a service catalogue  *Response Guidance*  Tenderers may offer and describe cloud services which are complimentary to and in addition to the core IAAS cloud services but must offer IAAS services as a minimum requirement. These complementary services may include support for hybrid services delivered via appliance based or on premises based software solutions   * + Self- Service management and (de)provisioning and management API.   + Option to launch VMs of various sizes and specification in terms of CPU/GPU, ram, disk, network connectivity etc.   + ability to provide a library of images / capability to upload user defined images,   + supported operating systems, including: (a) Windows Server 2008 and higher, (b) Windows 7 and higher, (c) Red Hat Enterprise Linux 6.x and higher, (d) CentOS 6.x and higher, (e) Ubuntu Server 12.x and higher.   + network functionality options (VPN, load balancers, firewalls etc.),   + automation/orchestration capabilities & segregation to prevent actions on one VM impacting another VM   + support for (auto-)scaling (scale-up, scale-down, scale-out, horizontal and vertical) capabilities, including up and down (hot) scaling of CPU, NIC, memory and storage resources per VM.   + support for encryption   + service catalogue   + provide features for disks: supported disk sizes and VM sizes, configure and interface multiple disks per VM, disk expansion without interruption to the services of the VM, linking the same disk to multiple virtual machines   + ability to mount external media (e.g. an ISO) on a specific VM   + console (Keyboard, Video, Mouse) access from the hypervisor (independently of the network connection on the virtual machine).   + capability to change the status of a Virtual Machine from outside the virtual machine itself (shutdown, suspend, power on, power off, restart guest OS).   + capability to create a snapshot (from the hypervisor) of a single system |
| Click here to enter text. |

| IO2 – Admin Management Portal (Information Only) |
| --- |
| R: GEANT envisages that Users e.g. universities will potentially have hundreds of end users with many separate cloud accounts e.g. for projects/departments with different budget holders.  Q: Please provide details of any administration and management tools provided to enable management of multiple cloud accounts with many users, departments, and budgets.  *Response Guidance*   * Describe the mechanisms available to provision and manage multiple cloud accounts including assigning owners (budget holders) to individual cloud accounts as well as end users and the ability to provide consolidated billing across multiple cloud accounts. * Elaborate on ability to sharing one cloud account across users (e.g. one cloud account for a Computer Science class of 100 students) * Describe the process for provisioning of users and if this can be done automatically via federated access or other means e.g. bulk import via csv. * Describe any abilities to define and allocate roles with different levels of privilege e.g. student, researcher, IT admin i.e. role based access control (rbac). * Describe the process of de-provisioning users and cloud accounts and what happens to user data, service instances (I.e. VMs, IP addresses allocated etc.) * Describe the granularity of available reporting functionality (e.g. is it possible to report on costs and usage at account, user, cloud service level?) |
| Click here to enter text. |

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| IO3 – Customer Self Service Portal (Information Only) |
| R: A Customer Self Service Portal on which customers can manage all aspects of the IaaS service is necessary.  Q: Please confirm the functionalities listed below is present in the portal offered as part of the IaaS Service(s) provisioning.  *Response Guidance*  A Customer Self Service Portal should be accessible at all times with expected functionality:   * + Ordering / billing   + Contract person changing   + Incidents reporting   + SLA evaluation and reporting   + Metering, threshold alerting and reporting   + API functionality, or ability to embed into other client’s portals   Please confirm the ability to provide different levels of views and reporting based on roles and privileges with granularity: "GEANT - NRENs - institution - faculty – user" as recommended in Figure 1 Volume 0 and corresponding with different Service Delivery Models. |
| Click here to enter text. |

| IO4 – IaaS Services Delivered from inside the EC/EEA (Awarding Criteria) |
| --- |
| R. In some cases institutions will only consider public IaaS services if the data is guaranteed to be stored, back-upped and processed in the EU/EEA.  Providers must ensure any and all data is stored, processed, transferred within EU/EEA.  Please note that additional national requirements from NRENs and their institutions may be applied in retrospect.  Q. Please confirm you can comply with these requirements. (YES/NO)  *Response Guidance*   * Confirm the locations of datacentres where data will be held in the delivery of the IaaS services. * State how any back-up of the data will also be completely within the EU/EEA. |
| Click here to enter text. |

| IO5 – API Support |
| --- |
| R: Customers will wish to access IaaS services programmatically i.e. via Application Program Interfaces (API) rather than using only Admin / Customer Management Portal (IO2, IO3)  Q: Please provide details of the API functionality provided by the proposed IaaS Service(s) including support for any commonly used APIs listed below, or other APIs.  *Response Guidance*   * Compute:   + Amazon Elastic Compute Cloud (EC2)   + Microsoft Azure API   + DBCE   + Google GCE   + HNX SlipStream   + OpenStack Nova   + OCCI   + Other (please provide details) * Storage:   + Amazon S3   + Amazon EBS   + Microsoft Azure API   + Ceph RADOSGW   + CDMI   + Google Cloud Storage (GCS)   + OpenStack Swift   + OpenStack Cinder   + Other (please provide details) |
| Click here to enter text. |

| IO6 – Service Level Agreements |
| --- |
| R: GEANT is seeking Suppliers who can provide IaaS services with guarantees and expects a transparency on SLAs provided at a minimum (standard) level within IaaS Service(s) provisioning.  *Please note, that a specific level of guarantees may be required by NRENs and/or end-user organizations and to be provided by IaaS service provider for additional cost.*  Q: Clarify a standard (minimal) SLA level, based on metrics listed below. Please confirm compliance, threshold, sanctions or explain any differences from the list.  *Response Guidance*   * Describe the service levels and related mechanisms offered for the proposed IaaS service and incorporated into a Service Level Agreement (SLA) including but not limited to:   + Compute: uptime, availability, reboot time, outage length   + Network: uptime, availability, throughput, packet loss, latency, jitter   + Storage: uptime, IOPs, max restore time, storage protection mechanisms   + Data: durability   + User portal & API access: uptime   + Notification of service changes or planned outages   + Service integrity (maximum limit of outages, maximum limit of maintenance outages, MTTR)   + Service Credits   + SLA reporting mechanism and calculation methodology   + Support services e.g. response time * Describe any Service Level Guarantees provided for end user service and their data and any conditions requirements or conditions associated with such guarantees. * Describe any services or mechanism available to users to provide business continuity/disaster recovery capability.   *Please note that SLAs line of liability may differ based on Service Delivery models. Please elaborate on ability to provide SLAs guarantees based on roles "NREN or end-institution" as recommended in Figure 1 Volume 0* |
| Click here to enter text. |

| IO7 – Reporting |
| --- |
| R: GEANT is seeking Suppliers who can provide IaaS services with transparent reporting available on different levels of views based on roles and service delivery models (Referrer, Reseller, Underwriter) and on different granularity (GEANT - NREN – institution – faculty / department - user).  Q: Please describe reporting capabilities and take into account that different levels (views) of reporting based on Service Delivery Models, roles of GEANT, NRENs and institutions may apply as recommended in Figure 1 Volume 0*.*  *Response Guidance*   * Describe the reporting capabilities following key characteristics:   + Technical (real-time and logged) performance reports (including trending):   + throughput (networking, storage),   + CPU / Memory / Disk utilization,   + IOP   + Latency (networking, storage)   + backup and restore results.   + Financial   + Spending over last period   + Overview / comparison spend over previous periods (Euro and percentage)   + Breakdown into different service costs   + Breakdown in costs per project / server group   + Breakdown in costs per department   + Reporting Methods and Acceptance / Dispute mechanisms   + Resource usage reports   + Accounting / Financial reports and invoicing   + Failure reports   + License usage   + SLA / security violation   + Reporting metrics and periods   + Finest level of granularity can be provided for usage of each type of separately billable resource, and how frequently are you these reports available.   + A*bility for customers to define the frequency of report*   + *Reporting portal / API*   + *possibility for additional reporting on request or interface for individual queries*   + *ability to provide reports to A.GEANT, B.NRENs, C. organizations, D. end-users*   *All reporting must be readily available within 5 working days of the quarter end, month end or on request. Reports shall be made available in electronic formats as agreed with the Contracting Authority from time to time.* |
| Click here to enter text. |

| IO8– Billing Capabilities |
| --- |
| R. GEANT is seeking Suppliers who can provide billing in EURO or local currency.  Q. Please provide information on the following:   1. If your standard prices are calculated in other currencies, which exchange rate mechanisms do you propose using and what mechanism do you propose to avoid daily changes in costs (e.g. monthly exchange rates)? 2. Billing in arrears based on actual usage being invoiced is should be available optionally. Please clarify the range of billing options being offered and explain the mechanism to deliver the billing capability. 3. Do you have the ability to send itemized bills to a central point in an Institution which could allocate charges to user groups?   *Response Guidance*  Provide answer (Yes/No) and elaboration per item |
| Click here to enter text. |

| IO9– Back-up Services |
| --- |
| R. Institutions availing of public IaaS services for the delivery of production services will in many cases need to maintain backup policies which are often agreed upon with internal customers. Although many of the following requirements may be seen as traditional IT requirements, the need for concise and reliable backup and restore functionalities remain. GEANT is seeking Suppliers who can provide back-up and restore options addressing different levels of Recovery Point Objectives (RPO) and Recovery Time Objectives (RTO) meeting user needs.  Q. Tenderer should describe their (basic) back-up and restore options to allow users to protect their applications and services. Please provide any details on back-up and restore services you offer to provide higher levels of RPO and RTO (premium services)  *Response Guidance*   * please describe the backup services offered standard and optionally |
| Click here to enter text. |

| IO10 – Registration/Enrolment |
| --- |
| R: GEANT is seeking Suppliers who can provide a portal for service offering and electronic placing of orders or facilitates that orders can be electronically placed via the NREN or institution. Before an order can be placed under this framework agreement, GEANT expects a registration process to take place in which the Institution will need to enter names, addresses etc.  Q: Please explain your registration procedure including the expected time it will take from actually (electronically) registration to being able to start using the IAAS services.  *Response Guidance*   * Clarify the steps of your registration procedure and how much time there is between the initial registration to actual use the service. Do we speak of days or hours? * Is there a difference between new customers (Institutions, new groups of users, or new users and existing ones? |
| Click here to enter text. |

| IO11 – Order placement |
| --- |
| R: GEANT is seeking Suppliers who can provide a portal for service offering and electronic placing of orders or facilitates that orders can be electronically placed via the NREN or institution.  Q: Please explain your procedure of placing orders after the registration phase has been completed, and what is the expected time it will take for using the IAAS services?  *Response Guidance*   * *Clarify the steps and how much time the enrolment phase takes to actually use the service. Do we speak of hours or minutes?* * *Is there a difference between new customers (Institutions, new groups of users, or new users and existing ones?* * *What (other) tools and systems exist for placing the orders*. |
| Click here to enter text. |

| IO12 – Group and cloud services management |
| --- |
| R. GEANT is seeking Suppliers who support End User institutions in group and cloud service management. Institutions are expected to have significant numbers of users in multiple user groups e.g students, lecturers, researchers, IT etc. with numerous users and cloud accounts per cloud Service Provider. Institutions will need to manage user access and privileges, track account usage and costs, as well as carrying out billing and reporting.  Q. Please answer the following questions:  1: End user institutions need to manage user access to cloud services.   1. Please describe what support for a hierarchy of user levels and what functionality you provide to manage user access and ensure that the level of access to cloud accounts and resources is appropriate to the type of user. Can End user institutions manage user access in your IAAS cloud services? 2. Describe in detail any role based access control capabilities (RBAC) or approval mechanisms to allow a tiered range of roles e.g. NREN admin, University IT admin, Researcher, Lecturer, Student, Guest. 3. Describe the mechanisms e.g. logging, reporting available to allow IT staff to carry out reporting/auditing of their users for compliance and governance. Describe how long log information will be retained, the provided features for checking who performed which actions, when and from where in the IaaS services, and to which extend (the retention period for) these mechanisms comply with regulations (from Data Protection Authorities). 4. Describe the mechanism for on boarding users and the ability to bulk create users.   2: End user institutions need to manage multiple cloud accounts.   1. Please describe any functionality to enable end user institutions to manage multiple cloud accounts and to allocate costs e.g. to specific budgets such as the IT department by reporting and/or ability to interwork with external billing applications. 2. Can End user institutions manage multiple cloud accounts in your IAAS cloud service? 3. Can End User Institutions manage your IAAS cloud service via a (third party) cloud management portal? If so, please explain.   *Response Guidance*   * Provide answer (Yes/No) and elaboration per item. |
| Click here to enter text. |

1. CFC Template for Appendices

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| Appendix Number |  |
| **Question Number** |  |
|  | |

1. GÉANT Network Nodes

Network peering options at Internet Exchanges:

* AMS-IX (Amsterdam)
* DE-CIX (Frankfurt)
* VIX (Vienna)
* LINX (London, Juniper LAN)
* MIX (Milan)
* INEX (Dublin)  
  The demarcation point is the GÉANT patch panel.

The GÉANT public presence is also documented at http://www.peeringdb.com/view.php?asn=20965

Additional locations are listed below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Street Address | City | Country | Local NREN | Limit? |
| 48a Studentų gatvė  LT51367 | Kaunas | Lithuania | LITNET | 1G |
| ARNES   Jamova 39 | Ljubljana | Slovenia | ARNES | No |
| Av. do Brasil 101 | Lisbon | Portugal | FCT/FCCN | 1G |
| Central Data Centre   Ethniko Idryma Ereynon (NHRF)   48 Vasileos Konstantinou Avenue | Athens | Greece | GRNET | 1G |
| CERN   IT-CS Building 513   385 route de Meyrin | Geneva | Switzerland | SWITCH | No |
| CESNET   Zikova 1905/4   PRAHA 6 | Prague | Czech Republic | CESNET | No |
| Data Networking Laboratory SigmaNET Raiņa bulvāris 29 | Riga | Latvia | SigmaNET | 1G |
| GEANT c/o HEAnet - Parkwest   HEAnet c/o InterXion Ireland Ltd,   Unit 35,Lavery Avenue,   Parkwest | Dublin | Ireland | HEAnet | 1G |
| GEANT c/o HEAnet   C/o Esat BT Application Hosting   Unit 4029, National Digital Park   City West | Dublin | Ireland | HEAnet | 1G |
| Institute of Information and Communication Technologies   Bulgarian Academy of Sciences    Acad. G. Bonchev St 25-A | Sofia | Bulgaria | BREN | 1G |
| InterXion   45 Ave Victor Hugo   Batiment 260   Aubervilliers | Paris | France | RENATER | No |
| Interxion   Louis-Häfliger-Gasse 10,   Building 50 | Vienna | Austria | ACOnet | No |
| InterXion   Weismüllerstrasse 21-23   BUILDING FRA3   1st Floor Rm 2-1C | Frankfurt | Germany | DFN | No |
| Jaguar   SFR-Interxion NetCenter   40 Avenue Roger Salengro | Marseille | France | RENATER | No |
| Level 3  Avenue Leon Grosjean 2 Evere | Brussels | Belgium | BELnet | No |
| MIX s.r.l.   Via Caldera 21 D/3 | Milan | Italy | GARR | No |
| NIIF   NIIF Institute   18-22 Victor Hugo Street   Grn Floor NIFF Computer Rm | Budapest | Hungary | NIIFI | No |
| RoEduNet National NOC   National Authority for Scientific Research   Mendeleev 21-25   Sector 1 | Bucharest | Romania | RoEduNet | 1G |
| SITEL   PoP1Sitel   Kopcianska ul. 20c | Bratislava | Slovakia | SANET | No |
| Sõle 14, | Tallinn | Estonia | Eenet | 1G |
| SRCE   Josipa Marohnica 5 | Zagreb | Crotia | CARNet | No |
| Telecity   8-9 Harbour Exchange | London | UK | Jisc | No |
| TELVENT   Edificio Telvent   Valgrande, 6   Poligono Industrial de Alcobendas | Alcobendas - Madrid | Spain | RedIRIS | No |
| VANCIS B.V.   Science Park 121 | Amsterdam | Netherlands | SURFnet | No |
| Wendenstrasse 377, Hall 3, | Hamburg | Germany | DFN | No |
| Wieniawskiego 17/19 | Poznan | Poland | PSNC | 1G |
| Virtus Data Centre - London 4 14 Liverpool Road Slough SL1 4QZ | London | UK | Jisc | No |

1. NREN Specific Requirements

The Netherlands (SURF).

**Introduction**

SURF,  
<https://www.surf.nl/en/about-surf/organisation-and-management/surf-cooperative/index.html>,   
is one of the oldest and most innovative NRENs in Europe. Recently restructured as an U.A. Cooperative, it uses three operating companies to deliver its services. The two operating companies involved in this GEANT procurement project are:

* SURFmarket as the license marketplace
* SURFnet as the NREN who will use the IaaS services in its KUBUS proposition.

**Current IaaS uptake in Netherlands**

Although exact IaaS uptake figures are unavailable, SURF has generated 34K Euro turnover of IaaS services in 2014 growing to 436K Euro in 2015. SURF will be making the GEANT IaaS resources available to all of its connected institutions and expects significant increase in turnover from past years.

**About KUBUS**

In 2015 six Universities of applied science asked SURF to provide a managed hybrid community cloud platform. Shared reasons are: needs for higher availability, 24/7 support and datacentre resilience. This project and service is named KUBUS and will be launched in July 2016 and will be expanded to be available for its connected institutions. KUBUS aims to deliver a managed hybrid IaaS environment, comprising of SURFnet’s own VMware hosting capacity, complemented with a set of public IaaS vendors who meet the set criteria, all managed by a single Cloud Management Portal providing a single administrative entry and administration over all IaaS instances and enabling unified reporting and billing. More information on KUBUS can be found at:

<https://www.surf.nl/en/innovationprojects/cloud/surf-cloud-project-kubus.html>

SURF expects that many Institutions will adapt a hybrid cloud approach and avail of private, public and community IAAS cloud services: i.e. not a “one cloud fits all” policy but with the IT department acting as a broker and “the user chooses” the appropriate IAAS services. The expected results are that large Institutions will use multiple public and private cloud options as well their more established physical and virtualized resources. Current commitments (signed Intention to commit letters from Dutch Institutions) indicate that KUBUS will see a healthy growth rate and an increasing number of institutions are expressing interest. Current forecasts for the KUBUS indicate the following conservative / progressive number of managed VMs:

2016: 600 VMs - 900 VMs

2017: 1200 VMs - 1700 VMs

2018 1200 VMs - 2000 VMs

2019 1800 VMs - 2500 VMs

NB. These VMs are expected to be hosted in through the SURFnet KUBUS service. Institutions will also be able to consume the public IaaS services resulting from this tender directly (the 435K spend in 2015)

**NL requirements**

The six founding universities have, together with SURF, created a set of requirements. These requirements are embedded in this Call for Competition, but some of the Awarding Criteria in this Call for Competition have to be answered positively in order to be acceptable for use in the Netherlands. SURF uses the “comply or explain” principle; Tenderers who cannot meet specific requirements can explain why their answer can and should be seen as meeting the requirements. In order to be acceptable for use in the Netherlands, the following ACs must be met: 2, 4, 5, 6, 8, 9, 12 and 13. SURF will also enter negotiations with Tenderers who have responded for the Netherlands, about additional privacy and security aspects of data processing as described in the “SURF processor Agreement” for which SURF also requires a comply or explain approval. The SURF processor Agreement can be found here:<https://www.surf.nl/binaries/content/assets/surf/nl/kennisbank/2016/model-bewerkersovereenkomst-surf-2016-engels.pdf>