Supplier Management

Virtual Infrastructure Setup @ Skyguide (VIS@S)

VIS@S - Request for Proposal

Version/lang	1.0 / E
status	Released
Date of issue	19/08/2015
date of print	19/08/2015 15:07:00
author/unit	X Ruvilly - T Szemro / TDB / TDM
owner/unit	Jacques Barras
file	RFP - VIS@S - Main-19082015
pages	41
classification	Restricted
Document ID	21417060

abstract

Document expressing interest to potential suppliers to submit business proposals. The RFP presents preliminary requirements for the commodity or service, and may dictate to varying degrees the exact structure and format of the supplier's response.

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History, Review and Approval

History				
Version	Status	Date of issue	Author	Remarks
1.0	Released	18.08.2015	X Ruvilly	

Review

Name	Role	Review	Date
Roland Roth	Head of Purchasing	OK	12.08.2015
Patricia Bomme	Head of Safety and Compliance Management	OK	19.08.2015
Craig Fletcher	Head of Information Security	OK	12.08.2015
Anne Resin	Legal Expert	OK	11.08.2015
Marco Sieber	Head of Data Services	OK	18.08.2015

Approval

Name	Role	Signatures	Date
Jacques Barras	Change Owner		18.08.2015

Glossary

Mnemonic	**Signification**
AIS	Aeronautical Information Services
AIM	Aeronautical Information Management
ATC	Air Traffic Control
ATS	Air Traffic Services
COTS	Commercial of the shelf (application)
ESB	Enterprise Service Bus
FTE	Full Time Equivalent
QM	Quality Management
RFP	Request For Proposal
SMC	System Monitoring and Control
SOA	Service Oriented Architecture
VIS@S	Virtual Infrastructure Setup @ skyguide

1 Introduction

1.1 Scope

This RFP defines the guidelines for the offers for the VIS@S project – Track 2 : “Platform as a Service”. This requires effort in the following areas: overview about the different requirement documents, administrative guideline and the technical and commercial proposal structure.

1.2 Company profile

1.2.1 Our Mission

On behalf of the Swiss Confederation skyguide ensures the safe, smooth and economic handling of air traffic. Its mandate (Article 40 of the Federal Aviation Act and Article 2 of the Federal Ordinance on Air Navigation Services) includes civil and military air traffic control, telecommunications services, the aeronautical information service and the technical service for installation, operation and maintenance of air traffic control systems.

1.2.2 Core Competences

Skyguide is the European specialist in air traffic control in complex airspaces. It is a centre of expertise for Aeronautical Information Management (AIM), radar and communications technology and data processing for air travel. The integration of civil and military air traffic control is a pioneer service and increases the flexibility of aviation in Switzerland and Europe.

1.2.3 Majority owned by the Swiss Confederation

Skyguide is a non-profit making public limited company. Over 99% of the share capital of 140 million Swiss francs (117 million Euros) is in the hands of the Swiss Confederation. Skyguide is financed through fees which are paid by the users of its services.

1.2.4 Organization

Skyguide employs around 1400 people distributed between 3 main locations of Geneva, Kloten and Dübendorf. Skyguide is organized in the following way:

- Operations: Air Navigation Management ~ 870 people
- Technics: Management of technical Infrastructure ~ 350 people
- Corporate services, Finance and Human Resources ~ 180 people

1.3 References and Source Documents

Documentation used as reference for the elaboration of this document:

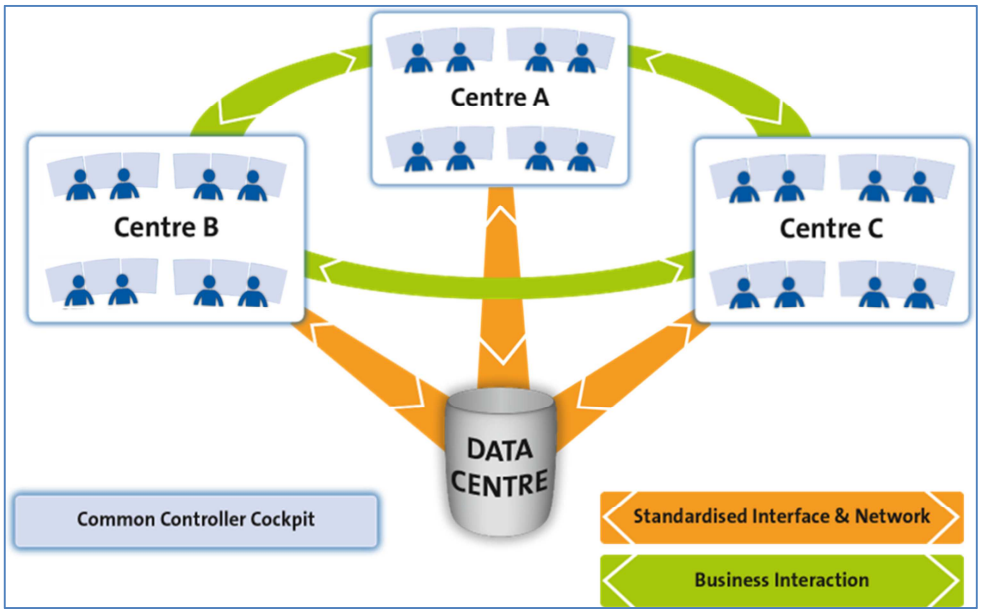
Document	Comments / document ID
1.3.1 Requirements Specification	VIS@S - Requirements Specification.docm N° 19697372
1.3.2 Architectural Design	General Architecture.docm N° 18064046
1.3.3 Quality Plan	Quality Plan VISAS.doc N° 19633570
1.3.4 Nonfunctional Requirements for ATM Systems and Voice	RE CH 2014-023 VC2 NFR for ATM Systems and Voice v010 2014 07 16E
1.3.5 TD Run Manual	Technical service delivery C3MA8201E

2 Context

Within the context of skyguide's vision & mission, a major change initiative has been launched: “the Virtual Centre Programme”. The objective is to transforms skyguide into a service-based organization to take its due position in the European network in order to deliver the best possible and seamless service to our customers and to create the best possible future for skyguide

The key drivers for the Virtual Centre Progamme are :

- Creating a single unit (albeit in multiple locations) with fully harmonized methods and operations, information, procedures, technical means and equipment
- Standardizing and focusing on the most appropriate systems and technology
- Implement service continuity
- Improve efficiency
- Reduce complexity



The Virtual Centre Programme will impact all layers of the company: from Operation to the supporting information systems.

In 2014, an information system architecture analysis has defined the target vision supporting the operational changes. Fundamental concepts have then been validated:

- The target information system architecture is a hybrid architecture consisting of Service Oriented Architecture (SOA) and Non-SOA assets. The adoption of the Target Architecture does not mean that the application portfolio will consist entirely of services. The existing assets need to be leveraged and prior investments will be capitalised upon.
- The Target Architecture provides the architectural underpinning for reusing infrastructure and for decoupling applications from hardware based on Virtualisation, allowing the existing assets to be reused and the legacy equipment to be replaced when needed.
- The Target Architecture introduces the concept of the Common Integration Platform based on an Enterprise Service Bus (ESB). Service deployment and invocations can transparently span across multiple data centres: Geneva and Dübendorf.

To deploy the required virtual infrastructure platform on both data centres, the Virtual Infrastructure Setup @ Skyguide (VIS@S) project has been launched in January 2015.

2.1.1 Description of the VI@S project

The VIS@S project has for objectives to:

- Deliver a virtual platform on both data centers, Geneva and Dübendorf ready to host in operation the SOA components : the Common Integration Platform and all application services
- Deliver the required infrastructure to validate all IT components before their deployment in operation: Integration Validation and Pre-Production environments should be deployed also on both data centers.
- Put in place the required tools, processes and resources to maintain and operate those environments in an efficient way.

The VIS@S project is split into two tracks :

- Track 1 : Test platform deployment (Integration, Validation and Pre-Production)
- Track 2 : Operate Platform as a Service : Operational platform deployment, including all required tools, processes and resources to operate and support the overall environment.

2.1.1.1 Track 1: deployment of the test virtualized platforms

Objective : Deliver a test platform on both data centres, Geneva and Dübendorf ready to host the SOA components : the Common Integration Platform and all application services.

The deployment of the test platform is managed as an isolated workpackage to be able to run all required tests and proof of concepts for the SOA platform selection.

For optimization purpose, the Integration, Validation and Pre-Production environments are shared on a single physical infrastructure.

In addition to the virtualized platform the following components are implemented:

- A shared management zone to administrate the virtual environments (e.g. hardware and software backup management)
- A shared service zone to host standard IT tools and services shared between environments (e. g. software configuration management solution, artefact repository, etc…)

The maintenance and operation of the test platforms is part of Track 2.

2.1.1.2 Track 2: Operational platform as a service

Objective : Deploy the virtual infrastructure, tools, processes and resources to host the SOA components in operation. Efficiently support and maintain the operational and test platforms on both sites.

The virtual infrastructure has to deliver hosting services for the SOA components in Operation according to defined Non-Functional Requirements (NFRs).

The most important Non Functional requirements are:

- Availability : in operation, the target end to end service availability is estimated at 99.999% of the time (outside maintenance windows)
- Reliability : the platform MTBF is estimated at 10 000h

This RFP is focused on Track 2 only. However, if the infrastructure proposed for Track 2 is not compliant with the testing infrastructure deployed through Track 1, a specific offer can be proposed to re-align both platforms

2.1.2 Expected Results

Skyguide is focusing all its internal resources on high added value activities. The Virtual Centre Programme is highly challenging and resource demanding therefore it has been decided to get the new infrastructure platform delivered in a service mode.

The expected delivery is a “Platform as a Service” solution integrated into the operational environment of skyguide, fully maintained and operated by an external supplier.

More details are available in section *4 "Platform as* a Service *specifications"*

3 RFP Process

3.1 Directives concerning the Response to the RFP

3.1.1 Generalities

This chapter summarizes the form and content of the information that the Bidders shall provide in response to this RFP:

- The response document must be written in English
- Bidders must date, sign, and return the Acceptance Form enclosed within this RFP as part of their Proposal (see chapter 5)
- All the listed questions or requests must be answered. The responses are mandatory. Failing to provide the requested information could result in elimination of the Bidder without any further analysis
- The basic proposal must conform to the System specifications as set forth in this RFP. However, Bidders may submit alternative solutions, where considered appropriate and equivalent in terms of functionality. In such case, the Bidder must provide an extensive description and evidence to show the advantages and disadvantages of the proposed solution, with a clear indication of the aspects that make it preferable to other solutions
- The responses and description of the solutions shall be comprehensive, and focused on the information that is requested in the RFP and skyguide's business requirements. In particular, responses should describe the particular advantages of their solution, especially for those aspects specifically requested in the RFP. Information of general interest, such as data sheets or marketing brochures may be attached as an appendix at the end of the response document

In order to facilitate the response analysis and evaluation tasks, the response document must follow the section numbering and framework as described below:

- Bidders may, if they so wish, add sub-sections, and are free to write the content of the sections as they think best, as long as all the requested information has been provided

3.1.2 Structure of the Response

Provide a document compiling all the information below in a structured way. This can be preferably a PowerPoint presentation or any other format.

3.1.2.1 Section 1: Management Summary

This section must contain:

1.10: A summary of the proposal describing the main points of the proposed solution(s)

1.11: A summary of the global financial offer (Setup costs and recurring costs)

1.12: The name and title of the relevant duly authorized officer with signing authority

1.13: The contact persons in charge of the project (technically and commercially), including their name, phone number and E-mail addresses. Those persons must be available during the evaluation period to answer possible questions

3.1.2.2 Section 2 General information

This section deals with information about the company, its references, as well as any partnerships or alliances that may have been formed with other companies.

Section 2.1: Company Background and structure

Please provide a short presentation of the company including the following information:

2.10: A brief historical description of the company's involvement in the Platform as a Service delivery in Switzerland, and particularly in the Geneva and Zurich areas

2.11: The financial result of the 3 last years

2.12: Provide organizational charts from relevant operating units including names and titles of key individuals

2.13: Location and size (in terms of personnel) of the Bidder's main site (HQ)

2.14: Number, size and location of the branches (technical centers) where the Bidder's technical staff involved in implementing the proposed solution would be located

2.15: Give the structure of the nearest branch to Geneva and Zurich

2.16: Detail, or confirm the absence of, any litigation, pending litigation or dispute which might infringe on rights to any technology proposed in relation to this RFP, or which concerns any regulatory body or process.

Section 2.2: Partnership with Third Parties

Should a Bidder wish to outsource the delivery (or any part of) to a third party company, or if it has established an alliance or partnership with another company for services, such bidder is asked to describe the type of alliance or partnership that it has established with the other company. The description must include:

2.20: Name of the company with an alliance has been established

2.21: When was this alliance formed?

2.22: What type of services will be outsourced to the partner?

2.23: Which "partner" in the consortium would take the lead as "prime contractor". The prime contractor shall assume full responsibility for all the work and prices quoted in response to this RFP and the fulfillment of any and all obligations in that regard

2.24: Provide detailed description of the alliance, including information concerning, marketing agreements, systems integration, standardization between companies, ownership, services provided, etc.

2.25: Give the same information about this company as the ones requested above in the Section 2.1

2.26: Give the procedure followed in relation to outsourcing the implementation work or maintenance services to third parties (subcontractors). The Bidder has to keep in mind that skyguide is requesting a single point of contact with the Prime Contractor that must take full responsibility for accomplishing all of the work required under the contract

Section 2.3: Quality, Compliance, Regulatory and Safety

2.31: Does a documented Quality Management System (QMS) exits, e.g. existence of a quality policy and objectives, quality manual, policies and procedures? Does your QMS cover your third party suppliers?

2.32: Please join to his offer the copies of quality assurance certificates that you (and any possible subcontractors) have obtained (i.e. ISO 9001, ISO 27001, etc…)

2.33: Is the QMS fully applicable for the development and support of the product/service in scope?

2.34: What method of checking compliance with QMS is used (internal audits, management reviews, 3rd party audits)?

2.35: Will you allow authorities or regulatory body to perform inspection in conjunction with products/services in scope?

2.36: Were you ever audited by regulated customer or inspected by regulatory body ? If yes, please provide name of customers or regulatory body (Please provide details in the Comments-Field):

2.37: Will you provide a single point of contact regarding key topic such quality/compliance/safety, service delivery (such service delivery manager)?

2.38: What is your experience/maturity in regulated environment and is your service already delivered in such context ? More specifically, how do you validate the delivery versus the specifications?

2.39: How do you manage corrective action, preventive actions, deviations and or non-conformance ?

Section 2.4: References

Skyguide attaches importance to the transparency of the bidder references. The Bidder is asked to give the following information in its proposal:

2.40: A list of references related to experiences with Air Navigation Services Providers

2.41: At least 3 recent references concerning the deployment of on-site PaaS solutions that were carried out locally, and are similar in size and technology to the one described in the current RFP

2.42: A short description (a few sentences) must be given for each of the 3 selected references (implementation date, size of the project, installed materiel, names/roles of key technical staff involved from the Bidder's side, contact person on the customer side with phone number and position)

2.43: Any implementation work carried out by a third party company must be explicitly mentioned

Section 2.5: Training and skills management

When providing information in this section, please keep in mind skyguide foresee training needs mainly during handover / reversibility of the services.

2.50: If applicable, provide a detailed description of any training center(s) (location, size, number of classrooms, etc.) .

2.51: Provide the list of courses available (titles of the courses)

2.52: Indicate whether the Training Centre is certified?

2.53: Are profile descriptions in place and is the staff qualified to meet the requirements as per profile descriptions? Do you have specific training plans in place?

2.54: Specify if you have a skills management process and how this would applies to our scope

2.55: Describe how you address people turn over, especially training of new comers

2.56: The regulations in the ATM environment require to ensure that resources have the proper skills, knowledge when they act on an operational environment. Please detail how you propose to comply with this constraint.

3.1.2.3 Section 3: Product and Services

Skyguide is expecting the successful Bidder to provide high quality services. The Bidder is requested to provide accurate information about their range of expertise and level of skills for deploying and managing such an environment in operation in the Air Traffic Management area.

- This is an important section of the response, which Skyguide will consider as a major selection criterion. It must contain the technical descriptions of the services(s) based on chapter 4, "Platform as a Service specifications"
- It must focus on the descriptions that are relevant for the understanding of the proposed solution(s), and not on general-purpose information
- The Bidder is welcome to propose alternative solutions (variants) as far as they comply with the requirements defined within this RFP. The Bidder may also propose alternate solutions with products of different manufacturers
- If there are different options within a solution set, such options together with the cost consequence should be clearly indicated
- Any comment, suggestions (or reservations) concerning the project are welcome and appreciated
- Potential additional elements (hardware, software or services) not described in the RFP, which are considered as necessary by the Bidder, must also be described in detail in this section

This section must contain:

Section 3.1: Service catalog

3.10: Provide a list of services to be delivered to skyguide as part of the "Platform as a Service" offer. For each service, the following information should be provided:

- Service Name, ID and Description
- Pre-requisites & dependency on other services
- Scope & limitations within the supported hours and picket hours
- Optional scope
- Service deliverables & acceptance criteria
- Service conditions
  - Supported hours
  - Picket hours
  - Response time: request handling delay, response delay, validation delay
- Service request initiation protocol
- KPI
- Charging model

The base service catalog may cover all services described in section 4.3.2 - Service Level requirements

3.11 Provide a list of optional services available and value those services may bring to skyguide

Section 3.2: Governance

3.20 Describe the organization you will put in place to deliver the identified services and the governance associated.

Please detail your approach to address the following topics:

- Service Delivery Management
  - Regular delivery (Delivery planning, information flow, coordination)
  - Special delivery (Emergency situation, during picket hours…)
- Service Quality Assurance
- Compliance management
  - Compliance management processes and tools
  - Compliance assessment
  - Non-compliance identification
  - Non-compliance management : Corrective actions, preventive actions
- Interface/integrate the existing tools at skyguide

Section 3.3: Infrastructure description

3.30:Describe all the necessary components you will deploy in skyguide data centres in Geneva and Zurich and in your own data centres

3.31: Describe how this infrastructure comply with Non Functional Requirements.

3.32: The ATM business services are

3.32: Describe all pre-requisites required to deploy the identified infrastructure at skyguide

3.33: Did you already contributed to the design, implementation and execution of a Disaster Recovery Plan?

Section 3.4: Project Management

3.40: Is there a recognized formal project management and monitoring methodology (mechanism, tools, and progress reports) in use?

3.41: Do quality and project plans exist (per project/system, defining activities, project definitions/procedures, responsibilities (customer/supplier), resources and timescales)?

3.42: Is there an individual responsible for assigning project related activities and project resources?

3.43: Are controls in place to set and track project milestones?

Section 3.5: Change Control and Configuration Management

3.50; How is the installation environment controlled? (Responsibilities defined, System description and change controls for platform, error processing, Data backup/rollback, Installation and updates of external software, change controls procedures)

3.51: Do you use a system for identifying, controlling and tracking every version of each software configuration item?

3.52: Is there a system for recording the configuration of each release

3.53: Is there an identification of the point at which Change Control is applied to each software configuration item?

3.54: Are all change requests formally logged, indexed and assessed?

3.55: Are changes authorized, documented, tested and approved prior to implementation (except for emergencies)?

3.56: Is the emergency process definition/procedure documented covering reviewing, testing, approving, and recording?

3.57: Is the impact of each change on other items and on requirements for re-test assessed and documented?

3.58: Do you have a process to keep the platform up to date (OS, middleware, software upgrade / patching)?

3.57: Describe the process you propose to support skyguide software deployment on the platform (Middleware, Software,…)

Section 3.6: Customer support

3.60; What kind of support services are in place (agreements, scope, procedures, support organization, responsibilities, provision locally/ internationally, use of third parties, maintenance of support agreements)?

3.61: Do you have a Help Desk?

3.62: What is the method of handling of customer complaints?

Section 3.7: Physical access and security

3.70: Do you have physical access controls in your facilities and an authorization/approval workflow in place?

3.71: Describe your solution to ensure the security of all access to skyguide connected computers within your own facilities

Section 3.8: IT security requirements

Section 3.8.1: General

The IT concept and implementation must follow best practices and standards.

3.80

Section 3.8.2: Law

All laws and regulations must be respected, see Chap 6.3

Section 3.8.3: Software

The pre-installed software on computers (delivered by suppliers) shall be available separately in its "original form" (Installation program, installation wizard).

There shall be documentation available for all software used in the project.

A concept for deploying and testing security patches for all systems shall be available.

Only software that is maintained shall be used in this project (for security reasons, but also to maintain compatibility with future operating system releases).

Initially, up-to-date software shall be used (for example Windows Server 2012 instead of Windows Server 2008).

All the third-party software & code (including libraries, frameworks, components) shall be documented in the specific version used.

Section 3.8.4: Identification and Authentication

The system must provide basic IAM functionality to integrate into an enterprise IAM system.

Strong authentication – An entity must be identified and authenticated properly. Based on the criticality of the task that requires authentication, the level of strength for authentication must be defined. This could range from simple password authentication to certificate based or two token authentications.

Section 3.8.5: Access control & Accountability

The system shall log all user (technical and normal/regular users) activity (logging and auditing/accountability)

The system shall provide a role-based access model

A normal user (not a technical user) shall be able to manage the user accounts and permissions

Section 3.8.6: Logging

The system shall log all activities for troubleshooting

The system shall provide standardized logs with the ability to store them on separate logging infrastructure.

Section 3.8.7: Network

The systems in OPS and Services must be in a dedicated subnet (which means the systems must be able to operate through different network zones, segregated by firewalls and or routers).

All confidential data must be encrypted, regardless if the data is in use, in motion or at rest (technical data and business data)

The systems must allow access to its data over a Jump host if required

If SNMP is used, the version 3 shall be used. Older versions shall be disabled

Network segmentation must be made on an adequate level of granularity

Most components today are connected through a network. The varieties of components have a different criticality to the operations. Based on the sensitivity of the systems, they shall be separated from each other using network segmentation. This prevents an attacker from spreading from a compromised system to another. Establishing network segmentation requires the installation of firewalls.

Section 3.8.8: System configuration & management

The operating system, firmware, applications shall be patched frequently (including patching concept)

A proper patching concept that allows deploying security patches in a timely manner keeps systems secure. Usually, when a new vulnerability is discovered it gets misused by malware to gain access to systems. A very crucial way to prevent that from happening is simply patching systems. If a system is not vulnerable to an attack the highest and most reliable sort of protection is given.

Section 3.8.9: Monitoring

The monitoring protocol shall provide integrity mechanisms or encryption

Section 3.8.10: Data

Data integrity mechanisms shall be in place to detect manipulation.

Section 3.8.11: Virtualization

Resource management concept – Depending on the technology and use case, different kind of mitigation measures shall be applied to prevent service outage due to lack of resources. For example to prevent the exhausting of network bandwidth, QoS (Quality of Service) can be applied. To prevent exceeding from disk space, the disk quota mechanism can be activated. Having a resource allocation concept is vital if virtualization technology will be used.

In combination with monitoring and proactive maintenance the risk of resource exhaustion can be mitigated.

Section 3.8.12: PKI

Skyguide offers a PKI infrastructure. It should be used to secure connections & authentication.

Section 3.8.13: Supplier connected systems security requirements

This section applies to your own systems and the system you plan to connect or interface with skyguide in order to render the service

3.80; Is access to IT Systems (OS layer, middleware, databases) provided via a documented approval/authorization workflow?

3.81: Is it ensured that the network of servers cannot be accessed remotely?

3.82: Are all IT systems virus protected?

3.83: Are regular documented security checks carried out?

3.84: Is a documented handling procedure for security incidents in place?

3.85: Is all internet activity monitored and recorded?

3.86: Is an application access control process in place?

3.87: Is there a documented process to develop and provide security patches?

3.88: Do you have a hardening policy? If yes, please provide a description.

Section 3.9: Data privacy and cloud

3.90: Do you have a data privacy officer ?

3.91: Do you foresee any data privacy issue and what would be your proposed mitigation plan?

3.1.2.4 Section 4: Commercial Part

skyguide attaches importance to cost transparency. In order to be able to evaluate financial impact in case of design modifications, the financial offer must be detailed and itemized

Alternate solutions (variants) are welcome. Variants must clearly be indicated as such, and the corresponding price quotes must be filled out in separate tables

The costs must cover all aspects, such as: travel cost, utilization of tools and auxiliary material

All price detail should be given without VAT.
Total price should be provided without and with VAT

Bidders are requested to provide a paper and an electronic version of their financial offer (Excel spreadsheets) in order to facilitate the evaluation process. The electronic file(s) must be provided on a CD-ROM to be included with the offer.

The proposed service price should be valid for a minimum of 12 months, with clearly stated rules in case of further extensions.

The cost of the reversibility and handover phase should be included in the offer.

Section 4.1: pricing information and cost details

All prices must be given in Swiss Francs (CHF).

4.10: Pricing information should be given with this minimal information:

- For each service proposed the price model (by ticket, by volume, by FTE…)
- Cost detailed table
- Gross price total
- Discount
- All the proposed services must be detailed with description, duration, hourly rate and daily rate, etc.
- skyguide is expecting a dynamic pricing model including incentives to improve quality and efficiency.

4.11: Provide a copy of your General Conditions

3.1.2.5 Section 5: Planning

5.10: Give a planning of intention of the project, including:

- Your process design/adjustment to skyguide organization
- Installation and configuration of your tools
- Training of your and skyguide personnel
- Delivery team ramp up
- Go Live date estimation with main decision/acceptance criteria
- A separate high level plan should be also proposed for the reversibility phase

3.2 RFP Planning

3.2.1 Closing Date

The proposal must be received no later than

12:00 Geneva Time on September 15th 2015

Proposals submitted later than the time limit stipulated above, or submitted by any other method or in any other way, or which do not contain all the information required in this document, shall be rejected. In addition, if the envelope or parcel is not sealed or marked as indicated, Skyguide cannot assume any responsibility for the proposal's misplacement or unauthorized opening.

In addition the bidder is requested to send an electronic copy of the proposal in PDF or MS Word compatible format, and an electronic copy of the financial offer in MS Excel compatible format. The files should be provided on a CD-ROM to be included in the sealed envelope.

3.2.2 Schedule

The following table represents the current planning, and is subject to changes.

Tasks Description	Duration	Date
Issue of RFP		19.08.2015
Receipt of the offers (Closing Date) (the bidders are given 3 weeks to submit a proposal)	4 weeks	15.09.2015
Offers analysis. Establishment of a short list	2 weeks	25.09.2015
Presentation Sessions (short-listed bidders only). Supplementary Requests or Questions. Finalization of the offers	2 weeks	09.10.2015
Final Evaluation. Selection of the best bidder by skyguide	2 week	22.10.2015
Management approval; Letter of Intent. Contract definition, establish a purchase order, finalization and signature of the contract	4 weeks	26.11.2015

3.3 Administrative Aspects

3.3.1 Communications during the RFP period

Any questions on technical, contractual or commercial matters relating to the contents of the RFP or the submission of the proposal shall be submitted **in writing**, (E-mail or fax) to the Skyguide Project Manager at the following address:

Project Manager	e-mail: xavier.ruvilly@skyguide.ch
skyguide – Swiss air navigation services ltd Mr Xavier Ruvilly TDM, Technical Services Operations P.O. Box 796 CH – 1215 Geneva 15 Switzerland	Phone: +41 22 417 47 36

3.3.2 Recipient of the offer

The bidder shall submit 3 (three) copies of the proposal in English clearly marked with the project reference T.510.0.608 (paper and CD/DVD). The copies shall be labeled "Master Copy" and "Copy1", “Copy 2” and so on, as appropriate. The bidder must ensure that the content of all copies is identical. If at any time a difference is discovered between any copies of the proposal then the "Master Copy" will prevail as the official copy.

The 3 copies must be sent by registered mail or hand delivered, in a sealed envelope or parcel to the following address:

skyguide – Swiss air navigation services ltd
Mme Véronique Fischer
Procurement
P.O. Box 796
CH – 1215 Geneva 15
Switzerland

3.3.3 Offer validity

The offers must be valid for a minimum period of 90 calendar days after the closing date.

3.3.4 Confidentiality of the RFP document

This document, and any attachments thereto, regardless of form or medium, is intended only for use by the addressee(s) and may contain legally privileged and/or confidential, copyrighted, trademarked, patented or otherwise restricted information viewable by the intended recipient only. If you are not the intended recipient of this document (or the person responsible for delivering this document to the intended recipient), you are hereby notified that any dissemination, distribution, printing or copying of this document, and any attachment thereto, is strictly prohibited and violation of this condition may infringe upon copyright, trademark, patent, or other laws protecting proprietary and, or, intellectual property.

In no event shall this document be delivered to anyone other than the intended recipient or original sender and violation may be considered a breach of law fully punishable by various domestic and international courts. If you have received this document in error, please respond to the originator of this message or email him/her at the address below and permanently delete and/or shred the original and any copies and any electronic form this document, and any attachments thereto and do not disseminate further.

Should the bidder decide not to submit a proposal, the RFP package must be returned immediately to skyguide (Address provided above) clearly marked
"RETURNED DOCUMENT RFP VIS@S – NOT A BID".

The tenderer retained for the realization of this project must commit himself treating all the details of the project in a confidential way.

3.3.5 Information concerning the decision

Communication about the decision and the choice of the tenderer retained for the realization will be made in a written way.

3.3.6 Expenses related to the RFP

Any expenses incurred in formulating a Proposal to this RFP will be borne by, and are the sole responsibility of, the Bidder. This includes any costs and expenses associated with any preliminary and other site visits by Bidders in order to respond to this RFP.

4 Platform as a Service specifications

4.1 Current Situation

4.1.1 Technical service delivery model

Communication, navigation & surveillance (CNS), air traffic management (ATM) and aeronautical information management (AIM) services comprise all deliverables to external customers within the scope of skyguide's mandate and mission. These services are delivered by the CNS, ATM & AIM system which comprises all operational people and procedures as well as required technical services.

The following types of equipment are required:

- Infrastructure equipment provides basic facility-related services required to operate CNS, ATM and AIM equipment (e.g. power supply, air conditioning, cabling …).
- Network equipment comprises local and wide area networks (LAN and WAN) to interconnect equipment and sites as well as related network security devices.
- CNS equipment comprises all technical installations enabling radio communications, aircraft navigation & surveillance (data sources only) for internal & external stakeholders.
- ATM equipment comprises all information technology facilities required to receive, process, distribute and store radar, flight plan and environment related data.
- AIM equipment comprises all information technology facilities required to manage static environmental data, integrated briefing and ATM support services.

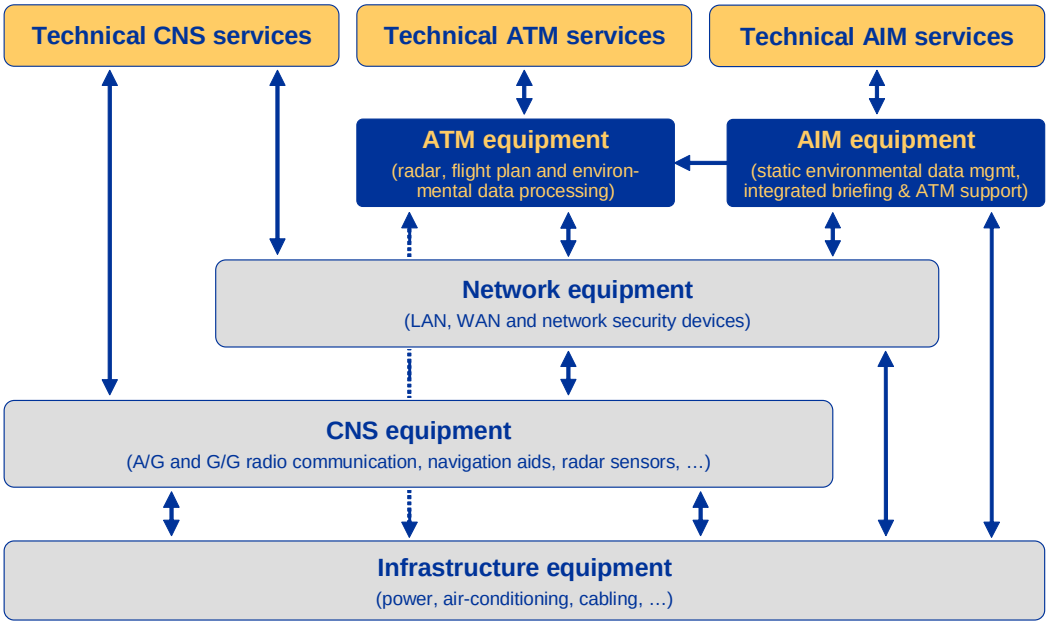


Figure 1 skyguide Technical (T) service delivery model

4.2 System Overview

Through the Virtual Centre Programme, the objective of skyguide IT department is to transform its technical architecture. The Target Architecture provides the architectural underpinning for reusing infrastructure and for decoupling applications from hardware (based on Virtualization), allowing the existing assets to be reused and the legacy equipment to be replaced when needed.

In addition, the Target Architecture introduces the concept of the Common Integration Platform based on an Enterprise Service Bus (ESB).

Skyguide IT department has defined a roadmap to reach this new target architecture. The following diagram shows the state of the IT landscape after the first transition

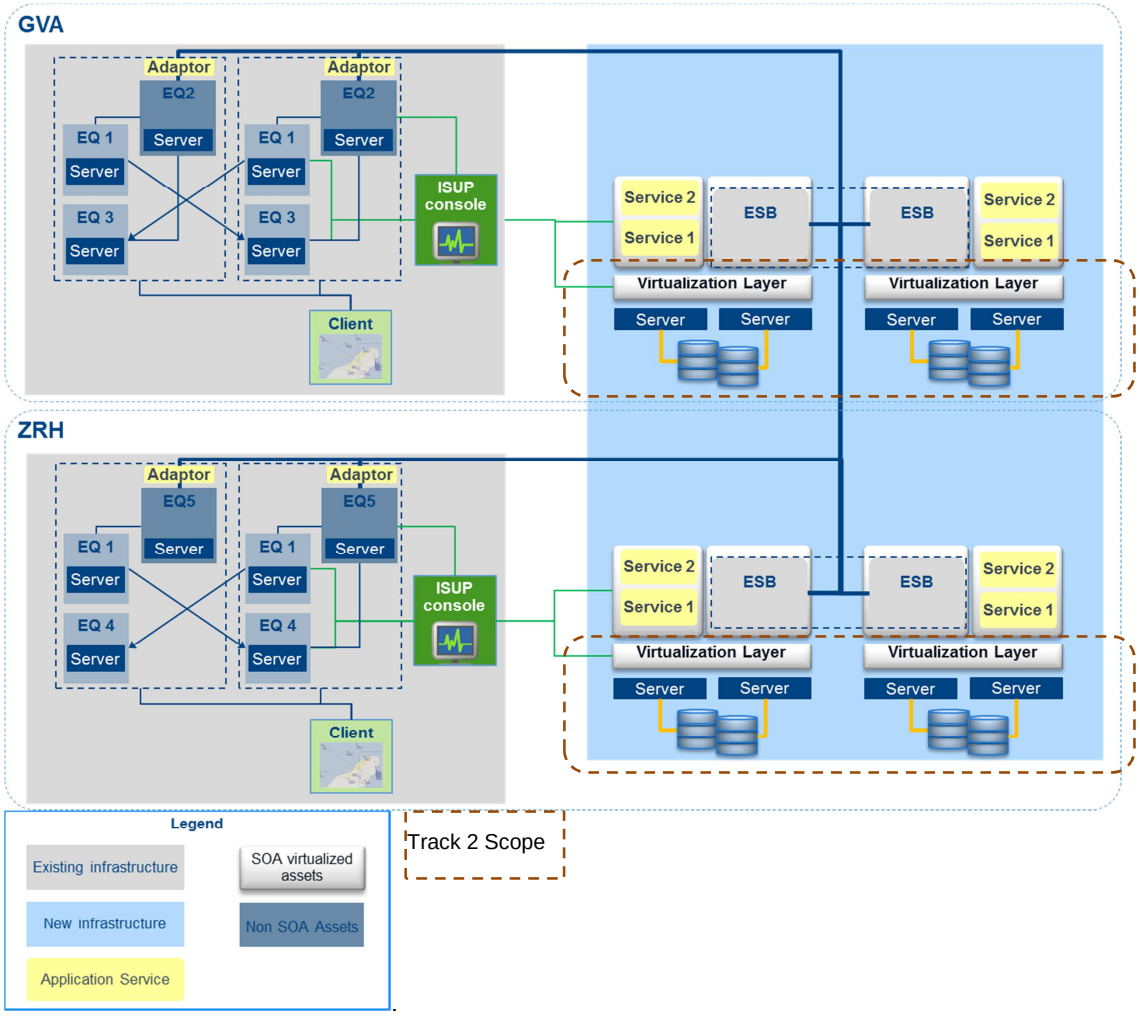


Figure 2: Target IT landscape after first transition

The final objective of the Platform as a Service request is to get the provisioning of the virtual machines and operating systems available and operated in the operational environment of skyguide.

4.3 Requirements

4.3.1 Operational Requirements

Operational requirements are mainly coming from the TD Run Manual (see 1.3.5). Extract of this document can be provided upon request after acknowledgement of RFP participation.

4.3.1.1 Intervention coordination

Formal coordination of work on production equipment is achieved by means of weekly scheduling meetings and the on-site presence of a skyguide data processing representative intervention coordinator during complex interventions. The process/procedure in place at skyguide to make modification on Infrastructure Equipement is called WAC (Work on ATM, AIM, CNS and Infrastructure Equipment).

There are two main type of intervention: Anticipated and Non anticipated

Anticipated

Preventive intervention
Scheduled check, adjustment or replacement of equipment.

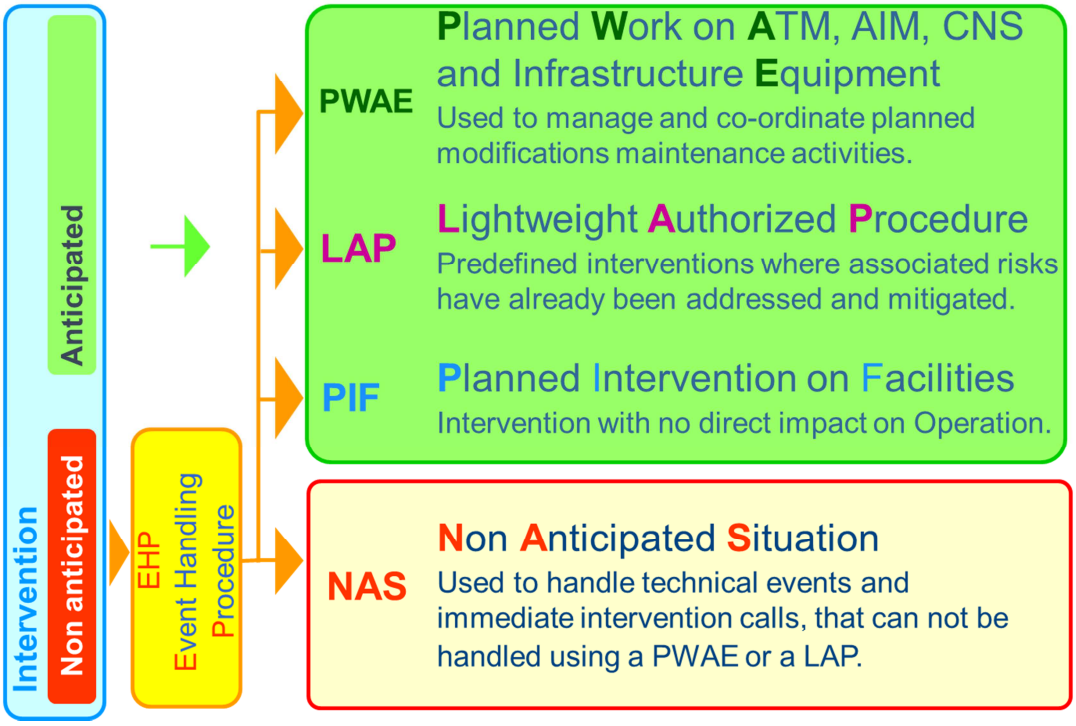
Modification
Intervention triggered by a request for a change to ATM, AIM, CNS or infrastructure equipment.

Non anticipated

Corrective intervention
Triggered by an event that degrades the technical level of ATM, AIM or CNS service. The intervention is intended to overcome or correct the degradation.

Skyguide should keep the accountability of all changes on the operational platform. All activities on the platform should be tracked in a process involving the acceptance of skyguide before execution.

An interface should be defined and set up between service provider procedures and existing PWAE, LAP, PIF and NAS procedures as below described to fit the WAC planning and requirements (example: Emergency change mapping to Non Anticipated Situation).



4.3.1.2 Capacity management of technical skills

The provider is responsible for ensuring a sufficient capacity of competent staff to deliver the identified services in operation.

4.3.1.3 Service Desk

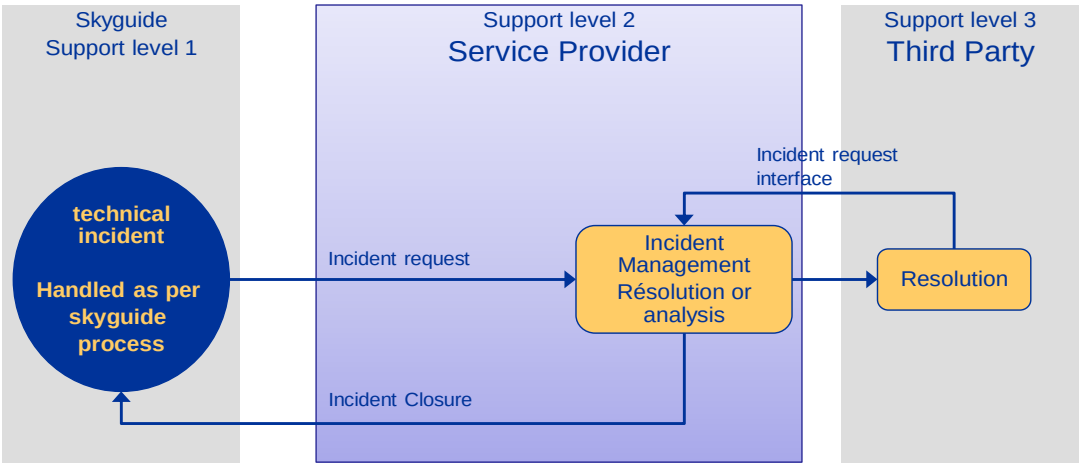
A support has to be available in case of infrastructure issues. The operational infrastructure configuration should be known precisely to be drive the bug fixing process efficiently. Different sub-services are included:

Incident Management in the sense of ITIL should be put in place. This process should be included or integrated into the current skyguide technical support organization as described below:

A three-level support organisation provides technical support for production equipment.

Support level 1 is provided by System Monitoring and Control (SMC) operators and covers all production equipment. SMC operators act as help desk for users experiencing troubles with technical services and provide initial support in case of incidents.
Support level 2 is assumed by the service provider with a detailed technical operating know-how of equipment under their responsibility.
Support level 3 is assumed by internal equipment engineers and/or external equipment providers who have a detailed engineering know-how of their equipment. Internal equipment providers participate at the resolution of incidents during office hours, external equipment providers according to their contractual obligations.

The objective of incident management is to restore the normal level of service as fast as possible after a technical incident and to minimise its impact on service users. The following figure outlines the sequence of actions to be followed to resolve an incident and restore the normal level of technical service.



Derived from this process, incident identified as related to the virtual infrastructure will be handled via a compatible procedure to be put in place.

4.3.2 Service Level requirements

For each service described in the .

Service catalogue (4.3.2.1) below the expected level of service from the vendor has to be documented through a Service Level Agreement (SLA, Specifications) which is part of the legal contract or complementing it.

4.3.2.1 Service catalogue

Service Name:	I10: Virtual Platform, Enterprise server and Enterprise Operating Systems
Description : Provides a reliable and stable computing virtual machine on the backend side The virtual environment should be redundant for high availability and operational Virtual Machines : a hot standby environment should be available for these classes of VMs.	

Service Scope & operational requirements	
Item	**Description**
Highly available virtual machine provisioning	Provision highly available virtual machine on the operational environment. Manage basic redundancy (operation and hot standby instance).
Operational virtual machine provisioning	Provision regular, operational virtual machine on the operational environment. Manage basic redundancy (operation and hot standby instance).
Low availability virtual machine provisioning	Provision low availability virtual machine on the operational environment.
Operating system provisioning	Deploy a fresh version of an operating system on an available virtual machine. • Redhat Enterprise Linux • Windows Server
Virtual Machine & Operating system Operation / maintenance	Maintain in optimal conditions the virtual machine and the operating system according to required availability. For highly available virtual machine, no shutdown outside maintenance windows are allowed. For operational machines, shutdown / restart of the virtual machine is allowed. The target availability outside the maintenance window is 99.999% Maintenance of the Operating System includes : • OS patch deployment when requested by skyguide • Performance monitoring and dynamic resource re-allocation • Availability monitoring and pro-active actions to ensure availability requirements

Service Conditions			
Item	**Open hours**	**Service Request**	**KPI**
Virtual machine provisioning	Open days – 8:00 / 17:00 swiss time	Service ticket	Service ticket closure time
Operating system provisioning	Open days – 8:00 / 17:00 swiss time	Service ticket	Service ticket closure time
VM / OS operation	Regular hours : Open days - 8:00 / 17:00 swiss time Picket hours : Outside Open hours – 24/7	N/A	VM & OS uptime outside maintenance window OS Compliance with security baseline

Service Name:	I20: Data backup & recovery
Description: Backup and Restore services provide a multi-level storage facility to ensure continued data security in case of component or subsystem failure.	

Service Scope & operational requirements	
Item	**Description**
Data backup	Automated data protection Virtual machine snapshot Archiving from disk to tape Disaster recovery support
Data Recovery	On demand data recovery, including VM recovery

Service Conditions			
Item	**Open hours**	**Service Request**	**KPI**
Permanent Data backup	Open days – 8:00 / 17:00 swiss time	Regular request	Backup availability
On demand data backup	Open days – 8:00 / 17:00 swiss time	Service ticket	Service ticket closure time
On demand VM snapshot	Open days – 8:00 / 17:00 swiss time	Service ticket	Service ticket closure time
Data / VM recovery	Open days – 8:00 / 17:00 swiss time Picket hours: outside open hours -.24/7	Service ticket	Service ticket closure time

Service Name:	I21: Storage management

Description:

The Storage Management Services include storage virtualization management, replication, mirroring, security, compression, traffic analysis, process automation and storage provisioning.

Service Scope & operational requirements	
Item	**Description**
Virtualization oriented storage provisioning	Associated Virtual Machine request, provision adapted storage space with optimized level of performance and availability. Replication, mirroring and storage optimization based on usage and Non Functional Requirements (cf Availability, integrity and performance). Continuous storage usage monitoring
High integrity, authenticity and readability storage provisioning	Deliver on demand high integrity, authenticity and readability storage space Data access and modification logging is mandatory.

Service Conditions			
Item	**Open hours**	**Service Request**	**KPI**
Virtualization oriented storage provisioning	Open days – 8:00 / 17:00 swiss time	Service ticket	Service ticket closure time
High integrity, authenticity and readability storage provisioning	Open days – 8:00 / 17:00 swiss time	Service ticket	Service ticket closure time

Service Name:	M20: Configuration Management

Description:

A Configuration Management procedure and tools should be put in place to satisfy the requirement described in NFR section "Auditability"

A process should provide accurate information on environment configurations. In particular, it makes sure that all changes are reflected in configuration management tools and equipment documentation.

Service Scope & operational requirements	
Item	**Description**
Configuration Management	A configuration management solution is used to control and report at any time on : - all installed executable version of the Operating System and middleware, including patches; - all used range of configuration data

Service Conditions			
Item	**Open hours**	**Service Request**	**KPI**
Report on installed Operating System and middleware versions & patches	Open days – 8:00 / 17:00 swiss time	Service ticket	Service ticket closure time

Service Name:	M21:audit & Asset inventory

Description:

An asset management solution and processes has to be put in place to enhance the control data processing infrastructure by keeping an inventory of all environment and their constituent components. In particular:

- clearly identify and locate all components belonging to a unit of equipment
- efficiently address ICT security issues (e.g. identification of infected computers).

All equipment components which are not considered as consumables (e.g. keyboards and mice) must be entered into the asset inventory. As soon as equipment components are received on site, they must be entered in the asset inventory and their asset properties must be recorded.
A minimum set of information has to be collected and kept up to date:

- Location defines the installation site of an equipment instance (e.g. GVA, DUB).
- Technical use defines the operating purpose (production, testing or support).

All assets independent of their type share a common set of asset properties. These asset properties help to clearly identify an asset and provide product and maintenance information about the asset.

The accuracy of all asset and configuration properties in the asset inventory must be formally reviewed and updated at least once a year. The provider is responsible for planning and supervising the annual review of the asset inventory.

Service Scope & operational requirements	
Item	**Description**
Asset Management	Store and maintain asset related information for each deployed equipment component part of the skyguide dedicated platform
Asset Reporting	Generate a report with all up to date asset information of the skyguide dedicated platform

Service Conditions			
Item	**Open hours**	**Service Request**	**KPI**
Asset Management	Open days – 8:00 / 17:00 swiss time	N/A	% of equipment component under the asset management control
Report on all asset information of the skyguide dedicated platform	Open days – 8:00 / 17:00 swiss time	Service ticket	Service ticket closure time

Service Name:	M22: Supervision, Monitoring & event management

Description:

This service comprises all activities to monitor the correct functioning of the environment and to act as single point of contact for the T department with respect to incident notification and standard technical service configuration requests.

The supervision service is a specific request to integrate the Platform into a skyguide internal supervision solution (ISUP).

Service Scope & operational requirements	
Item	**Description**
Monitoring	Monitor technical activities of the Platform and report on them.
Event Management	ITIL based Event Management solution : • The purpose is the ability to detect events, investigate and determinate the correct control action • The events (warnings and exceptions) can be used to automate many routine activities • Provide mechanisms for early detection of incidents.
Supervision	Integration with the ISUP solution. The scope of this service is to deliver a set of standard SNMP frames collected by the ISUP server. Those SNMP frames should contain technical information about the availability and integrity of the redundant instances of the Platform.

Service Conditions			
Item	**Open hours**	**Service Request**	**KPI**
Monitoring	Continuous activity	N/A	Monitoring solution uptime
Event Management	Continuous activity	N/A	Number of events detected per month
Supervision	Continuous activity	N/A	Availability of the SNMP integration

Service Name:	M23: Performance mamagement
Description: In conjunction with the monitoring service, the Performance Management service intend to optimize performance and efficiency.	

Service Scope & operational requirements	
Item	**Description**
Performance Management	The performance management service includes: • Monitoring the performance and throughput or load on the Platform • Performance analysis of measurement data, including analysis of the impact of new deployments on capacity • Performance tuning of activities to ensure the most efficient use of the Platform

Service Conditions			
Item	**Open hours**	**Service Request**	**KPI**
Performance Management	Continuous activity	N/A	Service Management dashboard delivered each month

Service Name:	M32: Change management & deployment

Description:

This service cover the tools and processes used to deploy an environment, including Virtual Machine Provisioning, Operating System installation and configuration, middleware installation and configuration & patch deployment.

The Change Management and Deployment service should be extended to support the deployment of software and data through all tests and production environments.

This includes :

- OS, Middleware and software Configuration management & version control
- Orchestration & Automatic deployment
- Version Compliance management
- Repository management
- Baseline management
- Environment management (Integration, Validation, Preproduction, Production)

Service Scope & operational requirements	
Item	**Description**
Configuration & Compliance Management	Track all OS, middleware and software versions including patches in dedicated skyguide shared repositories Raise alerts when an environment derive from its target baseline and execute corrective actions, aligned with the deployment procedure in operation.
Environment provisioning	Deploy a set of Virtual Machines, OS, middleware and software releases as defined in the identified baseline.
Patch deployment	Deploy a validated patch on OS or middleware in a dedicated environment

Service Conditions			
Item	**Open hours**	**Service Request**	**KPI**
Configuration & Compliance Management	Open days – 8:00 / 17:00 swiss time Picket hours: outside open hours -.24/7	Baseline Deployment Request (Service Ticket)	% machines aligned with the baseline per environment % emergency change requests vs regular deployment requests
Environment provisioning	Open days – 8:00 / 17:00 swiss time	Service Ticket	Service ticket closure time
Patch deployment	Open days – 8:00 / 17:00 swiss time Picket hours: outside open hours -.24/7	Service Ticket	Service ticket closure time

I23: Disaster recovery

Disaster recovery services are considered out of the current RFP scope. However it may be considered as an optional service. The bidder is free to propose any optional services related to DRP

4.3.2.2 Response time

For each Service Ticket created, a priority is assigned with the requestor.

Based on this priority, the following response time are expected:

	User response time	**Incident response time / Identified workaround**	**Resolution response time**	**Request closure**
Priority 1	<10 min or phone call	<1h	<2h	<8h
Priority 2	<8h	<24h in 80% of the cases	<48h in 80% of the cases	<48h in 80% of the cases
Priority3	<24h	<48h in 80% of the cases	<1 week in 80% of the cases	<1 week in 80% of the cases

4.3.2.2.1 Service reporting and reviewing - KPIs

Once in place, the service delivered should be reviewed on a monthly basis. A formal review session should be setup between the skyguide Contract Manager and the service provider Service Delivery Manager.

All identified KPI in chapter 4.3.2.1 should then be presented. Any deviation in the expected service level should be justified and corrective actions proposed.

Additional KPIs based on experience can be proposed and reported by the bidder.

4.3.3 Quality Assurance and applicable standards

Following standard or quality assurance measure must be followed, as per described in the project Quality Plan (*1.3 References and Source Documents)*:

- ATM and AIM Regulation
- Information Technology Infrastructure Library (ITIL) and IT Service Management (ISO 2000)
- Information Security Management Systems (ISO 27001)
- Quality Management Systems (ISO 9001)

4.3.4 Training and people qualification

The solution is designed and operated by qualified personnel. Curriculum and training evidence demonstrating are available upon request.

As an example, it is expected to have certified staff on the latest IT technology (such as virtualization). In addition, project managers and maintenance personnel should be familiar with project management methodology (Prince 2, PMI or other) as well as ITIL.

The roles and responsibilities as well as required set of skills necessary to operate and administer the solution will have to be documented (example: thru RACI or RKS)

Any external or subcontracted staff/service related to maintenance activities will undergo the procedure described in E5WI0120E External Provider Competence Recording.

4.3.5 Documentation Requirements

The system has to be maintained according to a documented lifecycle which produces deliverables comparable to the quality standard provided by the skyguide Quality Plan (see 1.3 References and Source Documents). Following documentation should be made either available upon request for review by skyguide or supplier will contribute as reviewer in case they are existing on skyguide side.

Lifecycle related documentation

- Quality Plan and deliverables identified inside this plan

Design documentation

- Architecture and Diagram (physical and logical)
- Redundancy and high availability concept

Devices documentation (network and other)

- User manuals
- Technical documentation

Test and verification documentation

- In line with "Ref 1.3.3"

Procedure

- Quality Management applicable procedures (maintenance, incident management…)

Equipment documentation is currently stored in the internal Document Management System "Skydoc" folders, with every unit of equipment having its own equipment sub-folder

- Data Services AIM for equipment providing technical AIM services
- Data Services ATM for equipment providing technical ATM services
- Data Services TEC for equipment providing internal technical services.

The provider should manage its documentation either with the existing tools and process at skyguide or with a similar approach of its own.

4.3.6 Legal requirements

4.3.6.1 Sub-contracting

The service provider is not authorised to subcontract, partially or entirely, the execution of the services to a third party without the prior written consent of skyguide.

To further guarantee that service levels will be met, all roles and relationships between lead and subcontracted vendors are documented and cannot be done without the approval from skyguide. Strategic vendors are requested by skyguide to demonstrate processes to ensure that their subcontractors meet contractual requirements.

The service provider agrees to show the conformity of the service provision within a vendor qualification (e.g. an on-site audit) to skyguide staff or authorized third parties. Within an audit the operation procedures and will be checked and the usage will be verified. The service provider agrees to allow the service requestor (or authorized 3rd parties) to conduct audits to assess the service provider's service provision processes for conformance and compliance with applicable rules and standards as defined and agreed within this document. During such audits a detailed assessment of the service provider’s underlying policies and procedures will take place including an evaluation of the application of these. Any such audit will be announced minimum 15 working days in advance.

4.3.6.2 Intellectual property rights, copyright

The service provider warrants that, during the course of the services, it shall not infringe any intellectual property rights of third parties. The service provider shall be liable for any violation of the legal rights of third parties in respect of patents and/or copyrights used by the service provider in the performance of the Services and shall hold harmless and indemnify skyguide against every and all claims and demands made against it and any costs or expenses incurred by skyguide as a consequence of such violation.

To the extent that any new information, product, software releases, system configuration baseline, inventions or any other item or matter subject to patent protection is developed by the service Provider in the course of the Agreement, such matter shall be property of skyguide, which can seek legal protection of the matter.

The copyright of all design documents, all data provided by the service provider in any form and format whatsoever during the course of the services is property of skyguide and protected through skyguide's copyright. Skyguide is entitled to modify, duplicate, use, install, re-process, maintain, etc. any piece of data mentioned in this clause without any restriction and without requiring the consent of the service provider.

4.3.6.3 Liability

Liability of the service provider

The service provider shall indemnify and hold skyguide harmless for and against any direct damages which it might cause to skyguide or its employees within the framework of the performance or non-performance of the Contract.

The limitation and exclusion of damages in the foregoing sentences will not apply, however, to liability arising from: personal injury or death, defect or deficiency caused by wilful misconduct or wilful negligence on the part of the service provider.

Under no circumstances shall the service be liable for any indirect, special, incidental or consequential damages from alleged negligence, breach of warranty, strict liability or any other theory, including but not limited to loss of anticipated profit, loss resulting from business disruption, claims by third parties or deriving from data loss.

Liability of the skyguide

Under no circumstances will skyguide be liable for any indirect, special, incidental or consequential damages and/or losses arising out from alleged negligence, breach of warranty, strict liability or any other theory, including but not limited to loss of anticipated profit, loss resulting from business disruption, claims by third parties or deriving from data loss.

4.3.6.4 Contract change procedure

Once the contract is signed between skyguide and the service provider, change can be made to the contract under the following conditions.

<service requestor> can request scope changes to the service content at any time after service start. The request for change has to be made in written form.

<SERVICE PROVIDER> will validate the requested change and inform <service requestor> within <n> working days. If <SERVICE PROVIDER> does regard the requested change as not realizable, <SERVICE PROVIDER> will describe the reasons for that in written form and discuss it with <service requestor>. If necessary, <SERVICE PROVIDER> will inform <service requestor> within <n> working after change request issue if extensive examinations are required.

If <service requestor> agrees on the extensive examination, <SERVICE PROVIDER> will submit a respective offer to <service requestor> including cost information. <service requestor> will approve or decline this offer within <n> working days.

If an extensive examination of the requested change is not required <SERVICE PROVIDER> will submit a realization offer. The time frame for this offer will be agreed between <service requestor> and <SERVICE PROVIDER> case by case.

The offer will contain all detail information related to the service duration, planned dates and impact to the remuneration. <service requestor> will either approve or decline the realization offer within a to-be-agreed-upon offer binding time.

Also <SERVICE PROVIDER> can submit change suggestions to <service requestor> in the form of examination- and realization offers.

Agreed service changes have to be bindingly documented as an adaptation to the contract. The contract partners may agree that the services impacted by the requested change can be stopped until the necessary adoption to the contractual agreements have been made.

If the necessary change to the contractual agreements are not realized within the offer binding time the work can be continued according to the terms of the existing contract.

4.3.6.5 Transfer of service(s) to another party

<service requestor> may ask <service provider> to transfer the services to another party based on defined conditions.

<service provider> shall support such transfer of service to another party to the best of its knowledge and shall take all necessary steps and measures to ensure the transfer is performed in a safe and controlled manner.

4.3.6.6 Governing law and dispute resolution

The Contract shall be interpreted and any dispute shall be settled in accordance with the federal laws of Switzerland.

The parties agree to use their best efforts to resolve any dispute that may arise under this contract through good faith negotiations.

If any dispute cannot be resolved by negotiation between the Party’s respective Project Managers, each Party shall designate one or more executives to act on behalf of such Party to negotiate to resolve the matter. At the earliest practical time, a meeting shall be held to discuss the matter in dispute without prejudice to the interests of either Party. Any resolution so effected shall be recorded in writing and signed by both Parties. Such a resolution shall be final and binding on the Parties.

All disputes arising out of the Contract, which cannot be resolved by amicable means as described above, shall be submitted to the jurisdiction of an Arbitration Court. Each Party shall nominate one arbitrator within thirty (30) days from the day when notice was first given by the other Party of that Party's intention to have the matter submitted to arbitration. Both arbitrators shall then nominate a third arbitrator as Chairman of the Arbitration Court within an additional 30 days. Failing a nomination of an arbitrator by one or both of the Parties within the time specified, or failing an agreement on the nomination of the Chairman within the time specified, either Party may refer to the President of the Swiss Federal Supreme Court to make the nomination.

The seat of the Arbitration Court is the city of Geneva/Switzerland. The Arbitration Court will determine in accordance with the Rules of Arbitration of the International Chamber of Commerce. The language will be English.
The decision of the Arbitration Court shall be final.

The Parties agree that, until the terms of this Article 4.3.7.5 have been satisfied, neither Party shall initiate any legal action nor issue any notice of termination with respect to this Contract. The failure of the Parties to resolve a dispute will not be a breach of this Contract and not, in any way, change the rights or obligations of the Parties hereto. Pending settlement of any dispute or disagreement under this Article, the Supplier shall proceed diligently with the performance of the Work, unless skyguide delivers a notice of suspension or termination in accordance with the Contract.

The place of jurisdiction is the City of Geneva, Switzerland.

5 Acceptance Form Request for Proposal

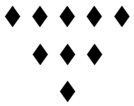
The undersigned company, after having taken knowledge of the specific conditions, as described in the present document, and after having realized the exact nature of the considered work, states to have received all the information necessary for the establishment of its offer.

Consequently, it engages, for it and its having right, to carry out the whole of work at the prices indicated in the price summary table provided in its offer, while conforming strictly to all the requirements enumerated in this document.

.....

The bidder – Company name and representative

.....



6 Appendix

6.1 High level design of the skyguide test environments

The following diagram is provided for information only. This design represent a solution to cover Non Functional Requirements as described in the service catalog. However, it may not be the only solution and the bidder is free to propose any alternative solution.

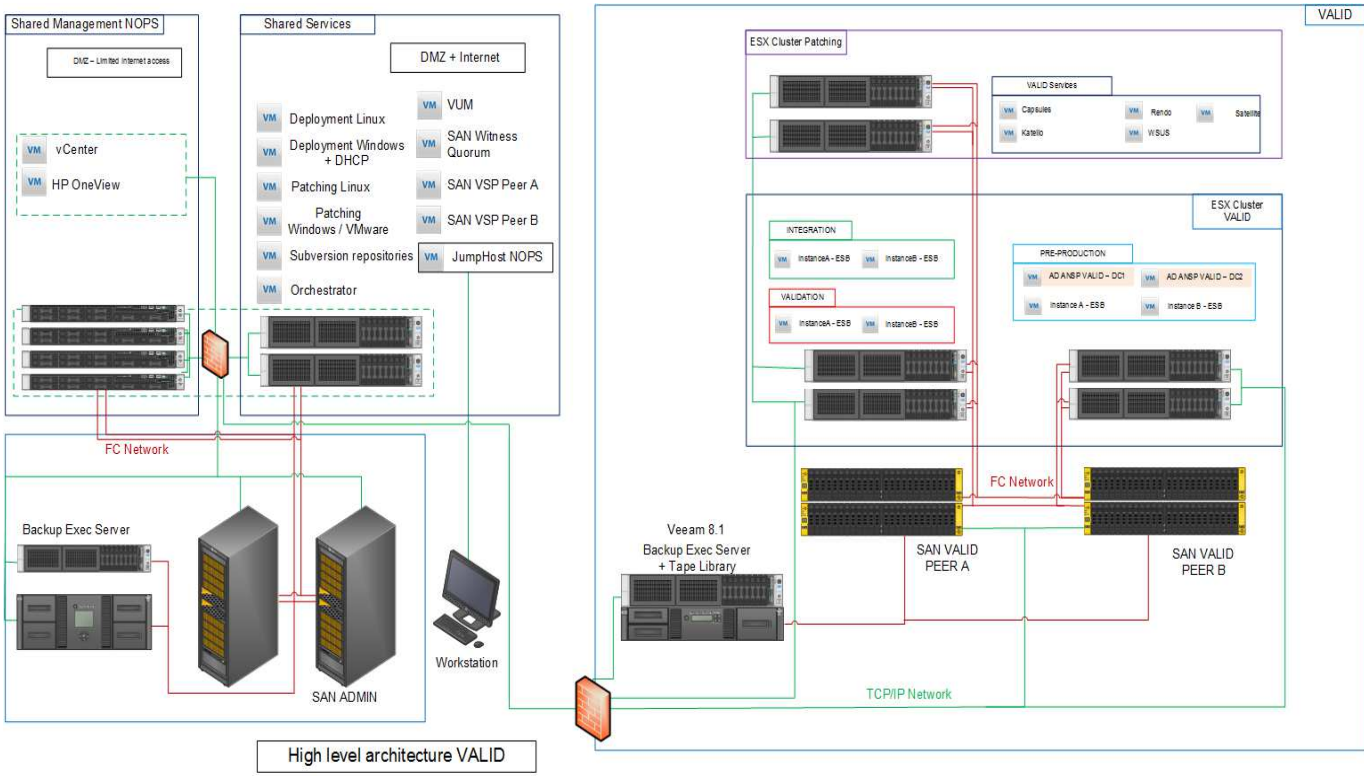


Figure 3 : Server and Network Blocks high level view (Shared and Test environments)

6.2 High level design of the Operational Network environment

The following diagram shows a potential integration of the target platform into skyguide operational environment.

To get a clear segregation of duties, skyguide would recommend to manage the communication layer up to the Virtual Switch layer. In such configuration the interface layer between the bidder operation and maintenance team and skyguide communication team responsibilities are clearly separated and the interface clearly identified.

The bidder is free to propose any other alternative solution. In such case, the impact / modification of the Shared Service and Shared management infrastructure have to be clearly highlighted in the proposed alternative.

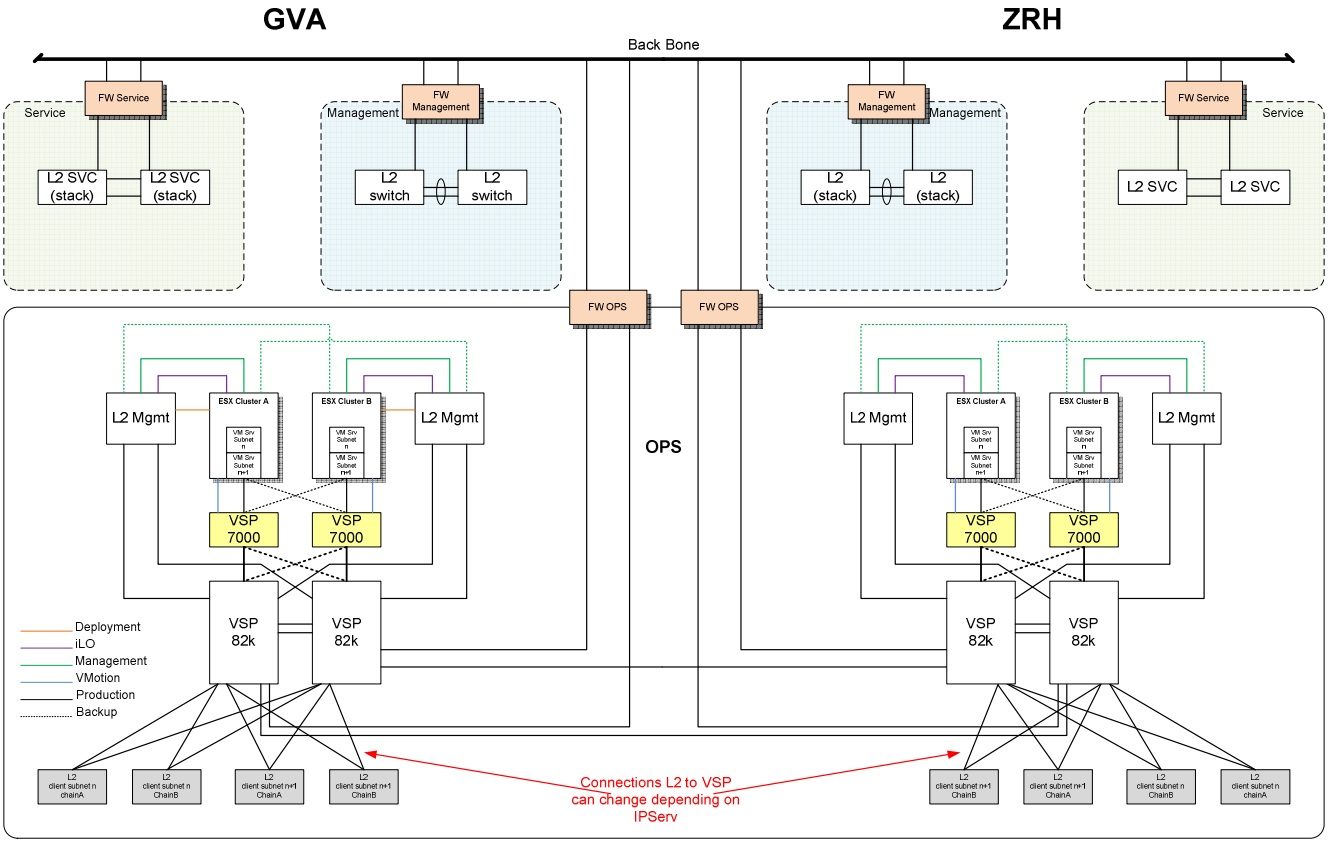


Figure 4 : High Level Network view of skyguide operational environment

6.3 ATM and AIM Regulation

The below list of regulations is non-exhaustive and is used as reference in skyguide. Although the service provider is not directly subjected to these regulations, special attention should be paid by service provider to operate under some of related requirements with skyguide assistance.

The following regulations could have an impact on :	**Rationale**
Commission Regulation (EC) No 482/2008 of 30 May 2008 establishing a software safety assurance system to be implemented by air navigation service providers and amending Annex II to Regulation (EC) No 2096/2005.	VIS@S is not considered as skyguide equipment but includes low level software (like administration console or middleware) in the sense of Skyguide that support applications installed on top of it.
Commission Implementing Regulation (EU) No 1035/2011 of 17 October 2011 laying down common requirements for the provision of air navigation services and amending Regulations (EC) No 482/2008 and (EU) No 691/2010.	High level regulation describing the basis of QMS for ATM (ex. ATSEP, safety, quality…). The method described in the Quality Plan and contractual documents transform these requirements into process and procedures.
Commission Implementing Regulation (EU) No 390/2013 of 3 May 2013 laying down a performance scheme for air navigation services and network functions.	Amendment to above mentioned regulation (1035)

The following regulations or guidelines were taken in consideration by either for information or reference	**Rationale**
Commission Implementing Regulation (EU) No 1207/2011 of 22 November 2011 laying down requirements for the performance and the interoperability of surveillance for the single European sky.	Relates to performance requirements
088/ ED-125 - Process for Specifying Risk Classification Scheme and Deriving Safety Objectives in ATM	This was used to derive the Non Functional Requirements of VC2 with the exception of EUROCAE ED-136 - VoIP ATM System Operational and Technical Requirements as VOIP is out of VIS@S scope.
EUROCONTROL Standard document for radar surveillance in en route airspace and major terminal areas SUR.ETI.ST01.1000-STD-01-01	
ICAO - Aeronautical Telecommunications - Annex 10 to the Convention on international Civil Aviation – Volume II Communication Procedures including those with PANS status	
IEEE 2914812011 - Systems and software engineering - Life cycle processes – Requirements engineering	
CEN - EN 16495: Air Traffic Management - information security for organisations supporting civil aviation operations.	
EUROCAE ED-137 - interoperability standards for VOIP ATM components	
EUROCAE ED-138 - Network requirements and performances for voice over internet protocol (VOIP) air traffic management (ATM) systems	