

Security Technical and Organizational Measures (TOM) Appendix for SITA Bag Manager Core service schedule

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APPENDIX 2 FOR ANNEX A OF DATA PROTECTION AGREEMENT

1. Purpose

The Security Measures Appendix's purpose is to list all the technical and organizational measures (TOM) implemented by SITA to secure any personal data processed as defined in the Data Processing Agreement (DPA) to which this appendix is attached.

The security measures defined in section 3 implement the requirements of Article 32 of the GDPR and its protection objectives in concrete terms.

The detailed measures apply to the Service.

Evidence of the measures implemented and maintained by SITA may be requested by the Customer.

Relevant references to the respective ISO 27002:2022 controls are attached to each of the measures.

2. Definitions and Explanations

2.1. Explanation of GDPR principles (Art. 5)

Lawfulness, fairness, and transparency: the organization must identify valid grounds to process data, handle it in ways that people would reasonably expect and to inform people about their personal data being processed.

Purpose limitation: the organization must be clear about personal data processing purpose and specify it in privacy information for individuals. Valid ground must be obtained (e.g., consent) in case of new purpose.

Data minimization: the organization must ensure the processed personal data is adequate, relevant and limited to only what is necessary.

Accuracy: the organization must ensure the held personal data is accurate and take responsible steps to correct or erase the data as soon as possible if an inconsistency or error is discovered.

Storage limitation: the organization must not keep personal data for longer than needed and must justify how long is personal data kept, with clear retention periods. Held personal data should be reviewed, erased, or anonymized when no longer needed.

Integrity and confidentiality (security): the organization must ensure to have appropriate security measures in place to protect the held personal data.

Accountability: the organization must take responsibility for what it does with personal data and how it complies with other principles. Measures and records should be available to demonstrate compliance.

2.2. Definitions specific to this Appendix:

AES: means Advanced Encryption Standard which is a U.S. Government-approved cryptographic algorithm that can be used to protect electronic data. The AES algorithm is a symmetric block cipher that can encrypt (encipher) and decrypt (decipher) information.

API: means Application Programming Interface which is a set of programming code that enables data transmission between one software product and another.

CAB: means Change Advisory Board which is the managerial instance supporting the assessment, prioritization, authorization, and scheduling of changes.

CIS benchmarks hardening guidelines: mean Center for Internet Security benchmarks hardening guidelines which are also called “CIS benchmarks”, are recognized as security state-of-the-art measures for defending IT systems and data against cyberattacks and offer prescriptive guidance for establishing a secure baseline configuration.

CPU: means Central Processing Unit which is the component of a computer system that controls the interpretation and execution of instructions.

DPA: means Data Processing Agreement which is a legally binding contract that states the rights and obligations of each party concerning the protection of personal data.

DRP: means Disaster Recovery Plan which is a formal document created by an organization containing detailed instructions on how to respond to unplanned incidents such as natural disasters, power outages, cyberattacks and any other disruptive events.

GCM: means Galois/Counter Mode which is a mode used for authenticated encryption with associated data and providing confidentiality and authenticity for the encrypted data and authenticity for the additional authenticated data.

GDPR: means General Data Protection Regulation which is a regulation in EU law on data protection and privacy in the European Union (EU) and the European Economic Area (EEA).

HTTPS: means Hypertext Transfer Protocol Secure which is an internet communication protocol that protects the integrity and confidentiality of data between the user's computer and a website.

IDS: means Intrusion Detection System which is a device or software application that monitors a network or systems for malicious activity or policy violations.

IPS: means Intrusion Prevention System which is a system that can detect an intrusive activity and can also attempt to stop the activity, ideally before it reaches its targets.

ITSM: means IT Service Management tool which is a software solution that helps organisations manage the lifecycle of IT services: provision, tracking changes, managing incidents and requests.

JWT: means JSON Web Token which is an open standard that defines a compact and self-contained way for securely transmitting information between parties as a JSON object.

MDM: means Mobile Device Management which is a software that allows IT administrators to control, secure and enforce policies on smartphones, tablets and other devices.

MFA: means Multi-Factor Authentication which is an authentication method that requires the user to provide two or more verification factors to gain access to a resource.

SSL: means Secure Socket Layer which is a security protocol providing privacy and data integrity between two communicating applications. The protocol is composed of two layers: the TLS Record Protocol and the TLS Handshake Protocol.

OWASP Top 10: means Open Web Application Security Project Top 10 which is the Top 10 vulnerability report, which is a regularly updated report outlining security concerns for web application security, focusing on the 10 most critical risks observed in the industry at the moment of release.

PAM: means Privileged Access Management which is the combination of tools and technology used to secure, control and monitor access to an organization's critical information and resources.

RBAC: means Role Based Access Control model which is an approach to handling security and permissions in which roles and permissions are assigned within an organization's IT infrastructure and applications. Access permissions are assigned based on a defined role model. Defined user roles represent a set of work processes within the organization.

RTO: means Recovery Time Objective which is the maximum tolerable length of time that a computer, system, network or application can be down after a failure or disaster occurs.

RPO: means Recovery Point Objective which is the maximum acceptable amount of data loss after an unplanned data-loss incident, expressed as an amount of time.

SAST, DAST and/or SCA: means tools for a secure code review, being a specialized task involving manual and/or automated review of an application's source code to identify security-related vulnerabilities. Static Application

Security Testing (SAST) aims at identifying common flaws before compiling a release. Dynamic Application Security Testing (DAST) aims at examining a running build and detect issues such as misconfiguration and error handling. Software Composition Analysis (SCA) is an automated process that identifies vulnerabilities in software libraries and open-source components licenses in a codebase. This analysis is performed to evaluate security, license compliance, and code quality.

Service: means SITA Bag Manager Core

SFTP: means SSH File Transfer Protocol which is a secure file transfer protocol that uses secure shell encryption to provide a high level of security for sending and receiving file transfers.

SHA: means Secure Hash Algorithm which is a hash algorithm with the property that it is computationally infeasible to find a message that corresponds to a given message digest, or to find two different messages that produce the same message digest.

SIEM: means Security Information and Event Management which supports threat detection, compliance and security incident management through the collection and analysis (both near real time and historical) of logs, allowing to raise alerts based on security events.

SoD: means Segregation of Duties which is the concept of having more than one person required to complete a task. It is an administrative control used by organisations to prevent fraud, sabotage, theft, misuse of information, and other security compromises.

SSH: means Secure Shell Protocol which is a cryptographic network protocol for operating network services securely over an unsecured network.

TLS: means Transport Layer Security which is a cryptographic protocol that provides end-to-end security of data sent between applications over a network.

TOMs: means Technical and Organizational Measures is a Data Privacy annex listing security controls aimed at protecting personal data against accidental or unlawful destruction or accidental loss, alteration, unauthorized disclosure or access, in particular where the processing involves the transmission of data over a network, and against all other unlawful forms of processing.

UAT: means User Acceptance Testing which is a type of testing performed by the end user or the client to verify/accept the software system before moving the software application to the production environment.

VLAN: means Virtual Local Area Network which is a broadcast domain that is partitioned and isolated within a network at the data link layer. A single physical local area network (LAN) can be logically partitioned into multiple, independent VLANs; a group of devices on one or more physical LANs can be configured to communicate within the same VLAN, as if they were attached to the same physical LAN.

VPN: means Virtual Private Network which provides a secure, often encrypted connection between two private networks over a public network. A site-to-site VPN is designed to securely connect two geographically distributed sites. A remote access VPN is designed to link remote users securely to a corporate network.

WAF: means Web Application Firewall which is a specific form of application firewall that filters, monitors, and blocks web traffic to and from a web service.

3. Security Technical and Organizational Measures (TOM)

3.1. Global SITA security measures

SITA has implemented security measures that apply to the organization as a whole, and hence to all of SITA's products and services.

Please refer to the following link to have access to these global security measures:

<https://www.sita.aero/globalassets/docs/other/Global-Security-TOMs.pdf>

This link may be updated periodically by SITA, but it shall not be amended in such a way that causes material decrease in security measures applied by SITA under this TOM.

3.2. SITA Bag Manager Core specific security measures

The below security measures are implemented at SITA Bag Manager Core service level. The service consists of: (a) SITA ATI Cloud hosted option; and (b) On-premises (SITA managed) hosted option. This schedule applies to the relevant option selected by the Customer, as applicable.

3.2.1. Network security

The below specific network security measures are implemented for the Service:

SITA ATI Cloud hosted option:

- Network segmentation: VLAN and firewall segmentation is implemented to isolate sensitive components,
- Web application firewall: a network-based WAF is implemented, with whitelisting enabled,
- Firewall: server-based firewall as well as software-based firewalls are implemented,
- Intrusion Prevention Systems: network-based intrusion prevention system (NIPS) is implemented,
- Intrusion Detection Systems: network-based intrusion detection system (NIDS) is implemented,
- VPN: a VPN is implemented for external support with MFA required,
- Network devices hardening: SSH is enabled with TLS 1.2; hardening measures are implemented; scans are regularly launched to verify hardening compliance.

On-premises (SITA managed) hosted option:

- Network segmentation: VLAN and firewall segmentation is implemented to isolate sensitive components,
- Firewall: software-based and network-based firewalls are implemented,
- Network devices hardening: SSH is enabled with TLS 1.2; hardening measures are implemented; scans are regularly launched to verify hardening compliance.

References	
Related ISO/IEC 27002:2022 controls	08.20. Networks security; 08.21. Security of network services; 08.22. Segregation of networks
Related GDPR principles	Integrity and confidentiality (security)

3.2.2. Operational security

The below specific operational security measures are implemented for the Service:

SITA ATI Cloud hosted option:

- Antivirus: an antivirus is deployed on workstations,
- Vulnerability management: a vulnerability management procedure is documented and implemented:
 - ▶ Penetration tests are launched once every quarter; vulnerability scans (SAST, DAST and/or SCA) are launched before any new release,

- Patch management: a patch management procedure is documented and implemented:
 - ▶ Manual patching is enforced; all patches are tested before moving to UAT or production,
- Change management: a change management procedure is documented and implemented:
 - ▶ An ITSM tool is used to track all changes; all changes go through the Change Approval Board (CAB) process,
- Capacity management: a capacity management process is documented and implemented:
 - ▶ Monitoring tools (scripts) are used to assess and alert on any capacity issues on network devices and servers (CPU, memory utilization, resource utilization),
- System operating procedures: standard operating procedures are documented for administration and support, including standard security configurations,
- Logging and monitoring: all users access and systems logs are collected on both infrastructure and applicative levels; firewall security logs are analysed in a SIEM; some manual logs reviews are also performed on an ad-hoc basis in case of incident or troubleshooting; logs are retained for a week before being archived,
- System hardening: pre-hardened deployment are performed based on SITA Baggage hardening catalog, itself based on CIS Benchmark.
- Device management: a device management process is documented and implemented: [OPTIONAL – DOES NOT APPLY IF SITA DOES NOT MANAGE THE BAG MANAGER HHT DEVICES FOR THE CUSTOMER]
 - ▶ A Mobile Device Management (MDM) solution is implemented for software management, scripts deployments, license management and device monitoring,
 - ▶ Data in transit to and from the devices are encrypted; no data is stored on the device itself,
 - ▶ A safe device disposal process is implemented.

On-premises (SITA managed) hosted option:

- Antivirus: an antivirus is deployed on workstations,
- Patch management: a patch management procedure is documented and implemented:
 - ▶ Manual patching is enforced; all patches are tested before moving to UAT or production,
- Change management: a change management procedure is documented and implemented:
 - ▶ An ITSM tool is used to track all changes; all changes go through the Change Approval Board (CAB) process,
- Capacity management: a capacity management process is documented and implemented:
 - ▶ Monitoring tools (scripts) are used to assess and alert on any capacity issues on network devices and servers (CPU, memory utilization, resource utilization),
- System operating procedures: standard operating procedures are documented for administration and support, including standard security configurations,
- Logging and monitoring: all users access and systems logs are collected on both infrastructure and applicative levels; firewall security logs are analysed in a SIEM; some manual logs reviews are also performed on an ad-hoc basis in case of incident or troubleshooting; logs are retained for a week before being archived,
- System hardening: pre-hardened deployment are performed based on SITA Baggage hardening catalog, itself based on CIS Benchmark.
- Device management: a device management process is documented and implemented: [OPTIONAL – DOES NOT APPLY IF SITA DOES NOT MANAGE THE BAG MANAGER HHT DEVICES FOR THE CUSTOMER]
 - ▶ A Mobile Device Management (MDM) solution is implemented for software management, scripts deployments, license management and device monitoring,
 - ▶ Data in transit to and from the devices are encrypted; no data is stored on the device itself,
 - ▶ A safe device disposal process is implemented.

References

Related ISO/IEC 27002:2022 controls	05.37. Documented operating procedures; 08.06. Capacity management; 08.07. Protection against malware; 08.08. Management of technical vulnerabilities; 08.15. Logging; 08.16. Monitoring activities; 08.32. Change management
Related GDPR principles	Integrity and confidentiality (security)

3.2.3. Information protection

The below specific information protection security measures are implemented for the Service:

SITA ATI Cloud hosted option:

- Data classification: different security requirements to be implemented depending on the data classification level; operational data and user data are segregated in different schemes at database level,
- Secured information exchange / data in transit encryption: information is exchanged securely using HTTPS with signed certificates, SFTP and MQ SSL; AES-256-GCM encryption mechanism is used,
- Data at rest encryption: database encryption is implemented; all personal data are encrypted; all passwords are encrypted with SHA-512,
- Information deletion: default data retention policies are implemented:
 - ▶ The retention period goes from 30 to 180 days, configurable based on Customer's requirements. Customer shall specify to SITA the data retention period up to a maximum of 180 days.
 - ▶ SITA shall delete all data without further notice to Customer within 10 days following the end of the configured data retention period.
 - ▶ Data purging is automatically performed through a dedicated script as soon as the data retention period is reached. A job is launched on a daily basis and purges all the reports that expired.
 - ▶ A monitoring process is in place to ensure the purging process is properly triggered.

On-premises (SITA managed) hosted option:

- Data classification: different security requirements to be implemented depending on the data classification level; operational data and user data are segregated in different schemes at database level,
- Secured information exchange / data in transit encryption: information is exchanged securely using HTTPS with signed certificates, SFTP and MQ SSL; AES-256-GCM encryption mechanism is used,
- Data at rest encryption: database encryption is implemented; all personal data are encrypted; all passwords are encrypted with SHA-512.
- Information deletion: default data retention policies are implemented:
 - ▶ The retention period goes from 30 to 180 days, configurable based on Customer's requirements. Customer shall specify to SITA the data retention period up to a maximum of 180 days.
 - ▶ SITA shall delete all data without further notice to Customer within 10 days following the end of the configured data retention period.
 - ▶ Data purging is automatically performed through a dedicated script as soon as the data retention period is reached. A job is launched on a daily basis and purges all the reports that expired.
 - ▶ A monitoring process is in place to ensure the purging process is properly triggered.

References	
Related ISO/IEC 27002:2022 controls	05.12. Classification of information; 05.14. Information transfer; 08.10. Information deletion; 08.24. Use of cryptography
Related GDPR principles	Data minimization; Accuracy; Storage limitation; Integrity and confidentiality (security)

3.2.4. Access control and authentication

The below specific access control and authentication security measures are implemented for the Service:

SITA ATI Cloud hosted option:

- Authentication: password policy and complexity rules are documented and implemented:
 - ▶ A session timeout is in place; the application has a configuration for number of failed login attempts after which the account would be locked and only the administrator can reset; password expiration time is implemented (default is 60 days and can be configured),
- Protection of authentication information (default log-on process is implemented through ServiceDesk; authentication information is provided securely (through encrypted e-mail); passwords are encrypted using SHA512 and TLS 1.2 in transit,
- Restricted access to source code: access to source code is restricted based on the RBAC model implemented.
- Privileged Access Management: a PAM policy is implemented with a dedicated RBAC model for privilege access management:
 - ▶ A jump server with VPN is implemented; quarterly access rights review are performed; any account is disabled after 3 months if not used, and deleted after 12 months; all privileged actions are logged, including all privileged access and accounts provisioning and deprovisioning,
- Segregation of duties (SoD): segregation of duties is enforced on SITA side for administrative rights with 2 dedicated user roles (SupAdmin / Admin).

On-premises (SITA managed) hosted option:

- Authentication: password policy and complexity rules are documented and implemented:
 - ▶ A session timeout is in place; the application has a configuration for number of failed login attempts after which the account would be locked and only the administrator can reset,
- Protection of authentication information (default log-on process is implemented through ServiceDesk; authentication information is provided securely (through encrypted e-mail); passwords are encrypted using SHA512 and TLS 1.2 in transit,
- Restricted access to source code: access to source code is restricted based on the RBAC model implemented.
- Privileged Access Management: a PAM policy is implemented with a dedicated RBAC model for privilege access management:
 - ▶ A jump server with VPN is implemented; quarterly access rights review are performed; any account is disabled after 3 months if not used, and deleted after 12 months; all privileged actions are logged, including all privileged access and accounts provisioning and deprovisioning,
- Segregation of duties (SoD): segregation of duties is enforced on SITA side for administrative rights with 2 dedicated user roles (SupAdmin / Admin).

References	
Related ISO/IEC 27002:2022 controls	05.15. Access control; 05.17. Authentication information; 05.18. Access rights; 08.02. Privileged access rights; 08.03. Information access restriction; 08.04. Access to source code; 08.05. Secure authentication
Related GDPR principles	Integrity and confidentiality (security)

3.2.5. Application security

The below specific application security measures are implemented for the Service:

SITA ATI Cloud hosted option:

- Secure coding: a secure coding policy is documented and implemented:

- ▶ It is shared by CISO and followed by developers; some peer code reviews are performed within the development teams; automated SAST and DAST scans are launched; SCA analysis is performed for every new release; external developers follow the same secure coding policy and practices,
- Vulnerability scanning: a dedicated tool is used for vulnerability scanning against OWASP Top 10 at every release, on a quarterly basis,
- Penetration testing: penetration tests are launched every 6 months,
- API security: JSON Web Token (JWT) is implemented to secure authentication.

On-premises (SITA managed) hosted option:

- Secure coding: a secure coding policy is documented and implemented:
 - ▶ It is shared by CISO and followed by developers; some peer code reviews are performed within the development teams; automated SAST and DAST scans are launched; SCA analysis is performed for every new release; external developers follow the same secure coding policy and practices,
- Vulnerability scanning: a dedicated tool is used for vulnerability scanning against OWASP Top 10 at every release, on a quarterly basis,
- Penetration testing: penetration tests are performed every 6 months by SITA,
- API security: JSON Web Token (JWT) is implemented to secure authentication.

References	
Related ISO/IEC 27002:2022 controls	08.26. Application security requirements; 08.27. Secure system architecture and engineering principles
Related GDPR principles	Purpose limitation; Data minimization; Storage limitation

3.2.6. Service resilience

The below specific service resilience security measures are implemented for the Service:

SITA ATI Cloud hosted option:

- Data backup: data backup policy and processes are documented and implemented:
 - ▶ Daily scheduled backups (full backups) are launched; backups are stored in a dedicated storage on the cloud,
 - ▶ Data backup retention period depends on the Customers' requirements and is a maximum of 190 days (180 days of retention period with 10 additional days after the end of the retention period). Unless agreed otherwise, SITA shall delete all data backup without further notice to Customer.
- Data backup protection: backups are kept on a separate storage, segregated from production environment,
- Systems redundancy: all environments are replicated in an Active/Passive mode, with 15 to 30 minutes required for failover from Active to Passive,
- Disaster recovery plan: a standard DRP plan is in place, with the possibility to restore on an alternative environment.
- Disaster recovery testing: the DRP plan is tested on a yearly basis, including backup restoral tests,
- Crisis management: crisis management and major incidents processes are documented and implemented, with dedicated communication paths and escalation process.

On-premises (SITA managed) hosted option:

- Data backup: data backup policy and processes are documented and implemented:
 - ▶ Daily scheduled backups (full backups) are launched; backups are stored in a dedicated storage on the cloud,
 - ▶ Data backup retention period depends on the Customers' requirements and is a maximum of 190 days (180 days of retention period with 10 additional days after the end of the retention period). Unless agreed otherwise, SITA shall delete all data backup without further notice to Customer.
- Data backup protection: backups are kept on a separate server, segregated from production environment,

- Systems redundancy: all environments are replicated in an Active/Passive mode, with 15 to 30 minutes required for failover from Active to Passive,
- Disaster recovery plan: a standard DRP plan is in place, with the possibility to restore on an alternative environment.
- Disaster recovery testing: the DRP plan is tested on a yearly basis, including backup restoral tests,
- Crisis management: crisis management and major incidents processes are documented and implemented, with dedicated communication paths and escalation process.

References	
Related ISO/IEC 27002:2022 controls	08.13. Information backup; 08.14. Redundancy of information processing facilities
Related GDPR principles	Storage limitation; Integrity and confidentiality (security)

3.2.7. Cloud security (for SITA ATI Cloud hosted option only)

The below specific cloud security measures are implemented for the Service only if SITA ATI Cloud option is chosen by the customer:

- Datacenter access restriction: a cloud security policy is in place with strict restrictions implemented:
 - Access control lists that define what resources users are permitted to access; closed circuit video equipment coverage at the facility perimeter at all access control points; security camera monitoring; facility-based security video data recorded and retained for at least 90 days; datacenter access restricted with MFA; 24x7x365 onsite security staff providing additional protection against unauthorized entry; audit trails, log collection and monitoring; regular physical security independent audits.
- Cloud infrastructure redundancy: SITA ATI Cloud infrastructure is a highly redundant infrastructure including compute, network redundancy, storage and management plane redundancies, and ensuring resiliency and high availability.
- Cloud backup recovery testing: a dedicated solution is used to perform data backups of critical datacenter management systems and to monitor the backups for completion status; backups are stored offsite via cloud infrastructure managed through the dedicated solution; on a daily basis, a report evidencing the success or failure of each scheduled backup is generated; Recovery Time Objective (RTO) is set to 12 hours; Recovery Point Objective (RPO) is set to 24 hours.

References	
Related ISO/IEC 27002:2022 controls	05.23 Information security for use of cloud services; 08.14 Redundancy of information processing activities
Related GDPR principles	Integrity and confidentiality (security)