

ANNEXURE F-SCOPE OF WORK

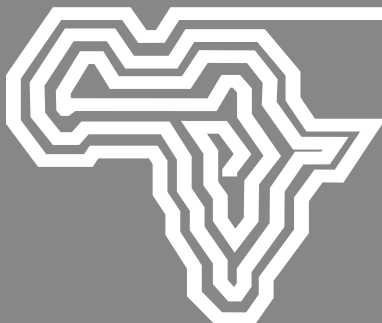
Project Name: Software Asset Management Managed Services

Operating Division: Transnet Group Information and Communications Technology



Transnet Software Asset Management Managed Service (SAMMS)

Version 2.0



Document Purpose	3
Glossary of Terms	4
1. Business problem, opportunity or need to be addressed.	5
2. Business goals/Objectives to be achieved.	5
3. Typical license / subscription types to be managed.	6
4. Business Processes	7
4.1 Current Business Processes	7
4.2 Future Business Processes	7
5. Scope	7
	9
5.1 Organizational scope	9
5.2 Scope Inclusion	10
5.3 Scope Exclusion	11
6. Key Assumptions	11
7. Expected Benefits	11
8. Critical Success Factors	11
9. Key Dependencies	13
10. Risks	13
11. Business and Functional Requirements	13
11.1 Software/device scanning/discovery within Transnet network	13
11.2 Software license Status lifecycle	13
11.3 Input parameters and configurations	16
11.4 Access rights and permissions	17
11.5 Integration with other systems	17
11.6 The reporting capabilities:	18
12. Non-Functional Requirements	18
12.1 Enterprise or Business Architecture	18
12.2 Training Requirements	18
12.3 Change Management	19
12.4 Test plan and Strategy	19
12.5 Communication Plan	19
12.6 IT Security	19
12.7 Implementation Approach	19

Business Requirements Specification Document

Document Purpose

Transnet seeks to procure an off the shelf Software Asset Management Managed Service (SAMMS) to be able to manage its software assets effectively. This document contains the baseline requirements to guide potential suppliers to be able to deliver a turnkey solution which meets the industry standard SAM maturity model. Transnet is currently at the very first level of this maturity scale.

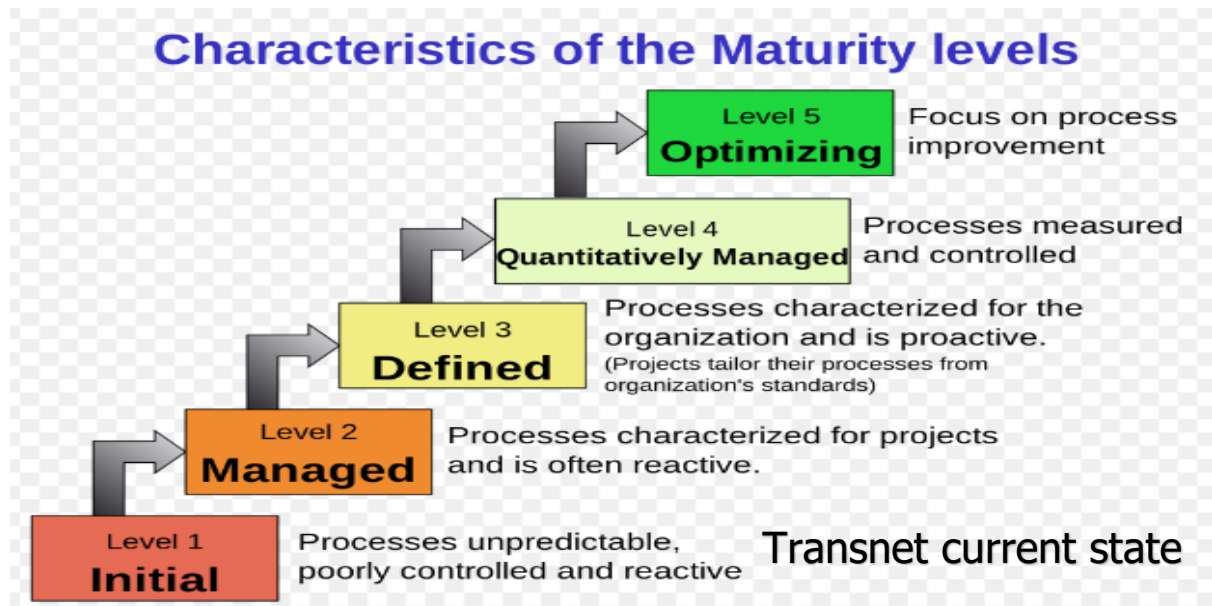


Diagram 1: Software Asset Management maturity model.

Glossary of Terms

The following acronyms, abbreviations and terms are used in this document.

Abbreviation/Term	Description
API	Application Programming Interface
BRS	Business Requirements Specification
CAPEX	Capital Expenditure
COTS	Commercially Off the Shelf
FMO	Future Mode of Operation
GICT	Group Information & Communications Technology
GLT	Group Leadership Team
GRMO	Group Results Management Office
ICT	Information & Communications Technology
IT	Information Technology
IMACD	Insert, Move, Add, Change, Delete
ITAM	Information Technology Asset Management
KPA	Key Performance Area
KPI	Key Performance Indicator
LAN	Local Area Network
OD	Operating Division
OLT	Operational Leadership Team
OPEX	Operating Expenditure
OS	Operating System
PFMA	Public Finance Management Act
PLP	Project Life Cycle Process
PMO	Project Management Office
RACI	Responsible, Accountable, Consulted, Informed
TACS	Tactical Assistance Centre Support
TCC	Transnet Corporate Centre
TE	Transnet Engineering
TFR	Transnet Freight Rail
TMS	Telephone Management System
TNPA	Transnet National Ports Authority
TP	Transnet Properties
TPL	Transnet Pipelines
TPT	Transnet Port Terminals
VOC	Voice of the Customer
WAN	Wide Area Network
SSU	Strategic Support Unit
SME	Subject Matter Expert
BYOD	Bring Your Own Device
OT	Operational Technology – Services running on dedicated platforms
WIFI	Wireless fidelity
POPIA	Protection of Private Information Act
LICENSES	Means software perpetual licenses or subscriptions.
RBAC	Role Base Access Control

1. Business problem, opportunity or need to be addressed.

Transnet lacks an enterprise-wide solution for managing software licenses and a means of effectively managing the following:

- Over-allocation of software licenses.
- Under-allocation of software licenses.
- Expiration of software licenses.
- Installation of unauthorized software.
- Duplication of licenses across OD's
- Software running in "private networks."
- Software running on any Transnet managed device.

The financial impact that has occurred due to inadequate managing of software licenses is as follows:

- Fines imposed on Transnet by major suppliers such as Microsoft, SAP, IBM and Oracle due non-compliance with contractual agreements.
- Non-compliance with Public Finance Management Act (PFMA) due to insufficient cost mitigation procedures being in place.

2. Business goals/Objectives to be achieved.

Software asset management Managed Services (SAMMS) from expert providers is required to manage the software, SaaS and cloud software assets of Transnet. They need to include skills, processes, technologies and governance to transform and run the SAM discipline on behalf of Transnet. This includes but is not limited to the implementation of a Software Asset Management solution that will provide Transnet with a platform to monitor, control, and manage the installation, deployment, and usage of software products across Transnet.

Key Objectives:

- Improve the management of all IT software components and software licenses or subscriptions.
- Improve the management of unauthorized software even if not licensed. e.g., certain open-source solutions not permitted. Also, certain solutions (e.g., hacking solutions) should only be authorized to certain individuals.
- More accurately oversee IT purchase/utilization contracts, user licenses / subscriptions, and leases.
- Routinely identify and pro-actively meet upgrade and maintenance requirements.
- Facilitate regulatory compliance and assist Transnet in negotiating best value license and renewal agreements.

- Reduce costs associated with duplication of software licenses and paying for licenses that are not utilized.

3. Typical license / subscription types to be managed.

Table A: License types

Licensing Types	Description
Capacity-Based Licensing	Software licensing is based on the power (<i>CPU, cores, sockets</i>) of the hardware and/or groups of hardware.
Client Access Licensing	This requires that any users and/or devices connecting directly or indirectly to a server to be licensed. Often a declarative secondary metric. <i>Examples: Windows Server + CALs Licensing, Oracle Named User Plus Licensing</i>
Concurrent Licensing	Also referred to as “floating licenses,” this is a model in which simultaneous users access the software running on a server within a network within a threshold. Often used for engineering and specialty applications.
Consumption Licensing	Software subscription in which an advance fee is consumed for one or more services, drawn down on the prepaid fee. Examples are Digital Licensing based on the number of signatures in document signature software, and a subscription fee which can be consumed for a variety of services on the vendor’s platform.
Device Licensing	Licensing type (<i>aka node-locked</i>) in which the software is licensed per device.
Device Subscriptions	Software subscription in which the software is licensed per machine and calculated on usage.
Indirect or Digital Access	Access to software or systems from humans or nonhumans by way of APIs, devices, bots, IoT sensors and so on.
User-Based Licensing	Software is allocated and licensed to a named user.
User Subscriptions	Software subscriptions are allocated to a named user and calculated on usage.

Sub capacity Licensing	Software is licensed for less than the full capacity of the server or servers. This is to reduce licensing costs for virtualization technologies.
Note: This is not an exhaustive list of all software licensing types in use in Transnet.	

4. Business Processes

4.1 Current Business Processes

The business processes for defining software requirements and acquiring licenses through a procurement process, including lifecycle management, are not standardized across the organization. Each operating division manages and controls its own software requirements with limited control over licensable transversal products or services. Limited usage information is available across all the 8 Transnet operational divisions. This results in unwanted audit findings and settlement processes. Transnet does not have other software discovery tools than partial SCCM/Intune in place. Partially managed by a third party as well.

4.2 Future Business Processes

The following lifecycle is based on industry best practice for SAM Solutions:

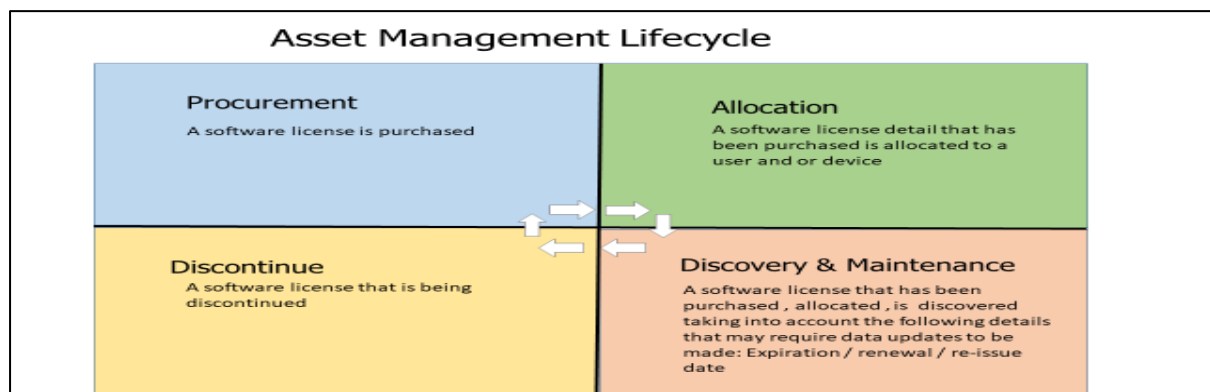


Figure 1: Software Life Cycle Management Best Business Practice as per Gartner.

5. Scope

Solution Conceptual View, SAMMS to cover the SAM services referenced below in **Diagram 2**. The SAMMS must ensure the best possible provider delivers the unique functionality required to deliver the best possible results on for example, SAP, Oracle, IBM, Microsoft, etc. which needs specialized tools to discover/manage.

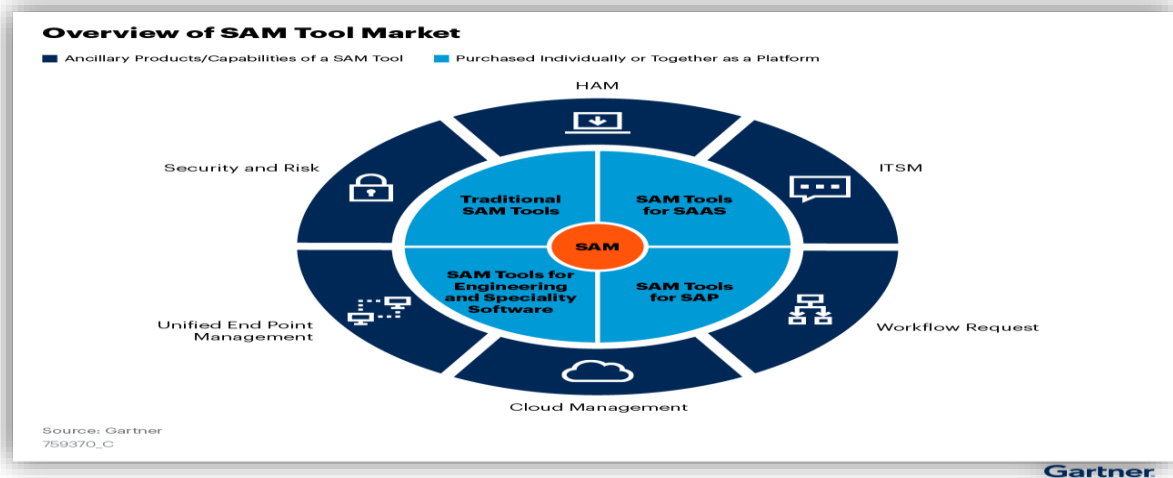
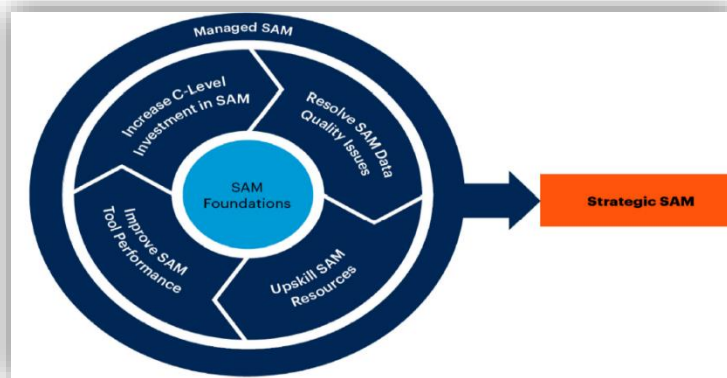
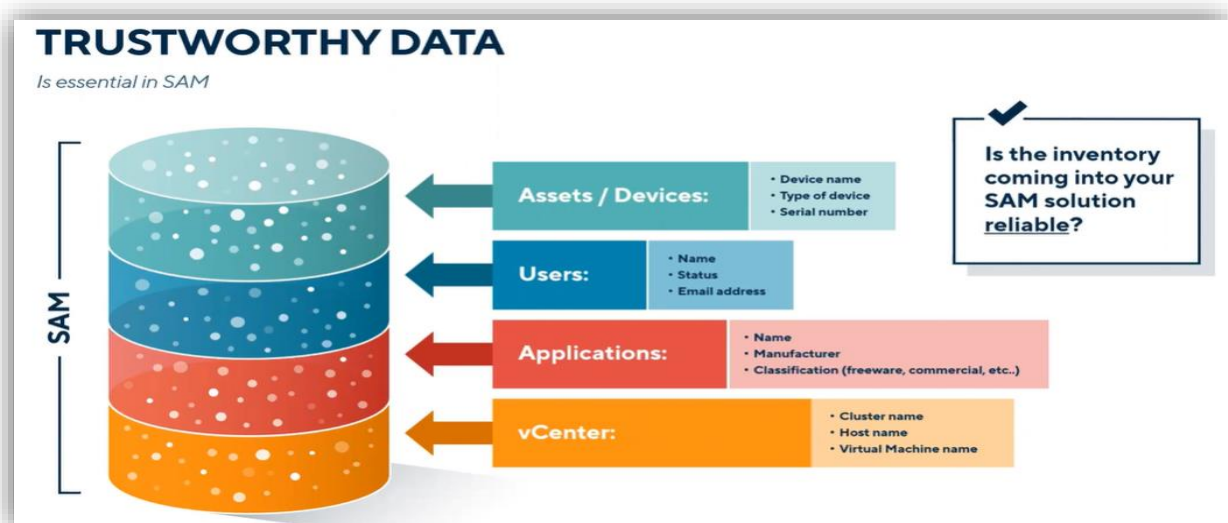
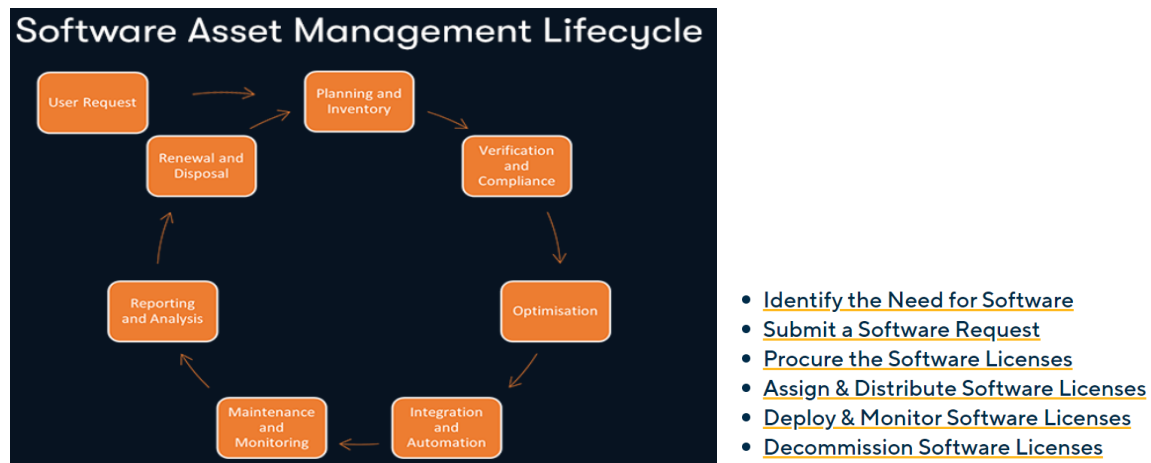
Diagram 2: Overview of SAM tool services as presented by Gartner.**Diagram 3:** SAMMS provider to deliver the required strategic SAM solution for the Transnet needs as presented by Gartner.**Diagram 4:** Discovery of data is paramount.

Diagram 5: The basic requirements of the software asset lifecycle:

5.1 Organizational scope

- All devices/user's accessing the Transnet network (including BYOD / WIFI) – Approximately 39,000 users and 50,000 devices.
- Approximately 302 different applications excluding OT environment.
- Seven standalone SAP systems [one per OD], only the HR environment is shared with one HCM system at Transnet Group (busy with S/4Hana migration with the ultimate goal to consolidate all SAP services in the SAP RISE program).
- One Microsoft 365 tenant for all Transnet users with RBAC for 8 different ODs.
- One IBM ILMT platform for all Transnet IBM deployments. (Sub-capacity requirement)
- Any functional area responsible for purchasing, deploying, supporting, utilizing, and installing of software licenses within Transnet incorporating the following OD's:
 - Transnet Freight Rail (TFRIC)
 - Transnet Freight Rail Operations Company (TFROC)
 - Transnet Corporate Centre
 - Transnet National Ports Authority
 - Transnet Pipelines
 - Transnet Port Terminal
 - Transnet Property
 - Transnet Engineering

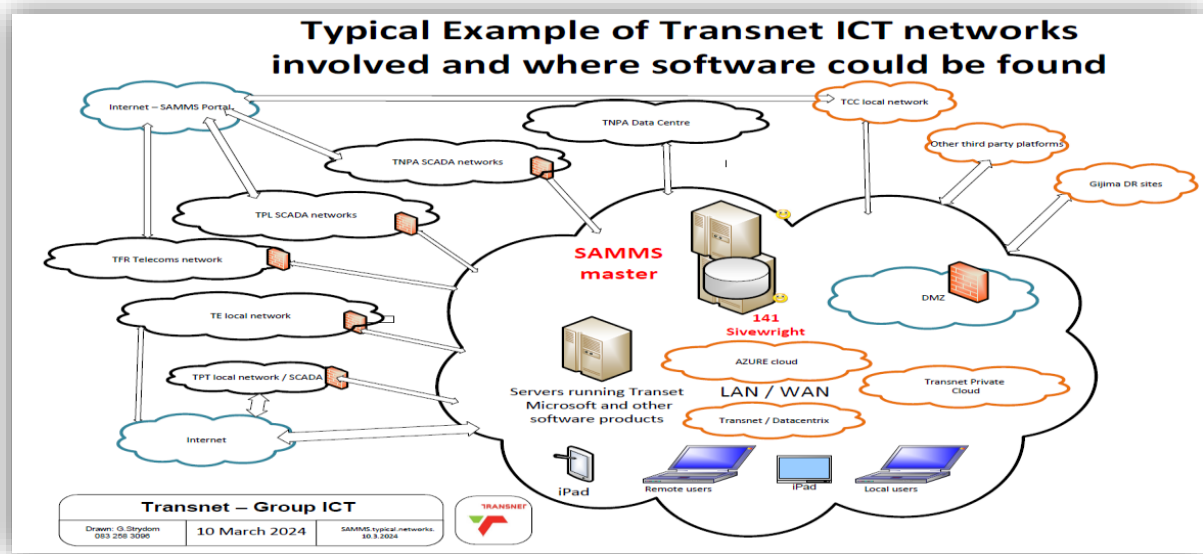


Diagram 5: Typical Transnet network configuration.

5.2 Scope Inclusion

- Software / device scanning within Transnet network, discovery and update of the Transnet catalog of software products in use on all the Transnet network access channels e.g. WAN / LAN / VPN / Wireless.
- Software license status using a software management lifecycle, the following statuses are to be considered:
 - Procurement of software license – Purchasing and registration of software licenses.
 - Allocation of software license – Assigning of a software license to a user or device.
 - Discovery / Auto discovery and maintenance of software license - the ability to find new, moved or changed assets with/without dependence of an agent.
 - Discontinuing of software license
 - Discontinue utilization of software licenses.
- Input parameters and configurations using SAMMS solution.
- Integrate and synchronize with other databases or systems such as SQL, Oracle, Hana, DB2, SAAS, etc.
- Access rights and permissions - security levels for gaining access to software license data and making changes to software / device data device / software.
- Reporting - functionality to identify, track, monitor device and software licenses and the results to be made available for custom Power Bi reporting.
- Workflow and Automation - The ability to automate SAMMS processes.
- Contracts Management - The ability to manage, prioritize and comply with Transnet's software contracts and agreements.
- Training for all relevant role-players.

- Detailed reporting, Group based and per OD.
- MSA to be defined where SLAs will be stipulated.

5.3 Scope Exclusion

- Issuing of security certificate directly instead through Vendors
- Viruses and spyware identification, but the system must indicate a change in the device profile if there were any modification on the device profile.
- Scanning USB / External hard drives / CD ROMs linked to a device within Transnet domain.

6. Key Assumptions

- There is Executive support of the initiative since it has been deemed as a strategic and high priority project within GICT.
- The procurement, allocation, maintenance, and discontinuation of licenses will be managed through the policies/procedures facilitated by GICT on guidance of the successful supplier with their best practice principles.
- Any updates to legal disclaimers are to be done through SAMMS solution Project.

7. Expected Benefits

Benefit Name	Description of the benefit
Improved visibility of the IT spends	Establish core business intelligence which will accurately calculate and potentially support cross charging of IT spend across the business knowledge on where and how much licenses are in use.
Improved management of IT software assets	<ul style="list-style-type: none"> • Discovery • License and Maintenance Renewals • Re-harvesting and Reuse • Contract Renegotiations • Software Audit Compliance • Reduction of unauthorized software
Improved compliance	Reinforcement of software Asset Management Policies and Processes
Cost avoidance	Avoid investment in excess / duplicate licenses including maintenance and support costs on products which does not exist.
More liability control	Government regulations that require strict standards of IT governance and controls can be achieve compliance via SAMMS solution
Improve employee satisfaction	SAMMS solution will identify the right solutions need for an employee profile.
Flexibility for the future	Provides scalability and future insight to enable planning for future needs

Table B: Expected benefits.

8. Critical Success Factors

- **Strategy**

- Mitigation of risks associated with inadequate software management: audit, image security, alignment of corporate and technological strategy.
- Exact knowledge of the location, cost, and obsolescence of software assets.
- Allow Transnet to verify the software landscape against a Transnet whitelist to identify undeclared or unauthorized software.
- **Processes**
 - Implement corporate processes to manage the software within the organization with monitoring of the software licenses in use.
 - Cost savings associated with user accounts locked or outdated / obsolete software for which there is no need to continue paying maintenance.
- **People**
 - Define roles and responsibilities associated with the asset management at all levels, to perform activities in a coordinated and centralized way. RBAC.
 - Having employees with knowledge about licensing models and terms and conditions of use and installation of software.
 - Each of the 8 operational divisions must be able to manage their software deployments with overarching control from a Transnet group point of view.
- **Technology**
 - Continuous discovery e.g., immediate alarm on any software change state such as add, removed or modification on software deployment.
 - Remote management e.g., mobile access to the SAMMS.
 - Installation or adaptation of solutions for the identification of software installed on both user machines and servers, identifying other features that may impact on the licensing model (capacity of the machine, OS version, existence of virtual machines etc).
 - Installation of solutions that facilitate the management of the license's reconciliation in a centralized environment.
 - Standalone devices to capture the required software data in private LAN/WAN environments with the ability to update the master as and when the device is back on the general Transnet WAN/LAN.
- **Data**
 - Detailed inventory of the software installed, identifying the owner, license key, custodian, etc.
 - Inventory of software license agreements, identifying quantity, type, owner, location of the contract, etc.
 - Details of the software packages, specifying terms and conditions of use and installation of the free versions of products included.
 - Continuous comparison between purchased and discovered products.
- **Reports**
 - Detailed reporting on all software asset management requirements.
 - Each OD must only be allowed to see and manage their own software deployments with the overview functionality from the Transnet Group facilities. All reports need to follow the allowed access structures.
 - In-app reporting will be allowed to avoid the development of reports from scratch. In other words, any built-in reports can be generated by the app, but Power BI should be available for any custom reports.

9. Key Dependencies

- All the required licenses / user information will be made available by the users/owners involved, and the ODs will allow access to their environments to deploy discovering solutions as and when required.
- All software license data will be sent to a centralized data storage e.g Microsoft OneDrive
- Procedures and policies, to be adhered to by all, must be defined and stored in the same centralized storage space.
- Software license contract and financial information will be uploaded and registered on SAMMS Solution according Transnet policies, including POPIA regulations.

10. Risks

- More financial losses to Transnet if the solution is not speedily implemented.
- All the required supporting documentation is not readily available.
- Access to all the Transnet networks is not obtained in time.
- Issues related to national security data (key-points) might delay the deployment.

11. Business and Functional Requirements

11.1 Software/device scanning/discovery within Transnet network

Req ID	Requirement	Priority
11.1.1.	Collection of software license related data on all devices using Transnet networks (Registered Transnet / BYOD / WIFI). Mobile solution to be included to capture data in isolated networks and to transfer data to a central database.	H
11.1.2.	Link the following details from Microsoft Entra ID about user with results after scanning: <ul style="list-style-type: none"> • SAP Number • Full names • Organizational unit or OD • Device Name 	H
11.1.3.	Distinguishing Transnet devices using Transnet software licenses against non-Transnet devices using Transnet licenses	H
11.1.4.	Automatically scan devices of first-time users on the Transnet network	H

11.2 Software license Status lifecycle

	Requirement	Priority
11.2.1.	Procurement of license:	

	Requirement	Priority
	Registration of new software license that has been purchased	H
11.2.2.	Procurement of license: Every purchased software license must have a product owner within Transnet domain	H
11.2.3.	Procurement of license: A notification to be sent or an alert made to Group ICT and Architecture stakeholders every time new software is registered	H
11.2.4.	Procurement of license: All software licensed to be classified (functionality / features) by Architecture	H
11.2.5.	Procurement of license: A full software license contract to be attached by product owner	H
11.2.6.	Procurement of license: Costs associated with the acquisition of software license to be captured by Product Owner	H
11.2.7.	Procurement of license: Bulk registration of software licenses	H
11.2.8.	Procurement of license: Individual registration of software licenses	H
11.2.9.	Procurement of license: Capturing of various contractual agreement types - per user, per device, per OD, per Group and Date when Licenses were procured etc.	H
	Requirement	Priority
11.2.10.	Allocation of software licenses: Every time software is being allocated it must be linked to at least the following data attributes: <ul style="list-style-type: none"> • Device name (Mandatory) • Username • User Unique Number (Mandatory) • Organizational structure (Mandatory) • Date Allocated • Date De-allocated 	H
11.2.11.	Allocation of software licenses: Allocation of software license that has NOT been approved by relevant product owners must not be allowed	H
11.2.12.	Allocation of software licenses:	H

	Bulk allocation of licenses to an OD or product owner	
11.2.13.	Allocation of software licenses: Individual allocation of licenses to specific individuals	H
11.2.14.	Allocation of software licenses: During bulk/ individual allocation of licenses, the system must allocate licenses that are available and approved for allocation by Product Owner to user/s	H
11.2.15.	Allocation of software licenses: Only users that have Transnet Entra ID credentials can be allocated with a software license	H
	Requirements	Priority
11.2.16.	Discovery of software licenses: Search and find software and compare discovered information against licenses for each device within Transnet networks and populate accessible databases after device scanning has occurred	H
11.2.17.	Discovery of software licenses: Display at least the following data related to software license: <ul style="list-style-type: none"> • Device name • User of device • Status of software license • Organizational area • The last usage of license • Classification (feature / functionality) of software 	H
11.2.18.	Maintenance of software license: The following actions (in bulk and or individual) must be made available for product owner or business owner: <ul style="list-style-type: none"> • Reissue - A software license that has been allocated to a device/user/Organizational structure (OD) is changed to another. • Renew - An existing software license being renewed to prevent the license from expiring. • Removal of Software 	H

11.2.19.	Maintenance of software license: The following details are to be viewable and searchable (read only) <ul style="list-style-type: none"> • Device name • User of device • Status of software license 	H
----------	--	---

	<ul style="list-style-type: none"> Organizational area The last usage of license Not allocated – Installed without permission. Not in use – Allocated but not in use 	
	Requirement	Priority
11.2.20.	Discontinue of software license: Transnet approved software that are on or have passed the expiration date	H
11.2.21.	Discontinue of software license: Transnet none approved application software on a device within Transnet network domain	H
11.2.22.	Discontinue of software license: Software trial versions that have expired	H
11.2.23.	Discontinue of software license: Illegal software such as non-business-related video or audio files on devices	H
11.2.24.	Discontinue of software license: Over allocated software's to be decommissioned	H
11.2.25.	Discontinue of software license: Allocated software that are not approved to be allocated by Product owner	H
11.2.26.	Discontinue of software license: Product owner being able to remotely remove discontinued software.	H
11.2.27.	Discontinue of software license: Automatically remove discontinued software	H
11.2.28.	Discontinue of software license: Prohibit software and block executables by prohibiting users from installing unauthorized software	H

11.3 Input parameters and configurations

	Requirements	Priority
11.3.1.	Manual exporting of Power Bi reports to PDF/Excel/etc. data formats	H
11.3.2.	Automation of a scheduler for data to be collected from all devices within Transnet domain	H
11.3.3.	Classifications of software products capabilities and features	H
11.3.4.	Configurations of workflows for:	H

	<ul style="list-style-type: none"> • Procurement of software licenses. • Allocation of software licenses. • Discontinue of software licenses. 	
11.3.5.	Automated reporting / notifications on audited license status to be sent to specific stakeholders. Audit trails to be kept regarding the notifications.	H
11.3.6.	License sub-capacity classification and management (including container licensing)	H

11.4 Access rights and permissions

	Requirement	Priority
11.4.1.	Only Product owner's or Business owners are to be allowed to change software license statuses	H
11.4.2.	Access rights to the SAM solution be granted by SAM solution Product owner	H
11.4.3.	<p>Access to software license information is to be based on Organization structure.</p> <p>(e.g., TPL users must only view TPL related data)</p> <p>Users must be able to extract detail reports on their area of responsibility e.g., each OD must be able to extract selected reports which will enable them to manage and maintain their assets and the system owner must be able to zoom into any area covered with the selected solution to be ultimately in control of the software license utilization.</p>	H

11.5 Integration with other systems

	Requirement	Priority
11.5.1.	API that can be used for receiving or sending data, at minimal, and can integrate with SAP, Power BI , Oracle ,IBM and Microsoft related technologies	H
11.5.2.	Centralizing of software license related data	H
11.5.3.	Regular software dynamic updates on SAM solution database with latest licensing models	H

11.6 The reporting capabilities:

	Requirement	Priority
11.6.1.	Generate a report that compares the total number licenses issues versus licenses being used	H
11.6.2.	Lists licenses that are about to expire within a user defined timeframe	H
11.6.3.	Count the total number of procured software licenses, total number of allocated licenses, total number of decommissioned licenses	H
11.6.4.	Allocated software that are not being used for a period of over 3 months	H
11.6.5.	Costs associated with licensing software	H
11.6.6.	All unlicensed software on a device / group / linked to a specific user	H
11.6.7.	License statuses per software license supplier, at minimal, the following suppliers: <ul style="list-style-type: none"> • SAP, Microsoft, Oracle, IBM, Adobe, etc. • License management will include Operating System, and Commercially Off the Shelf (COTS) software. • Unix Servers and software applications, Operating System & Databases • SaaS- Cloud based licensing/subscription 	H

12. Non-Functional Requirements**12.1 Enterprise or Business Architecture**

- Define and determine the total number of devices (laptops, desktops, servers and other devices) based on Landscape.
- Define and determine software that must have alerts considering the current landscape and future landscape.
- Define and determine classifications of software.
- Define and determine data management strategy.

12.2 Training Requirements

At least one SAM champion per OD will be trained (train the trainer). The dates and venue for training to be communicated when available. Training costs to be included in the project.

A specific Transnet SAMMS champion will be nominated, and the required level of training needs to be provided to assist with the specific function.

12.3 Change Management

Group ICT in conjunction with the successful SAMMS will circulate Global communication for all ODs to inform all employees of the central software license control function which will be introduced with an official in-service date.

12.4 Test plan and Strategy

- Suppliers are to demonstrate their SAM Solutions against Business and Functional Requirements stipulated on this BRS.
- OD champions are to be provided with an opportunity to conduct User Acceptance Testing.

12.5 Communication Plan

Following the change management process general communication will be distributed to all Transnet employees to explain the central software license management function with more focused communication to the actual users of the SAM solution.

12.6 IT Security

- Provide access to firewall or device access where necessary for SAM Solution
- Update the virus database or registry for cases wherein the SAM Solution is interpreted as a virus / spyware / threat.

12.7 Implementation Approach

Key aspects of implementing SAM managed services:

1. Assessment and Preparation:

- **Understand the Context:** Begin by assessing the organization's existing software assets, licensing agreements, and usage patterns.
- **Define Objectives:** Clearly articulate the goals of SAM implementation. Are you aiming for cost optimization, compliance, or risk reduction?
- **Stakeholder Engagement:** Involve relevant stakeholders, including IT, procurement, legal, and business units.

2. Setting the Target and Planning:

- **Desired State Definition:** Define the desired SAM maturity level. Consider factors like process automation, data accuracy, and integration with other IT processes.
- **Roadmap Creation:** Develop a phased roadmap that outlines specific activities, milestones, and timelines.
- **Tool Selection:** Choose appropriate SAM tools that align with your organization's needs and budget.

3. Implementation and Execution:

- **Process Alignment:** Align SAM practices with existing IT processes (e.g., IT service management, procurement).
- **Data Collection and Normalization:** Gather accurate data on software installations, licenses, entitlements, and usage.
- **License Reconciliation:** Compare installed software against purchased licenses to identify gaps or overages.
- **Risk Mitigation:** Implement controls to address compliance risks, security vulnerabilities, and unauthorized software.
- **Automation:** Leverage automation to streamline data collection, license tracking, and reporting.

4. **Governance and Continuous Improvement:**

- **Policy Development:** Establish SAM policies, guidelines, and roles/responsibilities.
- **Regular Audits:** Conduct periodic audits to ensure ongoing compliance.
- **Training and Awareness:** Educate employees about SAM practices and their role in maintaining compliance.
- **Feedback Loop:** Continuously assess and adjust the SAM program based on feedback and changing business needs.