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Preparation, Review & Approval of the Document

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|------------------------------------|---|
| Prepared by: | GovNets Division, Thimphu <ol style="list-style-type: none"> 1. Karma, Chief ICTO 2. Pema Dhendup, Dy.chief ICTO 3. Karma Jamyang, Dy.Chief ICTO 4. Karma Tenzin, ICT analyst 5. Rinchen Khando, Executive Engineer 6. Tashi Delek, ICTO 7. Sonam Tshering, ICTO 8. Mohan Kumar Pradhan, Sr.ICTA 9. Tshering Wangchuk, Sr.ICTA 10. Jigme Choda, Sr.ICTA 11. Sonam Dorji, ICT.TA II 12. Dendup Pema, ICT.TA II 13. Ugyen Tshomo, AICTO 14. Sonam Choden, AICTO 15. Tshering Dekar, AICTO 16. Sonam Choki, AICTO |
| Reviewed & Approved by: | GovTech Agency, GovNets Division, Thimphu. |

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Document Version History

| Version | Date | Author | Description of Change |
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Terminology

| Term | Description |
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| PartKeepr | Internal Inventory system for maintaining the details of network assets. |
| GIMS (Government Inventory Management System) | Inventory system for maintaining the details of Government assets. |
| CWDM (Course Wavelength Division Multiplexing) | Used in WAN as last mile connections |
| DWDM (Dense Wavelength Division Multiplexing) | Used in Core Network |
| OTDR(Optical Time Domain Reflectometer) | Fiber optic instrument used to characterize, troubleshoot and maintain optical telecommunication networks |
| PRR | Procurement Rules and Regulation |
| Asset Owner | Person or agency or the assignee who has been assigned the asset to act as the custodian of the asset issued. It, in no other interpretation, refers to the lawful ownership of the asset. The Property right and ownership thereof shall always rest with the RGoB. |



1. Introduction

1.1 Purpose

To establish a systematic approach for the efficient and effective management of network-related assets by ensuring accurate tracking, timely maintenance, and proper disposal of obsolete network assets.

1.2 Scope

The SOP applies to all network devices such as routers, switches, firewalls, access points, CWDM, DWDM, fiber, and other networking devices and accessories, and software such as monitoring and management systems, and configuration management tools used within the GovNet division as well as other Government agencies.

It includes timely procurement, installation, tracking, maintenance, upgradations, replacement, and disposal of all assets.

2. Roles and responsibilities

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| 1. Network Management Team: | <ol style="list-style-type: none">1. Plan the asset acquisition through proper resource gathering including input from other relevant agencies. The team shall also identify resource gaps and the need for tech refresh. Replenishment of spares shall also constitute part of the resource-gathering process.2. Developing technical specifications to ensure resources are judiciously utilized.3. Implement the assets acquired to ensure proper configuration and management of the assets.4. Coordinate with the procurement section to procure the required and identified assets in compliance with the procurement norms.5. Timely review for revision and replacement of assets as outlined in this SOP document.6. Timely and proper disposal of obsolete assets in compliance with the procurement norms.7. Obtain necessary approval from the concerned authority and procure the assets |
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| 2. Procurement Officer : | <ol style="list-style-type: none">1. Shall advise and guide the procurement process in compliance with the RGoB's latest Procurement Rules and Regulation(PRR).2. Shall also closely work with the other teams throughout the asset lifecycle |
| 3. Network Engineers: | <ol style="list-style-type: none">1. Responsible for performing the initial network configuration, ensuring proper functionality and security, and conducting testing before deployment in both the staging and production environments. |
| 4. Network Field Engineer: | <ol style="list-style-type: none">1. Responsible for the operation and maintenance of government networks in coordination with the Network Management Team to ensure reliable network connectivity. |
| 5. Asset Owner: | <ol style="list-style-type: none">1. Shall periodically check for any faults, malfunctions, and performance degrades. Accordingly, notify and seek interventions for corrective measures. |

2. Asset Identification and Classification

3.1.1 Asset Inventory

- Maintain the details of all assets in the GovNets Inventory System (GIMS/PartKeeper) including the following details:
 1. Name of the asset
 2. Asset Type
 3. Serial or Model Number
 4. Asset Purchase Date
 5. Owner
 6. Physical Location
 7. Asset Value

3.1.2 Asset classification

The identified assets shall be classified as shown below:



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Government Technology (GovTech) Agency
Royal Government of Bhutan



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| Asset Type | Description |
|---------------------------------|---|
| Hardware/Physical Device | It is a device that contributes to the network infrastructure, including routers, switches, firewalls, optical fiber cables/patch cords, optical transceivers, UTP cables, splicing machines, OTDR, Wireless Access Points, racks, other networking devices, and accessories, |
| Software asset | Any application/tools including its licenses, used to monitor and manage network infrastructure. |
| Paper Asset | Network diagrams, device configuration documentation, IP address allocation details, Tender documentation, Asset inventory documentation, and standard operating procedures - includes soft copy as well. |

Service asset management SOP , GovNets division, GovTech Agency



4. Asset Management Process

4.1 Asset Management Process Lifecycle



Fig1.0 Lifecycle of assets

4.2 Asset Planning and Procurement

- Collaborate with stakeholders to determine assets needed, ensuring whether they align with the organizational goals and the service catalog.
- The asset planning should be completed a month prior to the submission of a budget proposal to the management aligning with the overall organizational annual work plan. Plan and prepare a cost-benefit analysis for the proposed assets.



- c. The procurement of assets shall be carried out adhering to the RGoB's procurement rules and regulations.
- d. Carry out testing and check the requirements as per the required technical specifications including compatibility of the new assets with existing hardware, software, and network protocol.
- e. All assets must be registered in all relevant systems. *PartKeepr* for internal use while also maintaining it with the *Government Inventory Management System*.
- f. Underpinning contracts, licenses, and other intangible assets must also be registered and maintained.

4.3 Asset Installation

- a. Identify the sites and collect detailed requirements of the assets.
- b. Mobilize adequate resources and facilities to ensure timely commissioning of network equipment.
- c. Check the compatibility and compliance with the existing network equipment
- d. Follow appropriate steps and procedures to install and configure the assets
- e. Ensure to document proper site installation reports.
- f. Maintain the proper inventory of the installed assets
- g. Prepare and submit complete documentation along with the installation reports for knowledge management.

4.4 Asset Monitoring and Tracking

- a. Identify the type of asset including the serial number, purchase date, vendor, and warranty information.
- b. Document the individual to whom the asset is issued or assigned, along with the asset's location, serial number, contact details, and intended usage.
- c. Use a system (*PartKeepr*) to track assets effectively.
- d. Monitor the health of the asset using Network Monitoring tools (Network monitoring system, *SmokePing*) and inform the concerned authority.
- e. Timely monitoring of passive network equipment.
- f. Track license expiry date for timely renewal. Asset owners shall arrange a system or a mechanism to prompt alerts at least three months before the license expiry.
- g. Track contract to intervene for timely renewal and necessary arrangements to avoid service disruption
- h. Tag or mark obsolete/damaged assets from the tracking system (*PartKeepr*) for disposal or maintenance.
- i. Update the system (*PartKeepr*) to record changes accurately, ensuring data integrity.



- j. Track and monitor the assets throughout its life cycle.

4.5 Asset Maintenance.

1. Schedule Maintenance

- Set a specific period marking it in the annual calendar work plan to dedicate periodic maintenance of all assets. The schedule shall be timed during the lean hours of service operation to reduce service downtime.
- The schedule shall be notified in advance to all stakeholders to allow adequate time for preparation of the maintenance exercise. The responsibilities to further notify respective service users shall solely rest with the service owners.
- Backup of all configurations of devices shall be maintained offline to enable rollback possibility in the event of maintenance failure. In addition, plan B must be chalked out along with the maintenance plan of action.
- Assets marked for repair noted during the maintenance and/or *Monitoring & Tracking* process shall be processed for repair to the identified vendor. The concerned asset owner shall also check if the assets are covered under the warranty.
- Carry out testing of the maintenance actions against the agreed checklist to ensure conformity with the annual maintenance plan. The checklist shall be worked out in consultation with the asset owners and the domain experts.
- All assets shall be reviewed. The list of assets requiring upgrades and replacement shall be identified along with its asset tags and marked for either upgrade or replacement accordingly.
- All activities carried out as part of annual maintenance shall be documented for future reference.

2. Adhoc Maintenance

- In the event of ad-hoc maintenance where the request emerges owing to the urgency from incident-handling and problem management SOP, the processes defined in the Problem Management SOP shall supersede.
- However, the assets undergoing maintenance shall be tagged in the asset inventory system.

4.6 Asset Upgradations & Replacement

- Evaluate assets for potential upgrades based on performance, beyond repair, obsolescence, or technological advancements.
- Discuss with the Network team to assess functional requirements for upgrades.
- Plan and prepare a cost-benefit analysis for the proposed upgrade in conjunction with the plan and procurement process.



- d. Prior to implementation of upgrades, it is mandatory to backup all configurations and shall maintain offline to enable rollback possibility in the event of upgradation failure.
- e. Set a specific schedule for upgradation and inform the organization that could potentially be affected by implementing the upgrade through the appropriate communication channels.
- f. All activities carried out as part of the upgrade shall be documented for future reference.
- g. Tag the old asset for disposal and assign the new asset to the relevant department or user.
- h. Maintain the details of replacement devices in the Partkeepr system
- i. Follow disposal procedures for decommissioned assets

4.7 Asset Disposal

- a. Assets eligible for disposal must be identified from the system (Partkeepr) as a part of the end-of-life or the assets that are tagged from asset maintenance as non-repairable assets.
- b. The disposal of the asset will be carried out in accordance with the Procurement Rules and Regulations (PRR) and as per the e-Waste Guideline of GovTech.
- c. Data residing needs to be destroyed before disposing of the assets.
- d. The network device is physically removed from service. This may involve disconnecting cables, powering down the device, and physically removing it from the network.
- e. Updation of Asset status in the system.
- f. The list of disposed assets needs to be submitted during the planning and procurement of the asset for replenishment of exhausted stock.

Collection and segregation of e-waste should be done by relevant divisions/agencies