

UNIVERSITY OF DAR ES SALAAM



**PROPOSED
ICT ASSETS DISPOSAL GUIDELINES**

March, 2020

Contents

List of Abbreviations and Acronyms	3
1 Introduction	4
1.1 Purpose.....	4
1.2 Rationale and Scope	4
1.3 Audience.....	5
1.4 Definitions.....	5
2 Background	6
3 ICT Product Lifecycle and Services Management	7
3.1 ICT Resource Lifecycle Requirements in Relation to Management and Disposal	7
3.2 General Considerations when Disposing of ICT Assets	7
3.3 The Current Practice of Disposing of Assets and Facilities at UDSM.....	8
3.4 When to Use the ICT Assets Disposal Guidelines.....	9
4 Recommended Procedures and Guidelines for ICT Assets Disposal	9
4.1 Disposal Procedures.....	9
4.2 The Procedures for Disposal of ICT Equipment at Unit Level.....	9
4.2.1 Guideline for establishing Equipment Disposal Justifications.....	11
4.2.2 Guideline for carrying out the Pre-Disposal Treatment	12
4.2.3 Guideline for carrying out Technical and Economical Assessment.....	13
4.2.4 Guidelines on ICT Asset Disposal Strategies and needed Authorisations	14
4.3 Roles and Responsibilities during the Execution of the Disposal Procedures	14
4.4 Review of the Recommended ICT Assets Disposal Procedures	15
4.5 ICT Assets Disposal Supporting Tools.....	15

List of Abbreviations and Acronyms

DES: Directorate of Estates Services

DOF: Directorate of Finance

DVC: Deputy Vice Chancellor

ICT: Information and Communications Technologies

MoF: Ministry responsible for Finance

PCs: Personal Computers

PMU: Procurement Management Unit

RAM: Random Access Memory

UDSM: University of Dar es Salaam

1 Introduction

1.1 Purpose

This document provides the guidelines for proper disposal of ICT assets and facilities at the University of Dar es Salaam. As a guide, it contains information, advice and procedures which must be considered and followed across the University when ICT assets and facilities need to be disposed of.

The document is meant to address the policy objectives and requirements of the **UDSM's ICT Policy 2006**, as provided in **Section 3.4** of the said Policy – **ICT Assets Management, Accountability and Disposal**, which calls for existence of implementation mechanism and guidelines.

1.2 Rationale and Scope

If and when an ICT asset which has data processing and storage capacity has been improperly disposed off, there are high chances of disclosing sensitive institutional information and/or data. This is a breach of confidentiality which in itself may lead to other problems to the institution, including damage to the brand and reputation, and legal claims among others. On the other hand, there were no guidelines and therefore obsolete ICT equipment was piling up without disposal. In order to avoid the foregoing problems UDSM need to have in place formalised institutional-wide ICT assets disposal guidelines, so as to assist UDSM's units in proper disposal of ICT assets and facilities which are under their possession once the said assets can no longer be used.

These guidelines support the implementation of UDSM's ICT Policy with regard to the following Policy Objectives and Requirements:

- i) Establishment of mechanism and provision of guidelines on safe disposal, taking into consideration environmental protection, confidentiality of information and retrieval of valuable information contained in disposable ICT assets and facilities.
- ii) Establishment of mechanism for proper disposal of ICT assets and facilities through recycling or alternative use of disposed equipment.

In particular the guidelines refer to the disposal of any computer related equipment and associated software. This includes Personal Computer's (desktop or laptop), mobile devices, mobile phones, printers, projectors, scanners and any other peripheral devices such as memory sticks and external hard drives; and infrastructure components (e.g. servers, storage systems, and network devices). It also applies to all physical media which contain

confidential information for example: computer storage media, CDs/DVDs disks, and audio tapes.

1.3 Audience

This document is primarily intended for UDSM's members of staff who are involved in the general management of ICT assets and facilities, as well as the members of staff involved in the general management of assets and disposal of ICT assets and facilities. These may include the Heads of UDSM's Units and their ICT equipment-users, member of staff from the Fixed Assets Section of the Directorate of Finance, and all ICT support staff.

1.4 Definitions

The terms "**University of Dar es Salaam**", "**University**" or "**UDSM**" will refer to University of Dar es Salaam and its constituent Colleges.

The term "**UDSM Unit**" refers to any of the various academic or administrative units within the University of Dar es Salaam.

The term "**Head of Unit**" may refer to: Principals, Deans, Directors, Managers or Heads of Departments.

The term "**Policy**" would mean UDSM ICT Policy 2006, and UDSM ICT Security Policy 2016 and as amended from time to time. Policy is defined as a high-level statement of organizational beliefs, goals, and objectives and the general means for their attainment in a specified subject area.

The term "**ICT Asset**" refers to any electronic communication device or application, including: radio, television, cellular phones, computer systems and accessories, network hardware and software, satellite systems and associated devices, services and applications.

The term "**ICT equipment**" – i.e. the **Hardware** part of it -is constantly evolving and this can therefore become a very broad category making it impossible to list every single item or group of items within this guideline document; however physical assets can be summarized as follows:-

- A Personal Computer (PC) or Workstation
- A Laptop or Tablet Computer

- Infrastructure Components (servers and storage systems)
- Backup Devices and Tapes
- A Local or Network Printer
- A Local or Network Scanner
- A USB Removable Device or Portable Hard Disk
- A Video Camera
- A Mobile Phone and other portable radio communication devices e.g. radio calls and walkie-talkies, etc.
- Other Network Devices (such as a switch, router or firewall)

“**Software**” - to list all applications in use by the University of Dar es Salam would be impossible, however software can be summarized as follows:

- Desktop Software – all applications and related data loaded onto a Desktop or Laptop computer.
- Server Software – all applications and related data loaded onto a server.
- Hosted Solution – all applications and related data (owned by UDSM) hosted off site either in the subscribed services e.g. Turnitin, or in any third-party provided Data Centre.

Information Security is the preservation of:

- **Confidentiality:** ensuring that information is accessible only to those authorized to have access;
- **Integrity:** safeguarding the accuracy and completeness of information and processing methods; and
- **Availability:** ensuring that authorized users have access to information and associated assets when required

2 Background

The University of Dar es Salaam is becoming increasingly dependent on ICT for many aspects of her core business services delivery. This reliance on ICT is reflected in the magnitude of university expenditure on ICT products and services and their procurement across all the university’s units.

While the UDSM Management recognises the need for a strong and vibrant ICT-enabled working space that supports and enhances teaching, learning, research and public service activities, it also acknowledges the impact that ICT may have on the environment at the end of its effective lifecycle. As result, UDSM Management is continuing to take necessary measures in order to ensure that ICT resources are:

- i) procured as part of a planned strategy and managed environment;
- ii) managed in an effective, sustainable manner that maximises value for money and mitigates risks both information security risks and environmental pollution risks;
- iii) aligned with the objectives and requirements of the ICT Policy; and
- iv) recycled or disposed of in an accountable, cost effective, and environmentally friendly manner.

3 ICT Product Lifecycle and Services Management

The general ICT Assets Management must be based on lifecycle approach in that the entire lifecycle of an ICT resource is considered before an ICT resource qualifies for disposal; unless some other events occur which shorten the lifecycle duration of equipment. For example, an ICT equipment has failed and becomes irreparable for some reasons (availability/economical) – say, availability of the needed spare parts is difficult or it is cheaper to replace than to repair.

3.1 ICT Resource Lifecycle Requirements in Relation to Management and Disposal

An ICT resource lifecycle approach requires effective management of an asset throughout its useful life. Good business practice requires that ICT resources are appropriately secured, maintained and used for the intended purposes, periodically accounted for, assessed to ensure their continued value to the organisation and disposed of in an accountable, cost-effective and environmentally friendly manner.

3.2 General Considerations when Disposing of ICT Assets

When disposing of ICT products and services, the best practice requires the disposing organisation/unity to consider and observe the following:

- i) whether there are equipment maintenance contracts, warranties, or service level arrangements; and disposal processes must be consistent with organisation's relevant policies and established procedures/standards for ICT assets and facilities disposal

- ii) disposal cannot be conducted without approval from the accounting officer or the delegated personnel
- iii) disposal must be supervised and certified upon completion by a person delegated by the accounting officer
- iv) Information Security requirements must be met before disposing of the asset (or before trade-in) and, based on the sensitivity of data contained in an ICT asset, an appropriate method must be used to remove data from the ICT resource that is earmarked for disposal
- v) a variety of disposal strategies must be provided to meet differing circumstances, based on the relative value of the ICT resource and the efficiency and cost-effectiveness of the disposal process. For example, recycling within the organisation or across the government, trade-in, and donation to community or non-profit organisations or by sale to the public through tender or auction
- vi) due consideration is given to applying recycling strategy and adopting environmentally sensitive disposal practices to minimise the impact of ICT assets and resources on the environment. It implies ICT equipment marked for disposal should never employ landfill as a disposal strategy.
- vii) the disposal process should be fair, equitable, and open; and should not favour an employee or a certain group of employees within the organisation.

3.3 The Current Practice of Disposing of Assets and Facilities at UDSM

The general procedure that is normally followed at the University of Dar es Salaam when disposing of any disposable asset is as follows:

- i) The disposing unit identifies and lists the items that need to be disposed of,
- ii) The disposing unit requests an approval from the DVC Administration office to dispose of the enlisted assets as per the items identified in (i) above,
- iii) The DVC Administration forwards the request to the PMU Manager for advice and processing,
- iv) The PMU Manager, verifies the enlisted assets in the request, and writes a letter to the Ministry of Finance (MoF), signed by the accounting officer to request for a Ministry Team for verification and valuation of the enlisted assets meant for disposal,
- v) Upon receiving the request, the MoF sends its team to verify and assess the enlisted assets meant to be disposed of,

- vi) On completion of the verification and assessment carried out in (v), the Ministry Team submits the report to the accounting officer which contains, among other things, the residual value of the enlisted assets and the method/approach to be used for the actual disposal of each of the enlisted assets,
- vii) PMU prepares and executes a suitable approach as per the recommendations made by the Ministry Team for asset disposal based on the nature of assets involved in the list

3.4 When to Use the ICT Assets Disposal Guidelines

In relation to the current practice of disposing of assets as presented in the overview in Section 3.3 above, these guidelines are meant to inform and provide guidance to the UDSM's units when carrying out the first stage of assets disposal process if the disposal involves ICT assets among others. That is identification and enlisting of the ICT assets which a UDSM unit needs to be disposed of as per Section 3.3(i) in the above assets disposal overview.

4 Recommended Procedures and Guidelines for ICT Assets Disposal

4.1 Disposal Procedures

ICT assets disposal procedures are department specific (ICT Unit) procedures, meant to promote effective disposal of ICT assets (equipment) at the University of Dar es Salaam. The procedures outline the steps that need to be taken to ensure that all ICT equipment are disposed of appropriately – i.e. recycled or disposed of in an accountable, secure, cost effective and environmentally friendly manner.

4.2 The Procedures for Disposal of ICT Equipment at Unit Level

The procedures for disposal ICT equipment shall have the following five (5) major steps:

- i). *Equipment Disposal Justifications* → ii). *Pre-Disposal Treatment* → iii). *Technical and Economical Assessment of Options* → iv). *Consideration for Equipment Reuse, Reallocation and/or Donation* → v). *Asset Disposal Processes*

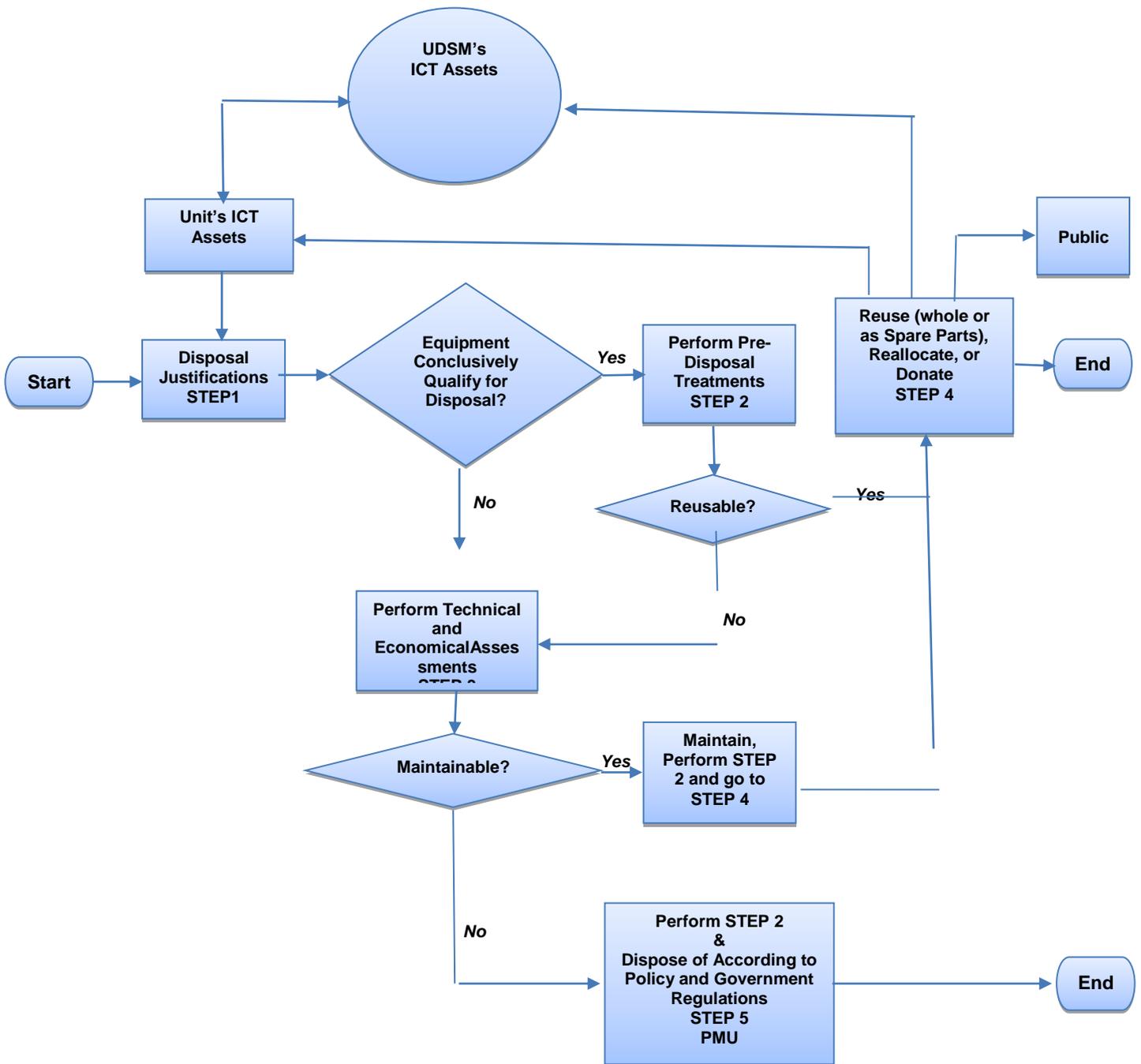


Figure1: The Flow Chart of the Procedures for Disposal of ICT Equipment at Unit Level

Figure 1 is a Flow Chart which shows the steps to be taken, and the decisions to be made when a UDSM's unit is considering to dispose of ICT equipment under its possession.

As it can be seen in the Flow Chart, an ICT equipment justified for disposal in a given UDSM's unit may end up being reused wholly or in part (e.g. spare parts) within the disposing-unit or reallocated for use in another UDSM's unit, or donated to the public (changing hands) – STEPS 1, 2 and 4 in the Flow Chart. Else, an ICT equipment justified for disposal may end up being disposed of outside the disposing-unit and the University at large (e.g. by auction) in which case the said equipment will again change hands – i.e. STEPS 1, 3 and 5 in the Flow Chart. Note that all equipment which need to be disposed of through **donation or auction**, must undergo the treatments defined in STEP 2 of the ICT assets disposal procedures, and must observe the conditions stipulated in **Section 4.2.4 (ii) & (iii)** of this document.

4.2.1 Guideline for establishing Equipment Disposal Justifications

Before a UDSM unit can enlist an ICT equipment for disposal there must be a justification.

There are many factors to consider when determining whether it is appropriate to dispose of an asset, and certain types of assets must be disposed of in a specific way to maintain confidentiality and integrity of information/data. The following factors qualify an ICT equipment for disposal straightforwardly:

- i) The equipment is no longer working and cannot be salvaged (broken).
- ii) The equipment can no longer support the current needs of the owning Unit.
- iii) The equipment is old and no longer meets the University standards.
- iv) The equipment has reached its End of Life/Support - and hence a cyber-security risk.

Broken Equipment

This is equipment that is not working and is out of warranty. Broken equipment that cannot be repaired will automatically qualify for disposal. It may also qualify for disposal if the cost of repair is financially inappropriate; in that the equipment is five years old or older and thus is due to be replaced in the near future.

The equipment can no longer support the current needs of the owning Unit

Generally ICT equipment will reach its natural end of life when it is between five and seven years old, however there are some exceptional circumstances where equipment becomes redundant mid-term due to specific machines (PCs and Laptops) needing to run specialised software where the specification of the machines (hardware) has been exceeded by those of software. In all instances an assessment must be undertaken to determine the validity of

disposal of the equipment and to ensure authorisation is granted for the removal of the equipment from the asset records.

The equipment is old and no longer meets the University standards

This is equipment that is no longer fit for the purpose (redundant) and is incapable of running the standard software deployed at the time. Typically this will be the equipment that is five years of age or older. Redundant equipment that is not working will automatically qualify for disposal.

End of Life/Support

This is equipment which may be functioning correctly but has reached its end of life and is no longer supported by the manufacturer. Such equipment may no longer receive security updates and thus pose a risk to the ICT operations of the University. In such circumstances the equipment qualifies for disposal. The information of equipment which have reached end of life or end of support can be found from the respective equipment manufacturer's websites.

4.2.2 Guideline for carrying out the Pre-Disposal Treatment

In the process of ICT assets disposal, the ICT unit or a representative at a University Unit, must establish the **justifications for the disposal of an ICT asset** as per the Flow Chart in **Figure 1** and **Section 4.2.1** above, after which the ICT Unit or the representative shall be responsible in carrying out the following:

- i) Assessing whether the equipment could be suitably redeployed in another University unit (within) – for example a given PC may no longer be able to support the current needs of CoET in terms of the hardware requirement for installing the latest design engineering applications, but the same PC can be used by another unit, say IKS whose processes do not need a PC with such high specs and capacity;
- ii) Before disposal the ICT Unit representative will confirm with the ICT equipment user that no data is held locally in the ICT equipment storage device (if any) which needs to be retained;
- iii) In the event of such data being discovered then the data will be copied for safe storage and secured onto an appropriate file storage for keeping;
- iv) The equipment may be dismantled and used for spare part purposes -As part of a secure computer recycling process, any components that can be recycled are removed and dismantled and then reused as spare parts. In this case the hard disk will be erased to a

complete and unrecoverable state, the power supply unit and RAM will be removed and retained as spare parts, and any other reusable component;

- v) It should be noted also that deleting documents and files stored on a computer hard drive cannot always remove all of the data. There are special programs specifically designed to pull deleted data from a hard drive. The only way to ensure data remains safe and secure is to have a drive professionally wiped or physically destroyed.
- vi) Even a copier or a fax machine may contain confidential documents if they contain a harddrive, hence these machines also need to be disposed of carefully. When these are among the items for disposal, inspection should be conducted to confirm existence or non-existence of a hard drive, if one exists then it should be removed and the procedure detailed in 4.2.2(v) above should be performed;
- vii) In the event that any equipment is un-repairable or has no other useful life it will be disposed of, and the hard disk will be physically destroyed. The hard drives can be crushed/shredded so important institutional data is not compromised.
- viii) After disposal the ICT Unit will record disposal on the relevant ICT Asset register, including the reason and method of disposal, the date of disposal, and which system administrator undertook the task.

4.2.3 Guideline for carrying out Technical and Economical Assessment

There are situations in which the need for disposal is not as obvious as those listed above, when faced with this situation an assessment based on a combination of technical issues and maintenance/repair costs need to be carried out in order to qualify or disqualify an ICT equipment for disposal.

Cost

For example, an ICT equipment may be running sluggishly or breaking down frequently and forcing the owning Unit to pay for frequent repairs. The cost of replacing the equipment may seem too costly. However, by calculating the amount of time and money spent in supporting or repairing ineffective equipment, the owning Unit may find the cost of replacement to be less than maintaining the old and inefficient equipment; and hence qualify it for disposal – this is especially true if having the equipment off-line causes an expensive downtime, e.g. keeping employees from completing their jobs efficiently and in a timely manner.

Reparability

It is also possible that broken equipment that can be repaired will qualify for disposal if the cost of repair is greater than, equal to or just less than the cost of replacement

4.2.4 Guidelines on ICT Asset Disposal Strategies and needed Authorisations

According to Figure 1, a variety of disposal strategies exist which meet differing circumstances.

- i) One of the disposal strategy is to **re-allocate** the ICT assets within the institution – this involves reallocation of the ICT assets from one UDSM unit to another. For this to happen the Head of Unit that is disposing of the said assets must approve and authorize the transfer, and ensure that proper records of it are kept.
- ii) Another disposal strategy is to **donate**, in which case the ICT assets will be re-allocated beyond the institution; e.g. across the government, and donation to community or non-profit organizations. For this to happen, approval of the accounting officer must be obtained.
- iii) Alternatively, if ICT assets cannot be disposed of through the strategies mentioned in **4.2.4 (i) & (ii)** above, then a disposal strategy that involves selling of the ICT assets meant for disposal to the public through tender or auction is used. For this to happen, approval of the accounting officer must be obtained and normally the process is handled by the PMU unit and must adhere to the procedures and practices set out by the Government of Tanzania with regard to this matter.
- iv) UDSM Units are reminded to ensure that all ICT equipment in their possession which need to be disposed of are disposed of properly so as to preserve the confidentiality of data. These guidelines will assist a Unit which needs to dispose of ICT assets in preparation of the list of equipment for disposal and their condition. Once a UDSM Unit has prepared and compiled the list based on these guidelines, an appropriate disposal strategy, among the three outlined above in **4.2.4 (i), (ii), and (iii)** can be employed to dispose of the listed ICT items. Note if the ultimate ICT assets disposal would involve either the strategy defined in **4.2.4 (ii), or (iii)**, or both then the disposing Unit must submit the list of ICT equipment to the DVC-Administration to request an approval for ICT assets disposal i.e. fulfilment of **Disposal process 3.3(i) in Section 3.3** above.

4.3 Roles and Responsibilities during the Execution of the Disposal Procedures

Proper definitions of roles and responsibilities in carrying out the above procedures are essential in assurance of compliance with these guidelines. At the unit level the following personnel will be involved: The Head of Unit for the needed authorisations; The ICT Unit or representatives (systems administrator(s)) for the performance of the defined procedures for ICT assets disposal; and responsible ICT equipment user(s) as a custodian of the equipment and data contained in it (if any).

4.4 Review of the Recommended ICT Assets Disposal Procedures

These procedures should be reviewed after every three years or when new ICT technologies are introduced in the environment and they seem to dictate otherwise.

4.5 ICT Assets Disposal Supporting Tools

The supporting tools needed are:

- i) **UDSM Asset Disposal Form**, which must be filled in by the ICT Unit personnel(s) involved in a given ICT asset disposal activity in cooperation with a representative from the **Fixed Asset Section** of the DOF after execution and completion of the disposal procedures defined in this document; and
- ii) **Data sanitization software** – of which various options are available.

Document Details:

Owned by:	DVC- Administration				
Approved by:					
Date Approved:					
Review Date:	November 2022				
Past Review Dates:	New				
Author	UDSM ICT Manager				
Documentation Status:	<input type="checkbox"/>	Working draft	<input type="checkbox"/>	Consultation release	<input checked="" type="checkbox"/> Final version

