

# Information Security Physical and Environmental Security Manual

## Section 1 - Introduction

### Executive Summary

- (1) The University of Newcastle is committed to and is responsible for ensuring the confidentiality, integrity, and availability of the data and information stored on its systems.
- (2) The minimum standards defined in this manual apply to all users of University ICT resources including, but not limited to, staff, students, affiliates, conjoint appointments and visitors to the University.
- (3) The University must have controls in place to ensure the smooth operation of the University's ICT resources. Users must be trained, equipped and periodically reminded to use information and associated infrastructure securely.

## Section 2 - Physical and Environmental Security Manual

### Part A - Secure Areas

**Objective - To prevent unauthorised physical access, damage and interference to the University's information and assets.**

- (4) Secure areas are communication rooms and computer rooms, rooms accommodating servers, etc. that support critical and/or sensitive activities, and areas housing vital information and documents that require a higher level of physical security compared to other operating environments.
- (5) In the context of this manual "vital information and documents" are those records that are essential for the ongoing business of the University, and without which the University could not continue to function effectively. The identification and protection of such information and documents is a primary objective of information security, records management and disaster planning.

#### Physical Security Perimeter

- (6) University data centre facilities and rooms containing server infrastructure must be protected by a physical security perimeter.
- (7) System Owners must ensure appropriate controls are in place to establish secure areas. Sensitive information and assets must be protected while considering the safety of personnel. The selection of controls must be supported by an appropriate risk assessment.
- (8) Controls that must be applied to secure areas are:

- a. the perimeters of buildings containing data centres or server infrastructure must be physically sound (i.e. there must be no gaps in the perimeter or areas where a break-in could easily occur);
- b. external walls must be of solid construction and all external doors must be suitably protected against unauthorised access with control mechanisms, e.g. bars, alarms, locks, etc;
- c. doors and windows must be locked when unattended;
- d. doors must be fitted with an audible alarm that triggers when they have been kept open beyond a pre-determined length of time;
- e. external protection must be considered for windows, particularly at ground level;
- f. all fire doors on a security perimeter must be alarmed, monitored and tested in conjunction with the walls to establish the required level of resistance in accordance with suitable regional, national, and international standards;

(9) Where appropriate, data centre entry points must be monitored by a Closed-Circuit Television (CCTV) system on a 24/7 basis. All video surveillance data must be protected from unauthorised disclosure, modification and erasure, and maintained for at least ninety (90) days. Refer to the University [Closed Circuit Television \(CCTV\) Policy](#) for further information.

### **Physical Entry Controls**

(10) Secure areas must be protected by appropriate entry controls to ensure that only authorised personnel are allowed access.

(11) The following controls must be implemented:

- a. access to areas where sensitive information is processed or stored must be restricted to authorised personnel only;
- b. authentication controls, e.g. access control card system, must be used to authorise and validate access;
- c. an audit trail of all access must be maintained;
- d. visitors must be escorted by authorised personnel;
- e. visitors must only be allowed access for specific and authorised purposes;
- f. the date and time of entry and departure of visitors must be recorded;
- g. all employees and other authorised personnel must wear visible identification;
- h. visitors must be issued badges or tags of a different colour than employees;
- i. employees must notify a University Security Officer when they encounter unescorted visitors or anyone not wearing visible identification;
- j. third-party support personnel may be granted restricted access only when required; their access must be authorised and monitored; and
- k. access rights must be regularly reviewed.

### **Securing Offices, Rooms and Facilities**

(12) Controls to ensure security of information and information systems located in University offices, rooms and other facilities must be designed, applied and documented.

(13) Information Owners and IT Security Officers must regularly assess the security of areas where sensitive information is processed and/or stored. Controls that should be implemented to manage associated risks are:

- a. physical entry controls described in clauses 10 and 11 of this manual.
- b. ensure sensitive information is stored properly when not in use, in accordance with clauses 54 to 57 of this manual.

- c. directories that identify the locations of data centres and other areas where sensitive information is stored must not be made public.

### **Protecting Against External and Environmental Threats**

(14) Physical protection against natural disasters, malicious attack or accidents must be designed and applied. Information Owners, System Owners, planners and architects must incorporate, to the extent possible, physical security controls that protect University information and assets against damage from fire, flood, earthquake, explosion, civil unrest and other forms of natural and man-made disaster. Consideration must be given to any security threats presented by neighbouring premises or streets. In addition to building code and fire regulations:

- a. combustible or hazardous materials must be stored at a safe distance from the secure area;
- b. bulk supplies, e.g. stationery, must not be stored in a secure area;
- c. backup equipment and backup media must be located at a safe distance to avoid damage from a disaster affecting the main site; and
- d. environmental alarm systems, fire suppression and firefighting systems must be installed.

### **Working in Secure Areas**

(15) Security controls and procedures must be used by personnel when working in secure areas.

(16) Information Owners must identify and document requirements that apply to personnel who have been authorised to work in secure areas. Authorised personnel must be informed that:

- a. sensitive information cannot be discussed in a non-secure area;
- b. sensitive information cannot be disclosed to personnel who do not have a need-to-know; and
- c. visitors must be authorised, logged and escorted.

### **Delivery and Loading Areas**

(17) Access points such as reception, delivery and loading areas must be controlled and, if possible, isolated from secure areas or offices to avoid unauthorised access.

(18) Information Owners, System Owners, planners and architects must ensure that:

- a. loading docks and delivery areas must be regularly inspected and actively monitored;
- b. incoming material must be inspected for potential threats before this material is moved from the delivery and loading area to the point of use;
- c. incoming material must be registered on entry to the site; and
- d. incoming and outgoing shipments must be physically segregated where possible.

### **Public Areas**

(19) Public areas are areas that are freely accessible to the public, students and visitors to the University.

(20) The value of IT assets sited in public areas should either be low (e.g. desktop PCs in general access areas) or the assets should be physically large to avoid theft (e.g. printing facilities or print credit kiosks).

(21) All equipment not intended for public use should be sited to minimise the risks of unauthorised access, and the compromise of information.

(22) Systems located in public areas that may be used to access confidential information must be sited in such a way

as to prevent unauthorised individuals from viewing the displayed data.

(23) All publicly accessible IT assets should be appropriately defended against vandalism, modification and theft.

## **Part B - Equipment**

**Objective - To prevent loss, damage, theft or compromise of assets and interruption to the University's operations.**

### **Equipment Siting and Protection**

(24) Equipment must be protected to reduce the risks of unauthorised access, environmental threats and hazards.

(25) System Owners, planners and architects must ensure that University facilities are designed in a way that safeguards sensitive information and assets.

(26) Servers, routers, switches and other centralised computing equipment must be located in a room with access restricted to only those personnel who require it.

(27) Equipment should be located, and monitors angled, in such a way that unauthorised persons cannot observe the display.

(28) Staff printers, scanners, copiers and fax machines should not be located in an area that is accessible to the public.

### **Supporting Utilities**

(29) ICT infrastructure must be protected from power supply interruption and other disruptions caused by failures in supporting utilities.

(30) The following controls must be implemented to help ensure availability of critical services:

- a. all supporting utilities such as electricity, water supply, sewage, heating/ventilation and air conditioning must be adequate for the systems they are supporting. Supporting utilities must be regularly inspected and as appropriate tested to ensure their proper functioning and to reduce any risk of malfunction or failure;
- b. an uninterruptible power supply (UPS) to support orderly close down or continuous running is recommended for equipment supporting critical business operations. Power contingency plans must cover the action to be taken on failure of the UPS. A back-up generator must be considered if processing is required to continue in case of a prolonged power failure. An adequate supply of fuel must be available to ensure that the generator can perform for a prolonged period. UPS equipment and generators must be regularly checked to ensure they have adequate capacity and are tested in accordance with the manufacturer's recommendations;
- c. emergency power off switches must be located near emergency exits in equipment rooms to facilitate rapid power down in case of an emergency. Emergency lighting must be provided in case of main power failure;
- d. the water supply must be stable and adequate to supply air conditioning, humidification equipment and fire suppression systems (where used). An alarm system to detect malfunctions in the supporting utilities must be installed to limit any damage that a fault may cause to equipment;
- e. telecommunications equipment must be connected to the utility provider by at least two diverse routes to prevent failure in one connection path impacting voice or data services; and
- f. voice services must be adequate to meet local legal requirements for emergency communications.

### **Cabling Security**

(31) Power and telecommunications cabling carrying data or supporting information services must be protected from

interception or damage.

(32) Power and telecommunications lines into information processing facilities must be underground or subject to adequate alternative protection.

(33) Network equipment must be protected from unauthorised physical access or damage by placing it within a secured data centre, or a locked cabinet or room.

(34) Power cables should be segregated from communications cables to prevent interference.

(35) Cables and equipment must be clearly marked to minimise handling errors such as accidental patching of wrong network cables. A documented patch cabling standard should be used to reduce the possibility of errors.

### **Equipment Maintenance**

(36) Equipment must be correctly maintained to help ensure availability and integrity of sensitive information and assets.

(37) When equipment is serviced, System Owners must consider the sensitivity of the information it holds, and the value of the assets. The following controls must be applied:

- a. equipment must be maintained in accordance with the supplier's recommended schedule and specifications;
- b. only authorised maintenance personnel may carry out repairs and service equipment;
- c. records must be kept of all suspected faults and all preventive and corrective maintenance;
- d. maintenance must be scheduled at a time of day that limits interference with services or operations; and
- e. users must be notified before equipment is taken off-line for maintenance.

(38) If off-site maintenance is required, appropriate controls must be implemented; confidential information should be cleared from the equipment, maintenance personnel should be sufficiently cleared, and appropriate supplier relationship agreements should exist to ensure the appropriate protection of information.

### **Removal of Assets**

(39) University owned equipment, information and software must not be removed from University premises without appropriate authorisation by a Senior Administrative Officer.

(40) An inventory of IT assets must be maintained, which notes equipment that has been removed from the University. The inventory must include:

- a. item description and serial number;
- b. where the asset is (or will be) located;
- c. the name of the individual responsible for the asset;
- d. the removal date and return date; and
- e. the reason for removal.

(41) The description and serial numbers must be verified when the asset is returned.

(42) Personnel involved in the removal must be informed of and accept responsibility for protection of the asset.

### **Security of Equipment and Assets Off-Premises**

(43) Assets must be safeguarded using documented security controls when off-site from University premises.

(44) System Owners must ensure that equipment used or stored off-site is safeguarded in accordance with the value of the asset and the sensitivity of information stored on it. Controls to apply include:

- a. encrypting sensitive data;
- b. using a logical or physical access control mechanism (such as a password) to protect against unauthorised access;
- c. using a physical locking or similar mechanism to restrain the equipment; and
- d. ensuring personnel are instructed on the proper use of the chosen controls.

(45) Personnel in possession of University equipment must:

- a. not leave it unattended in a public place;
- b. ensure the equipment is under his/her direct control at all times when travelling;
- c. take measure to prevent viewing of sensitive information by unauthorised personnel;
- d. not allow unauthorised individuals to use the equipment; and
- e. report loss or stolen equipment immediately.

(46) Particular care must be taken by University employees when travelling with a laptop or other equipment holding sensitive information. Specific security mechanisms, such as strong authentication and encryption, must be considered for the devices according to the classification of the data stored on each device.

### **Secure Disposal or Re-Use of Equipment**

(47) All data and software must be erased from equipment prior to disposal or redeployment.

(48) System Owners must consider the sensitivity of information and the value of the assets when determining whether or not hardware or media will be re-used or destroyed.

(49) Prior to re-use within the University:

- a. the integrity of the University records must be maintained by adhering to the [Records and Information Management Policy](#);
- b. information and software must be backed up by the original System Owner in case information recovery is required; and
- c. the storage media must be wiped.

(50) Storage media that will no longer be used in the University must be wiped by a method approved by the Information Security Team. Asset inventories must be updated to record details of the data wiping including:

- a. asset identifier;
- b. date of erasure; and
- c. names of personnel performing the erasure.

(51) When a supplier conducts the data wiping there must be contractual and audit procedures to ensure complete destruction of the information. The University must receive certification that the destruction has occurred.

### **Unattended User Equipment**

(52) Unattended equipment must be appropriately protected.

(53) Unattended equipment must be safeguarded by:

- a. terminating the active session when finished;
- b. locking the session with a password protected screen saver or other approved mechanism;
- c. logging off computers, servers, terminals and other devices when session is finished;
- d. switching off devices when not required;
- e. enabling password protection on mobile devices, printers, kiosks and portable storage devices; and
- f. securing devices with a cable lock when enhanced physical security is justified.

### **Clear Desk and Clear Screen Policy**

(54) Sensitive information must be safeguarded from unauthorised access, loss or damage.

(55) Workspaces must be secured when they cannot be monitored by authorised staff. Workspaces can be secured by:

- a. clearing desktops and work areas;
- b. locking hard copy sensitive information in an appropriate cabinet;
- c. locking portable storage devices with sensitive information in an appropriate cabinet;
- d. activating a password-protected screen saver;
- e. retrieving documents from printers and fax machines; and
- f. ensuring that sensitive hard copy documents that are no longer needed are placed in shredding bins, not recycle bins.

(56) When visitors, cleaning contractors or other staff without a “need to know” are in the area, sensitive information must be safeguarded by:

- a. covering up and maintaining control of hard-copy files;
- b. minimising windows, blanking computer screens or activating the password-protected screen saver.

(57) Sensitive information must not be discussed in public or other areas where there is a risk of being overheard by unauthorised personnel.

## Status and Details

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## Glossary Terms and Definitions

**"University"** - The University of Newcastle, a body corporate established under sections 4 and 5 of the University of Newcastle Act 1989.

**"Risk"** - Effect of uncertainty on objectives. Note: An effect is a deviation from the expected, whether it is positive and/or negative.

**"Risk assessment"** - The overall process of risk identification, risk analysis, and risk evaluation.

**"Asset"** - Any tangible or intangible item (or group of items) that the University owns or has a legal or other right to control and exploit to obtain financial or other economic benefits.

**"Student"** - A person formally enrolled in a course or active in a program offered by the University or affiliated entity.

**"ICT resources"** - All information and communication technology resources and facilities.

**"Information Owner"** - A senior business, college or unit manager whom the University has authorised to collect, create, retain and maintain information within their assigned area of control.

**"Personnel"** - In relation to a party, any employee, officer, agent, contractor, sub-contractor, student or volunteer of that party.

**"Staff"** - Means a person who was at the relevant time employed by the University and includes professional and academic staff of the University, by contract or ongoing, as well as conjoint staff but does not include visitors to the University.

**"System Owner"** - An authorised individual who has been allocated responsibility by the University and is held accountable for an ICT resource.