Lancashire County Council

Information and Communications Technology

ICT Security Framework for Schools

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Foreword by the County Council

This document has been produced to support schools in the use of IT equipment and systems.

In order to assist Schools in this respect, this model "ICT Security Framework for Schools" has been drafted by the County Council, reviewed by the Directorate ICT Management Board, the County Union Secretary's and Computer Audit. It may be adopted by schools in its existing format.

This 'model' framework represents the minimum standards for ICT security. Schools may vary this 'model' framework or draft their own ICT Security Policy, but any policy that is adopted needs to adhere to the minimum standards reflected in the 'model' policy.

It should be noted that corporate and individual responsibilities are clearly defined within the 'model' framework. The framework requires the Headteacher to formally nominate a member(s) of staff to carry out these responsibilities. There are also certain procedural and functional aspects of the 'model' policy that schools must action in order to implement the framework. These are presented in Annex B2 to the framework for ease of reference. One of the key procedural aspects is the distribution of rules and agreements for ICT users, which outlines their responsibilities under the ICT Security Framework. To assist schools in this respect, acceptable 'Rules for ICT Users' have been produced and are presented as Annex C1-C3. To further assist schools in implementing the framework, a suggested strategy on the "back up" of data is attached as Annex B3 and proformas for maintaining hardware and software inventories are attached as Annexes B4 and B5 respectively. Annex B6 contains details of security guidelines to assist System Managers in their role.

The 'model' also includes an "E-Mail and Internet Use" Policy (Annex A). This refers to the "E-mail and Internet Use Good Practice Rules" for Staff and Pupil use (for both the Primary and Secondary school sectors), and Third Parties, (Annexes C1 – C3) which schools need to approve as an integral part of their ICT Security Policy. All users must complete the relevant consent or declaration form if they want to use the facilities.

One specific area where schools need to give further consideration is in relation to the practical implementation of the "E-mail and Internet Use Good Practice". Whatever approach the school adopts in this respect, the respective policy must be documented and incorporated within its ICT Security Policy as Annex B1.

1. Introduction

1.1 We are all managing a significant investment in the use of ICT. In many areas of work the use of ICT is vital and must be protected from any form of disruption or loss of service. It is therefore essential that the availability, integrity and confidentiality of the ICT systems and data are maintained at a level that is appropriate for our needs.

2. Framework Objectives

- 2.1 Against this background there are three main objectives of the ICT Security Framework:
 - a) to ensure that equipment, data and staff are adequately protected on a costeffective basis against any action that could adversely affect the school;
 - b) to ensure that users are aware of and fully comply with all relevant legislation;
 - c) to create and maintain within the school a level of awareness of the need for ICT security to be an integral part of the day to day operation so that all staff understand the need for ICT security and their own responsibilities in this respect.
- 2.2 If difficulties arise in the interpretation and/or appreciation of any aspects of the Framework, the Education ICT Group should be consulted (01772 531579).

3. Application

- 3.1 The ICT Security Framework is intended for all school staff who have control over or who use or support the school's administration and curriculum ICT systems or data. Pupils using the school's ICT systems or data are covered by the relevant 'Rules for ICT Users' and 'E-mail and Internet Use Good Practice' documents, which are incorporated within this framework.
- 3.2 For the purposes of this document the terms 'ICT' (or 'ICT system'), 'ICT data' and 'ICT user' are defined as follows:-
 - 'ICT' (or 'ICT system') means any device for automatic storing and processing of data and includes mainframe computer, minicomputer, microcomputer, personal computer (whether hand-held laptop, portable, stand-alone, network or attached to a mainframe computer), workstation, word-processing system, desk top publishing system, office automation system, messaging system or any other similar device;
 - 'ICT data' means any information stored and processed by ICT and includes programs, text, pictures and sound;
 - 'ICT user' applies to any County Council employee, pupil or other authorised person who uses the school's ICT systems and/or data.

4. Scheme of Delegation under the ICT Security Framework

4.1 The ICT Security Framework relies on management and user actions to ensure that its aims are achieved. Consequently, owner, corporate and individual levels of responsibility for ICT security are clearly defined below.

4.2 Owner

- 4.2.1 The owner has the legal title to the property. In this respect, all software, data and associated documentation produced in connection with the work of the school are the legal property of the County Council, which will normally hold it for the benefit of the school.
 - Exceptions to this will be allowed for software and documentation produced by individual Teachers for lesson purposes this includes schemes of work, lesson plans, worksheets or as otherwise agreed in writing by the Headteacher.
- 4.2.2 We also use software and data that are the legal property of external organisations and which are acquired and used under contract or licence.

4.3 Governing Body

The governing body has ultimate corporate responsibility for ensuring that the school complies with the legislative requirements relating to the use of ICT systems and for disseminating policy on ICT security and other ICT related matters. In practice, the day-to-day responsibility for implementing these legislative requirements rests with the Headteacher.

4.4 Headteacher

- 4.4.1 The Headteacher is responsible for ensuring that the legislative requirements relating to the use of ICT systems are met and that the school's ICT Security Policy, as may be amended from time to time, is adopted and maintained by the school. He/she is also responsible for ensuring that any special ICT security measures relating to the school's ICT facilities are applied and documented as an integral part of the Policy.
 - In practice, the day to day functions may be delegated to the 'System Manager', who must be nominated in writing by the Headteacher. The Headteacher may nominate him / herself as the System Manager and duly act in this capacity. This may be particularly relevant in smaller schools.
- 4.4.2 The Headteacher is also responsible for ensuring that the requirements of the Data Protection Act 1998 are complied with fully by the school. This is represented by an on-going responsibility for ensuring that the :-
 - registrations under the Data Protection Act are up-to-date and cover all uses being made of personal data and
 - registrations are observed with the school.

4.4.3 In addition, the Headteacher is responsible for ensuring that users of systems and data are familiar with the relevant aspects of the Policy and to ensure that the appropriate controls are in place for staff to comply with the Policy.

With the increase in use of computers and laptops at home, the position regarding the use of systems and data by staff at home is under review by the County Council. Further guidance will be issued in due course. In the meantime staff need to exercise care in the use of personal data at home.

4.5 System Manager

4.5.1 The 'System Manager' is responsible for the school's ICT equipment, systems and data and will have direct control over these assets and their use, including responsibility for controlling access to these assets and for defining and documenting the requisite level of protection. The System Manager will be an employee of the school.

In many schools the Headteacher will take on the role of the System Manager. It is acceptable for technical functions to be 'out-sourced' for example to the Westfield Centre or use of a shared technician. Where the System Manager is not the Headteacher, the governors should be advised of the sensitivity of the post during the appointment process.

- 4.5.2 Consequently, the System Manager will administer the practical aspects of ICT protection and ensure that various functions are performed, such as maintaining the integrity of the data, producing the requisite back-up copies of data and protecting the physical access to systems and data.
- 4.5.3 In line with these responsibilities, the System Manager will be the official point of contact for ICT security issues and as such is responsible for notifying the Headteacher or Chair of Governors of any suspected or actual breach of ICT security occurring within the school. The Headteacher or Chair of Governors should ensure that details of the suspected or actual breach are recorded and made available to Internal Audit upon request. The Headteacher or Chair of Governors must advise Internal Audit of any suspected or actual breach of ICT security pertaining to financial irregularity.
- 4.5.4 It is vital, therefore, that the System Manager is fully conversant with the ICT Security Policy and maintains an up to date knowledge of best practice and follows the associated approved practices.

4.6 Internal Audit

- 4.6.1 The Internal Audit Section is responsible for checking periodically that the measures prescribed in each school's approved ICT Security Policy are complied with, and for investigating any suspected or actual breaches of ICT security.
- 4.6.2 Specialist advice and information on ICT security may be obtained from the Education ICT Group, who will liase with Internal Audit on such matters.

4.7 Users

- 4.7.1 All users of the school's ICT systems and data must comply with the requirements of this ICT Security Framework, the relevant rules of which are summarised in `The Rules for ICT Users' attached in Annexes C1 C3.
- 4.7.2 Users are responsible for notifying the System Manager of any suspected or actual breach of ICT security. In exceptional circumstances, users may report any such breach directly to the Headteacher, Chair of Governors or to Internal Audit.

5. The Legislation

5.1 Background

5.1.1 The responsibilities referred to in the previous sections recognise the requirements of the current legislation relating to the use of ICT systems, which comprise principally of:-

Data Protection Acts 1984 & 1998;

Computer Misuse Act 1990;

Copyright, Designs and Patents Act 1988

- 5.1.2 It is important that all staff are aware that any infringement of the provisions of this legislation may result in disciplinary, civil and/or criminal action.
- 5.1.3 The general requirements arising from these acts are described below.

5.2 Data Protection Acts 1984 & 1998

- 5.2.1 The Data Protection Act exists to regulate the use of computerised information about living individuals. To be able to meet the requirements of the Act, the Headteacher is required to compile a census of data giving details and usage of all relevant personal data held on computer within the school and file a registration with the Data Protection Registrar. It is important that amendments are submitted where the scope of the system extends to new areas of operation. The 1998 Act is consistent with the principles established in the 1984 Act, but extends the regulation to certain manual records as well as computerised information. To help ensure that you are registered please check Annex? This shows you how to log on to the Information Commissioners Site and pay the necessary £35.00 for registration.
- 5.2.2 It is important that all users of personal data are aware of, and are reminded periodically of, the requirements of the act and, in particular, the limitations on the storage and disclosure of information.
- 5.2.3 Failure to comply with the provisions of the prevailing Act and any subsequent legislation and regulations relating to the use of personal data may result in prosecution by the Data Protection Registrar.

5.3 Computer Misuse Act 1990

5.3.1 Under the Computer Misuse Act 1990 the following are criminal offences, if undertaken intentionally:-

Unauthorised access to a computer system or data; Unauthorised access preparatory to another criminal action; Unauthorised modification of a computer system or data.

5.3.2 All users must be given written notice that deliberate unauthorised use, alteration, or interference with a computer system or its software or data, whether proprietary or written 'in-house', will be regarded as a breach of school policy and may be treated as gross misconduct and that in some circumstances such a breach may also be a criminal offence.

5.4 Copyright, Designs and Patents Act 1988

- 5.4.1 The Copyright, Designs and Patents Act 1988 provides the legal basis for the protection of intellectual property which includes literary, dramatic, musical and artistic works. The definition of "literary work" covers computer programs and data.
- 5.4.2 Where computer programs and data are obtained from an external source they remain the property of the originator. Our permission to use the programs or data will be governed by a formal agreement such as a contract or licence.
- 5.4.3 All copying of software is forbidden by the Act unless it is in accordance with the provisions of the Act and in compliance with the terms and conditions of the respective licence or contract.
- 5.4.4 The System Manager is responsible for compiling and maintaining an inventory of all software held by the School and for checking it at least annually to ensure that software licences accord with installations. To ensure that we comply with the Copyright, Designs and Patents Act 1988, users must get prior permission in writing from the System Manager before copying any software.
- 5.4.5 The System Manager is responsible for compiling and maintaining an inventory of all software held by the school and for checking it at least annually to ensure that software licences accord with installations.
- 5.4.6 All users must be given written notice that failure to comply with the provisions of the Act will be regarded as a breach of school policy and may be treated as gross misconduct and may also result in civil or criminal proceedings being taken.

6. Management of the Policy

6.1 The Headteacher should allocate sufficient resources each year to ensure the security of the school's ICT systems and to enable users to comply fully with the legal requirements and policies covered in this Policy. If insufficient resources are available to fully implement this policy, then the potential risks must be documented and reported to Governors.

- 6.2 Suitable training for all ICT users and documentation to promote the proper use of ICT systems will be provided. Users will also be given adequate information on the policies, procedures and facilities to help safeguard these systems and related data. A record of the training provided through the school to each individual user will be maintained.
- 6.3 In addition, users will be made aware of the value and importance of such ICT systems and data, particularly data of a confidential or sensitive nature, and be made aware of their personal responsibilities for ICT security.
- 6.4 To help achieve these aims, the relevant parts of the ICT Security Policy (including Annexes B3, B6, B7 and C1 C3) and any other information on the use of particular facilities and techniques to protect the systems or data will be disseminated to users.
- 6.5 The Headteacher must ensure that adequate procedures are established in respect of the ICT security implications of personnel changes. Suitable measures should be applied that provide for continuity of ICT security when staff vacate or occupy a post. These measures as a minimum must include:-
 - a record that new staff have been issued with, have read the appropriate documentation relating to ICT security, and have signed the list of rules;
 - a record of the access rights to systems granted to an individual user and their limitations on the use of the data in relation to the data protection registrations in place;
 - a record that those rights have been amended or withdrawn due to a change to responsibilities or termination of employment;

7. Physical Security

7.1 Location Access

- 7.1.1 Adequate consideration should be given to the physical security of rooms containing ICT equipment (including associated cabling). As far as practicable, only authorised persons should be admitted to rooms that contain servers or provide access to data. Such rooms should have for example keypad access.
- 7.1.2 The System Manager must ensure appropriate arrangements are applied for the removal of any ICT equipment from its normal location. These arrangements should take into consideration the risks associated with the removal and the impact these risks might have.

7.2 Equipment siting

- 7.2.1 Reasonable care must be taken in the siting of computer screens, keyboards, printers or other similar devices. Wherever possible, and depending upon the sensitivity of the data, users should observe the following precautions:
 - devices should be positioned in such a way that information stored or being processed cannot be viewed by persons not authorised to know the information. Specific consideration should be given to the siting of devices on which confidential or sensitive information is processed or retrieved;
 - equipment should be sited to avoid environmental damage from causes such as dust & heat;
 - users should avoid leaving computers logged-on when unattended if unauthorised access to the data held can be gained. Clear written instructions to this effect should be given to users;
 - a 'clear desk policy', i.e. hard copies of sensitive data are not left unattended on desks:

The same rules apply to official equipment in use at a user's home.

7.3 Inventory

7.3.1 The Headteacher, in accordance with the School's Financial Regulations, shall ensure that an inventory of all ICT equipment (however financed) is maintained and all items accounted for at least annually.

8. System Security

Annex B6 contains details of security guidelines for System Managers.

8.1 Legitimate Use

- 8.1.1 The school's ICT facilities must not be used in any way that breaks the law. Such breaches include, but are not limited to:-
 - making, distributing or using unlicensed software or data;
 - making or sending threatening, offensive, or harassing messages;
 - creating, possessing or distributing obscene material;
 - unauthorised private use of the school's computer facilities.

8.2 Private Hardware & Software

8.2.1 Dangers can occur from the use of unlicensed software and software infected with a computer virus. It is therefore vital that any private software permitted to be used on the school's equipment is acquired from a responsible source and is used strictly in accordance with the terms of the licence. The use of all private hardware for school purposes must be approved by the System Manager.

8.3 ICT Security Facilities

8.3.1 The school's ICT systems and data will be protected using appropriate security arrangements outlined in the rest of Section 8. In addition consideration should also be given to including appropriate processing controls such as audit trails, input validation checks, control totals for output, reports on attempted unauthorised access, etc.

For new systems, it is recommended that such facilities be confirmed at the time of installing the system. Information on the range of such facilities can be sought from the Westfield Centre.

8.4 Authorisation

Only persons authorised in writing by the System Manager are allowed to use the school's ICT systems. The authority given to use a system will be sufficient but not excessive and the authority given must not be exceeded.

Failure to establish the limits of any authorisation may result in the school being unable to use the sanctions of the Computer Misuse Act 1990. Not only will it be difficult to demonstrate that a user has exceeded the authority given, it will also be difficult to show definitively who is authorised to use a computer system. All ICT systems should display a message to users warning against unauthorised use of the system.

8.4.1 Access eligibility will be reviewed continually, including remote access for support. In particular the relevant access capability will be removed when a person leaves the employment of the school. In addition, access codes, user identification codes and authorisation rules will be reviewed whenever a user changes duties.

Failure to change access eligibility and passwords will leave the ICT systems vulnerable to misuse.

8.5 Access to the County Council LGFL Network

8.5.1 The Headteacher must seek permission on behalf of the school for any ICT system to be linked to the County Council's LGFL network.

8.6 Passwords

8.6.1 The level of password control will be defined by the System Manager based on the value and sensitivity of the data involved, including the possible use of "time out" passwords where a terminal/PC is left unused for a defined period.

Passwords protect access to all ICT systems, including "boot" passwords on PCs, particularly laptop/notebook PCs, as they are highly portable and less physically secure.

It is acknowledged that the use of 'boot' passwords may not be feasible on Classroom PC's.

Ideally passwords should be memorised. If an infrequently used password needs to be written, this record must be stored securely. Users should be advised about the potential risks of written passwords and should be given clear written instructions on the safeguards to adopt.

Passwords should not be obvious or guessable and their complexity should reflect the value and sensitivity of the systems and data involved, e.g. 'master user' passwords are more critical. Users should be instructed on appropriate techniques for selecting and setting a new password.

Passwords should be changed frequently to previously unused passwords. Many systems have the capability to prompt or force the user, periodically, to select a new password. The System Manager should decide on the appropriate duration that users could leave their password unchanged.

A typical period is termly. The interval chosen and the methods by which the password changes will be enforced must be suitably documented for users.

A password must be changed if it is affected by a suspected or actual breach of security or if there is a possibility that such a breach could occur, such as: -

- when a password holder leaves the school or is transferred to another post;
- when a password may have become known to a person not entitled to know it.

The need to change one or more passwords will be determined by the risk of the security breach.

- 8.6.2 Users must not reveal their password to anyone. Users who forget their password must request the System Manager issue a new password.
- 8.6.3 Where a password to boot a PC or access an internal network is shared, users must take special care to ensure that it is not disclosed to any person who does not require access to the PC or network.

8.7 Backups

8.7.1 In order to ensure that our essential services and facilities are restored as quickly as possible following an ICT system failure, back-up copies of stored data will be taken at regular intervals as determined by the System Manager, dependent upon the importance and quantity of the data concerned.

A recommended strategy is presented at Annex B3.

- 8.7.2 Security copies should be clearly marked as to what they are and when they were taken and stored away from the system to which they relate in a restricted access fireproof location and/or off site.
- 8.7.3 Security copies should be regularly tested to ensure that they enable the systems/relevant file to be re-loaded in cases of system failure.

8.8 Virus Protection

8.8.1 The school will use appropriate Sophos Anti-virus software for all school ICT systems.

Schools are actively encouraged to conform to the recommended anti-virus protection standards. All Users should take precautions to avoid malicious software that may destroy or corrupt data.

8.8.2 The school will ensure that every ICT user is aware that any suspect or actual computer virus infection must be reported immediately to the System Manager who must take appropriate action, including removing the source of infection.

The governing body could be open to a legal action for negligence should a person suffer as a consequence of a computer virus on school equipment.

8.9 Disposal of Waste

8.9.1 Disposal of waste ICT media such as print-outs, floppy diskettes and magnetic tape will be made with due regard to the sensitivity of the information they contain. For example, paper will be shredded if any confidential information from it could be derived.

The Data Protection Act requires that adequate mechanisms be used when disposing of personal data.

8.10 Disposal of Equipment

8.10.1 Prior to the transfer or disposal of any ICT equipment the System Manager must ensure that any personal data or software is obliterated from the machine if the recipient organisation is not authorised to receive the data. The Schools' ICT Group recommend the use of Preston Recycling 01772 562411 to support in the process of removing data if required. Where the recipient organisation is authorised to receive the data, they must be made aware of the existence of any personal data to enable the requirements of the Data Protection Act to be met. Normal write-off rules as stated in Financial Regulations apply.

The Data Protection Act requires that any personal data held on such a machine be destroyed.

It is important to ensure that any copies of the software remaining on a machine being relinquished are legitimate. Care should be taken to avoid infringing software and data copyright and licensing restrictions by supplying unlicensed copies of software inadvertently.

8.11 Repair of Equipment

8.11.1 If a machine, or its permanent storage (usually a disk drive), is required to be repaired by a third party the significance of any data held must be considered. If

data is particularly sensitive it must be removed from hard disks and stored on floppy disk or other media for subsequent reinstallation.

The school will ensure that third parties are currently registered under the Data Protection Act as personnel authorised to see data and as such are bound by the same rules as school staff in relation to not divulging the data or making any unauthorised use of it, but this needs to be confirmed before the equipment is made available for repair.

9 Security Incidents

9.1 The Audit Commission's Survey of Computer Fraud and Abuse 1990 revealed that over 50% of incidents of ICT misuse are uncovered accidentally. It is, therefore, important that users are given positive encouragement to be vigilant towards any suspicious event relating to ICT use.

All suspected or actual ICT security incidents should be reported to the System Manager and/or the Headteacher who should ensure a speedy and effective response is made to an ICT security incident.

Security incidents are not limited to malicious attacks such as viruses. Any incident that may affect the operation of ICT within the school needs to be reported and dealt with, including

- identified weaknesses
- malfunctions
- inappropriate or unauthorised use

It should be recognised that the school and its officers may be open to legal action for negligence if a person or organisation should suffer as a consequence of a breach of ICT security within the school where insufficient action has been taken to resolve the breach.

9.2 Serious Incident Response Guidelines

- 9.2 Where there is evidence of misuse or abuse that may necessitate disciplinary or possible criminal action exceptional care must be taken care must be taken to maintain the integrity of any computer evidence and the following guidelines implemented.
 - Do not turn on or operate the subject computer, or try to access the data held on any computer media. Do not allow anyone else to touch the equipment.
 - Contact Lancashire Audit Service Computer Audit Team alerting them of the suspicion and indicating the seriousness of the suspected incident. They can advise you of the action to take and will contact the police if deemed necessary. The numbers are 01772 534920 Jerry Kirk and 01772 534912 Carol Jones.
 - If computer media is provided as evidence e.g. floppy diskettes, tapes or print outs, place it in an envelope or bag which is immediately sealed, signed and dated. This should then be stored and locked away until required by the computer investigator. Document who obtained the evidence, who secured it and who had control of it.

- Keep the number of people who know of the suspicions to a minimum all actions taken should be kept confidential. The original suspect may have accomplices or may be innocent of the allegations.
- Do not solicit the assistance of the resident 'computer expert'. The processing of computer evidence requires specialist knowledge, training and tools.

10. E-Mail & Internet Use Policy

Attached, as Annex A is the "E-mail & Internet Use Policy". This is the National Association of Advisers for Computers in Education (NAACE) recommended policy that has been adopted by the Schools ICT Service for use in Lancashire schools. This policy applies to all school, students and third parties. The Lancashire Unions have advised on the development of a staff 'E-mail and Internet Use Policy' which is also included. The conditions of use are explained in the policy. All school staff accessing these facilities must be issued with a copy of the 'Rules for ICT Users – Staff' and 'E-mail and Internet Use Good Practice' documents and complete the user declaration attached to the policy. For all students, the school will ensure that the relevant 'E-mail and Internet Use Good Practice – Rules for ICT Users – Students' document is issued and the consent form is completed by pupils and their parents. In addition copies of the 'E-mail and Internet Use Good Practice - Rules for ICT Users – Third Parties' document and consent form will be issued to all visitors. All of these documents are contained in Annexes C1 – C3.