New Zealand E-government Interoperability Framework
(NZ e-GIF)

E-Government Unit

State Services Commission

Version 1.0

1 July 2002

VERSION CONTROL

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Version 0.9 Release 8	14 /2/02	15 February 2002	Approved by E-government Advisory Board for release for wider consultation.
Version 1.0a	25/3/02 to 4/4/02	19 April 2002	Draft Version 1.0 for circulation to Ministers and their staff only for consultation purposes
Version 1.0b	20/4/02 to 17/5/02		Draft Version 1.0 including agency feedback
Version 1.0c	27/6/02	1 July 2002	Final editing of version approved by Cabinet to prepare for publication on e-government website.

FOREWORD

The New Zealand e-Government Interoperability Framework (e-GIF) is a set of policies, technical standards, and guidelines (recommended practices) that outline the Government's policy on how public sector organisations should achieve electronic "interoperability" (i.e. the ability to share information and technology through using common policies and standards). Cabinet approved the e-GIF for use in the public sector on 13 June 2002.

Its content currently covers data and information, information and communications technology (ICT), and inter-agency electronic business protocols. Use of the e-GIF will enable agencies to make gains in efficiency, and also to improve the quality of service they offer to the public.

As much as interoperability is about agencies working together to improve delivery of services, it also affects the vendor community, in that they need to understand and provide services based on inter-agency business needs. Contribution by the vendor community in the formative stages of the New Zealand e-GIF has been an important factor to ensuring the validity of the framework.

To this end, working groups made up of government agencies and a number of vendors worked on the production of the e-GIF between October and December 2001. The collaboration with IT and IM vendors has proven extremely invaluable in reaching consensus over the choice of open standards to achieve a framework for a 'joined-up' government.

The e-GIF will change as technology and business needs change. This will be assured through governance arrangements for the e-GIF.

This document uses technical material from the previous NZ e-government projects that delivered the Information Systems and Data Management Policies and Standards in April 2000. While this document replaces these previous policies and standards in the area of interoperability, they still have a status as important policies for internal information management practices for government agencies, and can be found at:

- http://www.e-government.govt.nz/docs/data-management-policies/index.html
- http://www.e-government.govt.nz/docs/is-policies-standards/index.html
- http://www.e-government.govt.nz/docs/data-management-standards/index.html

This document also incorporates parts of the United Kingdom's e-GIF document.[1]

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[1] The UK e-GIF copyright notice is reproduced in full in Appendix B. The following is a shortened version: **e-Government Interoperability Framework (e-GIF)** © Crown copyright 2001

A Who's Who of Organisations Contributing to the e-GIF

Microsoft

Ministry of Social Development
Te Manatu whakahiato ora

CISCO SYSTEMS
EMPOWERING THE
INTERNET GENERATION

EDUCATION REVIEW OFFICE
TE TARI AROTAKE MATAURANGA

Office of the Controller and Auditor-General
Tumuaki o te Mana Arotake

Government Communications
Security Bureau

THE DEPARTMENT OF INTERNAL AFFAIRS
Te Tari Taiwhenua

EDS

Inland Revenue
Te Tari Taake

IBM

infinity SOLUTIONS

gen-i

MINISTRY OF HEALTH

Toitu te
Land whenua
Information
New Zealand

e-government
www.e-government.govt.nz

ITANZ

CITYLINK

MSi

New Zealand
Immigration Service
Te Ratonga Manene
New Zealand
the right choice

MINISTRY OF TRANSPORT
TE MANATŪ WAKA

STATE SERVICES COMMISSION
Te Komihana O Ngā Tari Kāwanatanga

SolNet

STANDARDS
NEW ZEALAND
Paerewa Aotearoa

BYTE
BRIGHT YOUNG THING ENTERPRISES

LUCID consulting ltd

Baycorp
Advantage

MAF Ministry of Agriculture and Forestry
Te Manatu Ahuwhenua, Ngaherehere

optimation

Statistics
NEW ZEALAND
Te Tari Tatau

1. WHAT IS INTEROPERABILITY AND HOW WILL IT BE ACHIEVED?

1.1. Introduction

Version 2 of the New Zealand e-government strategy, published December 2001[2], defines Interoperability as:

"The ability of government organisations to share information and integrate information and business processes by use of common standards."

This ability clearly shows that the e-GIF is a core and collective public sector asset, providing one of the common foundations of the e-government environment. It is critical to achievement of e-government goals, providing the capability for any agency to join with another electronically using known and agreed approaches to do so.

This underpins several e-government objectives. In particular, use of the e-GIF enhances the capability of agencies to:

- integrate information and services across agency boundaries; and

- provide easy electronic access to government information and services for individuals and businesses.

This means that the e-GIF supports improvement of the customer experience of government, and increases in the cost-effectiveness of government organisations. In effect, it performs the same function in e-government as the road code does on the highways.

1.2. How This Document Is Structured

This section describes the way the e-GIF is organised and how to find the elements.

The material is arranged in five parts:

- Sections 1, 4 and Appendix C provide an overview of the framework, who was involved in its development, what interoperability means, the context for use of the e-GIF and an introduction to its key elements.

- Sections 2 and 3 provide the overarching principles and management policies for the management of inter-agency projects. Governance arrangements are summarised in section 2.

- Sections 5-8 contain the essence of the e-GIF – the policies, standards, and guidelines.

- Appendix A contains a summary table of all the technical standards within the e-GIF.

- Appendix D is a glossary of terms used within the e-GIF.

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[2] http://www.e-government.govt.nz/docs/e-gov-strategy-dec-01/

1.3.   Why interoperate?

A primary purpose for an Interoperability Framework is to facilitate the delivery of integrated services by government agencies (refer §2.1). It will also contribute to future efficiency gains.

The Interoperability Framework has two major components:

- a 'technical' framework of interoperability policies, standards and guidelines expected to be adopted by a range of government agencies; and

- governance arrangements for the management and maintenance of the technical framework.

Interoperability is NOT about a central agency simply dictating common systems and process for agencies to adhere to. The policies, standards, and guidelines provide a framework that removes the need to prescribe the use of the same hardware and software by disparate agencies.

1.4.   Achieving Interoperability

Interoperability and use of the e-GIF applies in the following cases:

Parties to information and/or technology sharing arrangements	Agency	All agencies	Community of Interest	Public	Business	Other jurisdictions including local government
Agency	Perhaps	Yes	Yes			
All agencies	Yes	Yes	Yes	Yes	Yes	Yes
Community of Interest	Yes	Yes	Yes	Yes	Yes	Yes
Public		Yes	Yes			
Business		Yes	Yes			
Other jurisdictions including local government		Yes	Yes			

Figure 1 - Interoperability requirements: This table shows that interoperability will apply when the delivery of the service involves more than two agencies or a community of interest.

1.5. The Physical Environment

The primary assumption when using the e-GIF is that it is applied externally to agencies[3], that is, it defines the firewall-to-firewall environment for inter-agency projects. To achieve this, use of the e-GIF is based on the concept of a "bolt on" interface that can be applied to any government agency (and/or its contracted third parties).

The bolt-on interface uses open standard protocols as a means of communication and access using Internet protocols. Data sent through the interface is converted to a common standard understood by all the other government interfaces. Data received through an interface is converted to a form that can be understood by the individual agency back office systems.

Any two or more departments that have such an interface can communicate directly with each other and exchange data in a way that is clearly understood by both regardless of the back office systems in place. The implementation of these interfaces facilitates government department and agency interoperability through, for example, providing a framework that supports agencies in:

- exchanging structured data;

- exchanging metadata;

- provision and collection of metadata;

- exchanging and/or integrating business processes;

- exchanging documents;

- exchanging images; and

- exchanging multimedia.

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[3] The adoption of the e-GIF must allow for a sensible transition. Recognising this, on 13 June 2002 Cabinet agreed that current information systems, software applications, or electronic data/information resources do not need to immediately comply with the NZ e-GIF.

2.   GUIDING PRINCIPLES

The following principles guide how the e-GIF is to be developed in the future, and define how agencies are expected to respond to it.

2.1.   Purpose

The purpose of the e-GIF is to create a common basis across government for the cost-effective delivery of e-government to the public and business, and between government agencies. The design and content of e-GIF is driven by the need to enable inter-agency electronic business arrangements. Its primary value results from its application by agencies as part of their e-government efforts.

2.2.   Adoption of the e-GIF by agencies

Cabinet has made use of the e-GIF mandatory for all Public Service departments, the New Zealand Police, the New Zealand Defence Force, the Parliamentary Counsel Office, the Parliamentary Service, the Office of the Clerk, the New Zealand Security Intelligence Service, and the Government Communications Security Bureau from 1 July 2002.

It has directed that these agencies will adopt the e-GIF on the following basis:

2.2.1. Application of e-GIF

- Current information systems, software applications, or electronic data/information resources do not need to immediately comply with the NZ e-GIF.

- Any new information system, software application, or electronic data/information resource (or current instances of these being redeveloped or replaced); or systems for interfacing with the same; must comply with the e-GIF except in instances where:

    - it is certain that interoperability will never be a requirement; or

    - the current version of the e-GIF does not, and could not, include policies, standards or guidelines concerning the technologies the agency needs (not wants) to employ; or

    - an alternative approach to achieving interoperability (e.g. EDI) is justified.

2.2.2. Exemptions from e-GIF

- Where an agency believes there are grounds for exemption from the e-GIF, it must:

    - conclusively demonstrate, to the satisfaction of the e-GIF Steward where the current version of the e-GIF cannot meet requirements, or why an alternative approach to achieving interoperability is justified; and

    - where sensible, contribute to the updating of the e-GIF.

- Where an exemption is approved it will only apply to a specific information system, software application, data/information resource or business process; not the entirety of an agency's information and technology environment and/or business processes.

2.2.3. Special provisions

- Specialist systems employed by, or sponsored by, the security and intelligence agencies are automatically exempted where compliance with the e-GIF is inappropriate.

The benefits of the e-GIF are not specific to the Public Service, or central government. Cabinet has encouraged organisations in the wider State sector to adopt the e-GIF, and invited local authorities to also adopt it.

The e-GIF is open to use by non-government organisations, the business community, and the public. It is also open to use by other jurisdictions.

2.3. Alignment with international environment

The e-GIF provides a framework that facilitates business solutions between agencies at a national level. It must also contribute to this across national borders. To meet this objective, design and maintenance of the e-GIF will ensure that it provides government agencies with a supportive framework that is aligned with the international environment of interoperability policies, standards, and guidelines.

The e-GIF is based on the use of internationally accepted standards. Bespoke policies, standards, and guidelines (i.e. those written by the NZ Government) will only be developed where deemed strictly necessary. Wherever feasible and relevant the e-GIF:

- utilise existing information and technology policies, standards and guidelines[4] that are proving useful in the New Zealand public sector;

- mirror established and open international standards for interoperability (where relevant to NZ); and

- draw upon the Interoperability Frameworks developed in other jurisdictions [e.g. The UK Government's E-government Interoperability Framework (UK e-GIF)].

2.4. Governance of the e-GIF

2.4.1. Governance principles

The e-GIF is an important public asset. The value of the asset must be maximised and maintained across time. A key to this is the governance arrangements that surround the e-GIF. The design of these arrangements reflects the following principles:

- the principles of stewardship and custodianship developed as part of the Policy Framework for Government-held Information [CAB (98) M 22/27 refers];

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[4] See glossary

- clarity of roles, responsibilities and accountabilities; and transparency of decision-making processes, is essential;

- a clear chain of accountability flowing from a Cabinet Minister with appropriate portfolio responsibilities is required;

- consistency of e-GIF governance with public sector legal arrangements is required;

- balancing of the collective interest of government in the e-GIF with the interests of individual agencies and their stakeholders must be a priority. Where this is not possible, the collective interest should be given the greater priority;

- e-GIF maintenance, development and implementation processes should be inclusive and as consensual as practicable; and

- agencies that are required to adopt the e-GIF must be provided with the opportunity to participate in governance of the e-GIF; and must have access to a process for raising valid concerns over decisions made by the Steward or Management Committee.

Governance arrangements must also:

- be supported with adequate organisational resources and capabilities;

- account for the complexity of e-government stakeholder and operating environments;

- ensure ongoing alignment of the e-GIF with the e-government strategy and the Review of the Centre (especially the work stream focussed on integrated electronic service delivery);

- build confidence in, and commitment to, the e-GIF from all its stakeholders; and

- with regard to day-to-day operation of the e-GIF, show a close fit with the responsibilities and capabilities of the organisation(s) involved.

2.4.2. Interim governance arrangements

Based on the above, Cabinet has approved the following as **interim** governance arrangements for the e-GIF:

- the State Services Commissioner is the Steward of the e-GIF, having accountability (and corresponding decision-making authority) for its ongoing development and management;

- the State Services Commissioner may convene, at his discretion, an e-GIF Management Committee to act on his behalf in overseeing the ongoing development and management of the e-GIF;

- membership of the e-GIF Management Committee may be drawn from the senior ranks of agencies adopting the e-GIF;

- in the first instance, the Steward will appoint the E-government Unit (EGU) of the SSC as custodian of the e-GIF, with the responsibility to undertake day-to-day operation of the e-GIF under the oversight of the e-GIF Management Committee;

- the Steward may, at his discretion, outsource the day-to-day operations of the e-GIF to any suitable public or private sector organisation(s); and

- the EGU will establish mechanisms to allow for appropriate input into the development and maintenance of the e-GIF by government agencies and other parties affected by it, including processes for appealing decisions.

This last requirement is formalised in the companion document: *Guide to e-GIF Governance and Business Processes*.

2.5.   e-GIF enhances the capability of agencies

Use of the e-GIF provides an environment whereby government agencies can be more efficient through using the same standards and information exchange environments in different projects and with different agencies. This in turn enhances the value these agencies provide to their stakeholders. To assist agencies in capturing the benefits of the e-GIF, all interoperability policies, standards and guidelines will be clearly defined, beneficial, applicable to agencies of any size, and formulated to encourage good practice.

2.6.   e-GIF complies with legislation

The e-GIF will comply with all relevant NZ legislation and Government policy. In particular, personal privacy and the security of data and information held by government are paramount, and will not be compromised by the design or application of the e-GIF.

3.   OVERARCHING E-GIF POLICIES

The policies below are concerned with non-technical matters that are central to effective functioning of the e-GIF in the business environment of government agencies. Regardless of how any agency applies any of the other components of the e-GIF, these policies have universal application and should be adhered to by all agencies using the e-GIF.

3.1.   Policy Statements

3.1.1. Application of the Policy Framework for Government-held Information

All aspects of the Policy Framework for Government-held Information apply to data and information that is shared, exchanged, or otherwise used or managed, under the specifications or coverage of the e-GIF.

(See: www.ssc.govt.nz/documents/policy_framework_for_Government_.htm)

This requirement extends to the e-GIF itself.

3.1.2. Agencies to develop Interoperability Agreements

Agencies involved in inter-agency projects will sign a formal Interoperability Agreement. The details of this agreement are contained in the *Guide to e-GIF business processes*.

3.1.3. Data and information quality

Data and information quality is of critical importance to achieving the desired outcomes of service integration through the application of the e-GIF, and the inter-agency e-government initiatives it supports. In every instance where agencies exchange data or information under the auspices of the e-GIF, a formal agreement over management of data or information quality will be developed as part of the Interoperability Agreement noted above.

3.1.4. Inter-agency cost recovery

In instances where agencies need to recover operational costs[5] arising from application of the e-GIF these costs will:

- be explicitly identified as part of an Interoperability Agreement, and accrue to the agency or agencies that are the principal beneficiaries of the transaction, except where:

    - the attribution of cost and cost recovery is uneconomic; or

    - public policy considerations justify partial or complete subsidy.

The following legislation, policies and/or guidelines will guide the process (where relevant):

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[5] An example of operational costs are those that may accrue from the delivery and maintenance of different datasets, with one agency agreeing to act on behalf of another, and recovering the costs of doing so. Commitment for capital expenditure to achieve integrated services between agencies will follow normal business process; that is, normal business planning and budget cycles with agencies identifying and agreeing capex streams in advance of projects.

- The Privacy Act 1993

- The Official Information Act 1982

- The Policy Framework for Government–held Information (pricing principles)

- Guidelines for setting charges in the public sector (The Treasury).

4. ELEMENTS OF INTEROPERABILITY

4.1. Five Elements

The e-GIF policies and standards are divided up into five elements. Each element relies on previous categories being present and working, e.g. data for interoperability relies on interconnection for the delivery of the characters. Surrounding all of these categories is:

- the overarching e-GIF guiding principles and polices outlined in sections 2 and 3 of this document; and

- the interim e-GIF governance arrangements.

The five elements are:

- **Business Process Interface:** covering matters needed to allow managers to map processes to support inter-agency business solutions. These processes will also define the services to be presented based on the business solution. This element of the e-GIF will be developed in future versions based on the work underway in the EGU led *e-Services* project

- **Service Delivery:** covering matters needed to provide answers to queries from clients, for example what types of services will be provided, when services are to be expected, how directories that define available services will be maintained (relying on all other elements) –the NZGLS is a component (albeit with a specific focus).

- **Access:** covering matters needed for obtaining access to information, including security (authentication), expected features of defined access methods including presentation for disabled clients, range of expected transactions e.g. peer to peer (relying on data integration element) – (note: the Web Guidelines are a component - albeit with a specific focus).

- **Information Sharing and Exchange *(Data Integration)*:** covering matters needed to allow for the recognition of data, including codes, recognition methods, interpretation, including formats used (relying on interconnection elements).

- **Interconnection:** covering matters needed for the exchange of information between a user and an entity of e-government, including transmission mechanisms, transfer mechanisms (interfaces) that link the transfer medium (the Internet in this case) and an end party, security and protocols for managing the connection.

4.2. Layer Model

The following diagram presents a model of how the various elements interact to provide an interoperability solution.

A business-oriented person would logically approach an inter-agency project with a business need that requires a solution. Managers in the agencies involved in the project would agree and sign-off on the need to produce an inter-agency solution. The provision of this solution would depend on the processes they require to solve their problem, the services or business

functions they expect to use in solving their needs and which people they agree should get access to the solution and what data / information they may have access to and / or update. This may be called the outside-in approach.

Conversely, a technically oriented person, when presented with the business need and the functional requirements to 'build' a solution between agency firewalls would start with determining which applications are required to "hand-shake", and how. The data exchange would then be agreed between agencies, including formats (syntax and meanings) and translations as required to agreed schemas etc. Common access controls could then be applied using agreed directory schemas including the design of alternate presentation formats for various customer needs. The shared information / system could then be presented as a web service to be called from another location using agreed interfaces. This may be called the inside-out approach.

An assumption made in the presentation of the model is that agencies self-manage their internal environments, based on the Open Systems Interconnection (OSI) 7 layer model.

Figure 2: The e-GIF Layer Model
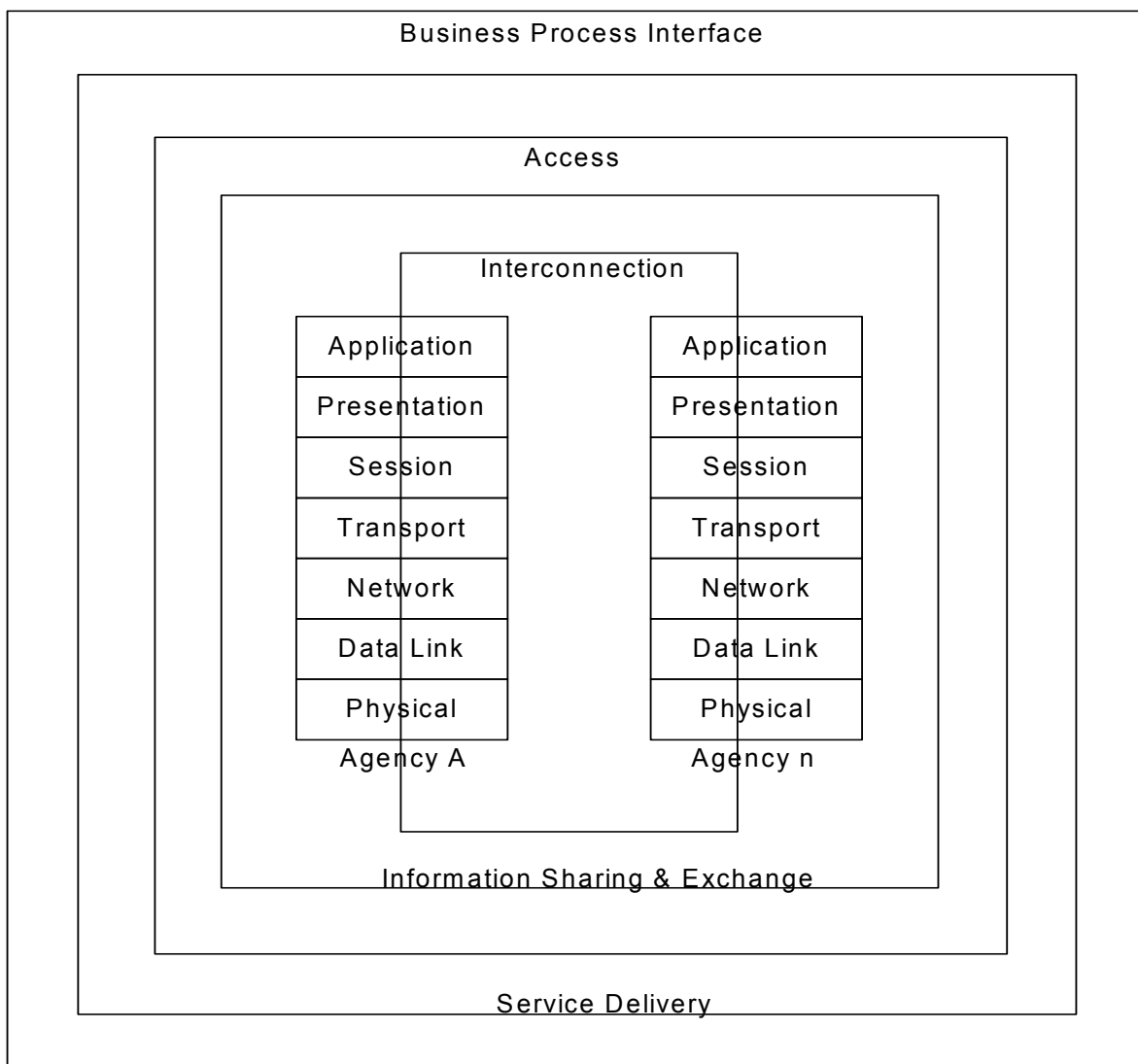
5.   INTERCONNECTION

5.1.   Technical Policy Statements

5.1.1. Networks

Agencies are to interconnect networks using TCP/IP.

IPv4 is acceptable for existing implementations. The e-GIF policy is to migrate to IPv6 when there is competitive support for IPv6 in mainstream network and application products. A co-existence approach is recommended and IPv4 will endure for some time. Our advice is to begin to plan for IPv6 integration and to build the need for co-existence of IPv4 and IPv6 into current procurements.[6]

5.1.2. Mail

Agencies will use SMTP to support email.

5.1.3. Directory

Agencies that require directory interconnection are to use LDAP v 3.0 for new inter-agency initiatives, while maintaining backward compatibility with LDAP v2.0.

Agencies will use DNS for Internet name-to-IP resolution

Notes: Agencies that require interconnection are to ensure that they are aware of the S.E.E. activities and recommendations concerning *Directories*.

5.1.4. Authentication

Agencies that require Authentication for electronic transactions between agencies are to be aware of and adhere to directives and recommendations from the S.E.E. project. Refer to S.E.E. Public Key Infrastructure (PKI)

5.1.5. Security

It is recommended that protectively marked data be handled and transmitted in accordance with the provisions of the Department of Prime Minister and Cabinet publication Security in the Government Sector

Where data exchanges require encryption, SSL v 3.0 128bit is the minimum recommendation for transport security. Where data exchange is to be secured with digital key technology, agencies should adhere to the S.E.E. PKI requirements, i.e. using X.509 digital certificates.

Secure e-mail transfers should adhere to the S.E.E. mail specifications. Also, refer to the data exchange section of this document for current S/MIME specifications.

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[6] Wording adapted from UK e-GIF, Version 3 at express request of contributing agencies

5.1.6. File Transfer

Standards for data transfer between agencies, including database interconnectivity, across networks are HTTP and, for large transfers, FTP. Where FTP is used, restart and recovery facilities are to be used.

5.2.   Standards and Guidelines

Component	Standard for New Project	Guidelines
Networks (TCP/IP)	TCP IP	IPv6
Directory	LDAP v3[7]	
Security	GCSB NZSIT's SIGS SSL v3	SEE PKI
Mail Security	S/MIME	SEE MAIL
File Transfer	FTP HTTP 1.1	
Mail	SMTP	

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[7] Current systems in government are often constrained to using LDAP v2. New projects using the e-GIF will be required to use LDAP v3 and ensure backwards compatibility with v2.

6. INFORMATION SHARING AND EXCHANGE

6.1. Technical Policy Statements

6.1.1. Data Integration

NZ government policy is to use:

- NZGLS for the creation of discovery level metadata;

- XML (standard);

- GML, WMS and WFS schemas for data integration[8];

- UML and XMI for data modelling;

- RDF for description of agency Internet resources such as Website content and online services; and

- XSL for data transformation

6.1.2. Metadata

Agencies will use the New Zealand Government Locator Service (NZGLS) metadata standard for the definition and discovery of government services and resources.

6.1.3. XML

The NZ government will base the use of XML on the recommendations[9] of the World Wide Web Consortium (W3C) to avoid the use of any product-specific XML products / extensions. The purpose of this policy is to ensure that there is structured, consistent, and efficient use of XML within government, based on the W3C XML 1.0 standard.[10]

6.1.4. Agreed Schemas

Agencies will use the XML schemas and schema fragments identified by the e-GIF Technical Working Groups as essential components of interoperability (to be known as 'Agreed Schemas' in the e-GIF) for use across government. The purpose of using such schemas is to minimise the divergence of descriptions and taxonomies between agencies and across government sectors / clusters. Registers for the storing of Agreed Schemas will be compatible with ebXML and UDDI.

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[8] Business systems (current or legacy applications) that are tightly integrated or internal to agencies may use other processing environments. The introduction of current or legacy business systems into new inter-agency initiatives requires the capability to map the outputs of these systems to the agreed XML schemas.

[9] The W3C commonly label their standards as Recommendations (or Requests for Comment – RFC)

[10] Agencies currently using product-specific (or proprietary) XML should be planning to migrate to open standards XML by 2003.

6.1.5. Presentation

Agencies have the choice of presenting text and images in either "open" (i.e. able to be edited) or "locked" (i.e. unable to be edited) forms. Agencies choosing to exchange:

- Text in an open format will use XML or HTML 4.01

- Text in a locked format will use PDF

- Images in an open format will use GIF 89a or JPEG

- Images in a locked format will use PDF

6.1.6. Data Modelling

Agencies will use a standard notation for the modelling of inter-agency business processes, systems, and applications.

6.1.7. Messaging

MIME and S/MIME are the recommended messaging formats for communications between agencies.

6.1.8. Services

Standards for transporting and exchanging web-based services are SOAP and WSDL.

6.2.   Standards and Guidelines

Component	Standard for New Project	Guidelines
Primary Character Set	UTF – 8 bit encoded	
Security	GCSB NZSIT's, SIGS	S.E.E.
Metadata (Discovery)	NZGLS 2.0 NZGLS Thesauri	
Presentation	GIF 89a, JPG – Open PDF – Locked	PNG, SVG
Agreed schemas	- Spatial (GML, WMS, WFS) - Name/Address XnAL	

Component	Standard for New Project	Guidelines
Text	XML, HTML 4.01 - Open PDF – Locked	
Transformation	XSL	
File Compression	.ZIP	
Data Modelling	UML	XMI
Internet Messaging	MIME, S/MIME	
Database exchange	XML 1.0	
File Transfer (Database Connectivity)	HTTP 1.1, FTP	
Web Services (Description)	SOAP 1.2, WSDL 1.1	
Modelling (structured data)		DOM, SAX
Schemas	W3C schemas, XML 1.0	
Registers	EbXML, UDDI	
Structured data description	RDF, DTD (Strict – refer Web Guidelines)	

7.   ACCESS

7.1.   Technical Policy requirements

7.1.1. Government website design, construction and maintenance

When designing and constructing new government websites and/or updating old websites, agencies are to ensure that they use the NZ Government Web Guidelines.

7.1.2. Access (S.E.E. PKI)

(a) Agencies that provide access for staff from other agencies to services and / or business applications across firewalls should be aware of and adhere to directives and recommendations from the S.E.E. project. Note: the requirements for PKI only refer to the management of sensitive information.

Refer to S.E.E. Public Key Infrastructure (PKI) (see §5.1.4).

(b) Agencies providing access for end users to services and/ or business applications are to be aware of the e-government Authentication project and discuss their needs with the Authentication project team, who can be contacted at: authentication@ssc.govt.nz

7.2.   Standards and Guidelines

Component	Standard for New Project	Guidelines
Web design and maintenance	NZ Government Web Guidelines 1.2	
Access		S.E.E. PKI

8. SERVICE DELIVERY

8.1. Policy statements

8.1.1. Service Delivery

Interoperability Agreements between agencies will include Service Level Agreements defining the operational requirements, budget, roles, and responsibilities of all agencies participating in E-Government transactions.

8.1.2. Co-operative Project Approval

Government agencies participating in multi-agency e-government projects will agree on the project operational management processes before initiating significant expenditure on the project.

8.1.3. Information Systems Architecture

Information systems components that enable the integration of government services must conform to the Policies and Standards within the e-GIF. These services may include:

- Integration of business processes.

- Exchanging metadata in support of common business processes.

- 'Bundling' of common services provided to users.

- Integration of business applications to present a common information retrieval point for users.

8.2. Standards and Guidelines

Further policy statements and the supporting standards for Service Delivery are under development in Phase II of the EGU led e-Services project.

9. APPENDIX A – SUMMARY OF TECHNICAL STANDARDS

Component	Standard for New Project	Guidelines
Networks (TCP/IP)	TCP IP	IPv6
Directory	LDAP v3[11]	
Security	GCSB NZSIT's SIGS SSL v3	SEE PKI
Mail Security	S/MIME	SEE MAIL
File Transfer	FTP HTTP 1.1	
Mail	SMTP	
Primary Character Set	UTF – 8 bit encoded	
Metadata (Discovery)	NZGLS 2.0 NZGLS Thesauri	
Presentation	GIF 89a, JPG – Open PDF – Locked	PNG, SVG
Agreed schemas	- Spatial (GML, WMS, WFS) - Name/Address XnAL	
Text	XML, HTML 4.01 - Open PDF – Locked	
Transformation	XSL	

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[11] Current systems in government are often constrained to using LDAP v2. New projects using the e-GIF will be required to use LDAP v3 and ensure backwards compatibility with v2.

Component	Standard for New Project	Guidelines
File Compression	. ZIP	
Data Modelling	UML	XMI
Internet Messaging	MIME, S/MIME	
Database exchange	XML 1.0	
File Transfer (Database Connectivity)	HTTP 1.1, FTP	
Web Services (Description)	SOAP 1.2, WSDL 1.1	
Modelling (structured data)		DOM, SAX
Schemas	W3C schemas, XML 1.0	
Registers	EbXML, UDDI	
Structured data description	RDF, DTD	
Web design and maintenance	NZ Government Web Guidelines 1.0	
Access		S.E.E. PKI

10. APPENDIX B: ACKNOWLEDGEMENT OF UK E-GIF CROWN COPYRIGHT

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Referential Architecture (Proof of Concept)

Resources	Supplied by:
Test Scenarios	Gen-I
	Optimation
	State Services Commission
Test Boxes / Servers	Social Change Online (Australia)
	Gen-I
	SolNet, Sun.com New Zealand
	Optimation
Code / Web Services / Applications / Test Files	Land Information New Zealand
	Optimation
	Social Change Online (Australia)
Digital Certificates	Baycorp Advantage

12. APPENDIX D – GLOSSARY

Agency	Any NZ government entity
Authentication	A way of making sure people are who they say they are so that the right people get access to the right information or service.
Directory	A central list of government agencies and staff that is used within government organisations to manage access to information systems within and between agencies.
DOM	Document Object Model – a tree-based representation of an XML document. The whole document is parsed before the document can be read – considered suitable for small XML documents.
DNS	Domain Name Server
ebXML	E-business XML – a joint project of the UN and OASIS to bridge electronic document interchange (EDI) and XML
EGU	The E-government Unit of the State Services Commission
FTP	File Transfer Protocol
GCSB	Government Communication Security Bureau
GML	Geography Markup Language
Guideline	A statement of desired, good or best practice approved by the Government, or its nominee (i.e. the e-GIF governing body). Generally non-compulsory.
HTML	Hypertext Markup Language – the lingua franca of the Internet
HTTP	Hypertext Transfer Protocol
LDAP	Lightweight Directory Access Protocol
Metadata	Electronic catalogue entries that describe information and services in a structure way. The information in a library card system is metadata that helps you find books you want.
MIME and S/MIME	Multi-Purpose Internet Mail Extensions and Secure Multi-Purpose Internet Mail Extensions
PKI	Public Key Infrastructure – a lock and key system that allows one person to scramble information before sending it to another in a way that can be unscrambled only by the person holding the appropriate key.
PNG	Portable Network Graphic
Policy	A formal statement of compulsory practice made by the Government.

RDF	Resource Description Framework
SAX	Simple API for XML – an event based parser for XML documents that is useful for reading large XML documents as they continue to load.
S.E.E.™	Secure Electronic Environment
SOAP	Simple Object Access Protocol
SSC	State Services Commission
Stakeholder	Any person or organisation with a vested interest in a public resource or the public good. While each agency will have its own definition of stakeholders, they will generally include, Parliament, the Government-of-the-day, individual Ministers, the public, customers, businesses, or other government agencies etc.
Standard	Either a) an agreed process/practice/tool promulgated by an internationally approved Standards setting body, or b.) where such a standard is required but not available, approved by the New Zealand Government (e.g. NZGLS Metadata Standard). Generally, e-GIF standards are compulsory.
Structured Data	Information that has been organised to allow identification and separation of the context of the information from its content.
SVG	Scalar Vector Graphics
TCP/IP	Transmission Control Protocol / Internet Protocol
UDDI	Universal Description, Discovery and Integration
WFS	Web Feature Server
WMS	Web Map Server
WSDL	Web Services Definition Language
XMI	XML Metadata Interchange
XML Schema	W3C extensible markup language (XML) schema definition language for defining the structure, contents and semantics of XML documents.
XSL	Extensible Stylesheet Language