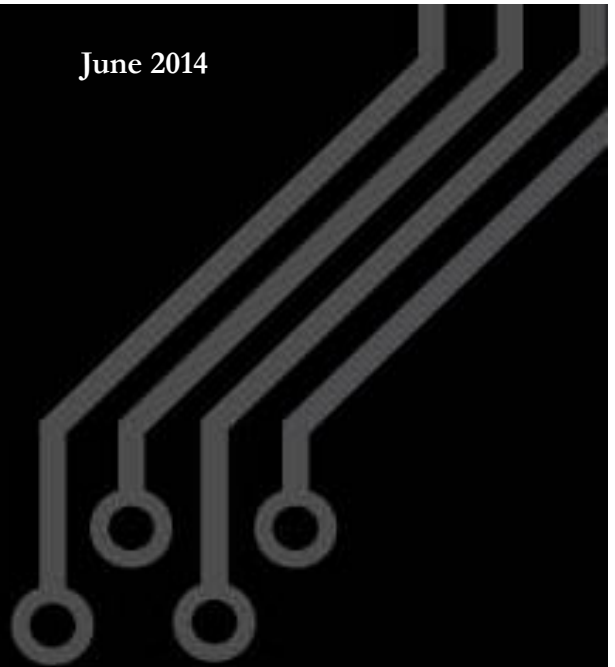NITA
UGANDA
- Driving the IT Revolution -

GUIDELINES FOR DEVELOPMENT AND MANAGEMENT OF GOVERNMENT WEBSITES

June 2014

DOCUMENT DETAIL

Security Classification	Unclassified		
Authority	National Information Technology Authority-Uganda (NITA-U)		
Author	Joint effort of the *Directorate of Planning, Research and Development and the Directorate of E-Government Services.*		
Documentation Status	**Working Draft**	**Consultation Release**	**Final Version** √

CONTACT FOR ENQUIRIES AND PROPOSED CHANGES

Feedback and suggestions on the guidelines are welcome. It will help in enhancing/ refining the guidelines further in future versions, thus making them more comprehensive and relevant. Feedback, suggestions, clarifications and queries on this document may be sent to NITA-U through the Office of the Executive Director on the address below:

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LIST OF ACRONYMS

CMARP: Content Contribution, Moderation, Approval and Review Policy

CMS   :   Content Management System

DNS   :   Domain Name Service

FTP   :   File Transfer Protocol

ICT   :   Information and Communications Technology

HTML: Hyper Text Mark-up Language

IDS   :   Intrusion Detection System

IPS   :   Intrusion Prevention System

IT   :   Information Technology

MDA :   Ministry, Department and Agency

NITA-U: National Information Technology Authority –Uganda

PDAs :   Personal Data Assistants

TVs   :   Televisions

XML :   Extensible Mark-up Language

XHTML: Extensible Hyper Text Mark-up Language

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1   INTRODUCTION

1.1   Background

The Government of Uganda recognises the importance of **Electronic Governance** for National development and transformation into an electronic economy and has put emphasis on anytime, anywhere delivery of Government services through the use of Information Technology.

Furthermore, the huge opportunity provided by the growing Information Age society and the demand for electronic services delivery creates the need to have Government Websites that provide all Citizens with access into the operations and services of their Government, in line with the e-Government Strategy. Over time these Websites should be able to allow consumers to find the information and advice they seek, transact services in a safe and convenient electronic environment, and participate in policy creation and other democratic processes of the Government.

Progressively Government Websites should bring about an end to the need for travel to physical Government offices to transact business. This shall, with time, reduce the compliance burden on each and every citizen.

In Uganda today almost all Government entities have made headway in establishing their presence on the Internet through their Websites. Awareness about the fast changing ICT world and keenness to keep pace with the latest has ensured that almost all Government entities in Uganda already have their websites up and running.

However, these websites follow different Technology Standards, Design Layouts, Navigation Architecture (different look, feel and functionality). This invariably requires a common citizen to familiarize with the functionality of each individual website which results in a lot of inconvenience, thus defeating the very purpose of these initiatives. Therefore, it is imperative to ensure that the Uganda Government entities' websites are aligned with their user needs and expectations while portraying a coherent and uniform image.

The need for standardization and uniformity in websites belonging to Government cannot be stressed enough. Ideally, properly audited technical guidelines should form the foundation of the web.

The use of open standard based tools and technologies for the development of websites as well as content is very important to interoperability and accessibility of websites. The web guidelines in this document adhere to the Web Content Accessibility Guidelines (WCAG) of the World Wide Web Consortium (W3C). W3C is an international body working towards defining standards in web technologies and formats for publishing contents on the web.

The National Information Technology Authority-Uganda (NITA-U) was established to promote, coordinate and monitor the development of Information Technology within the context of national, social and economic development. One of the core functions of NITA-U is to set, monitor and regulate Information Technology Standards as stipulated in the Sections 4(b) and 5(f) of the NITA-U Act 2009.

This document presents the "*Guidelines for the Development and Management of Government of Uganda Websites*", in order to achieve increased accessibility, usability, design, content and security. All Government Ministries, Departments and Agencies including Local Governments (MDAs/LGs) are therefore required to comply with the guidelines stipulated herein in the development and management of their respective Websites.

1.2   Why Government Website Standards and Guidelines

To be successful in providing quality online services, Government MDAs must ensure that the same quality of service principles associated with the delivery of offline services, are applied to online services. This incorporates all aspects of web delivery, from the identification of the objectives for websites and the development of business cases, through to their management and maintenance.

This document provides guidelines for the development, management and maintenance of Government websites that are standard across all Government MDAs and is based on the Web Content Accessibility Guidelines (WCAG) of the World Wide Web Consortium (W3C).

The document should be read, interpreted and applied in context with the relevant laws of Uganda on information access, sharing and protection.

The guidelines stipulated herein are intended to improve the quality, currency and accessibility of online information about the Government and to ensure a consistent experience for the website users.

Many Government MDAs websites have been either developed in-house or outsourced to private web development consultancy firms. These have been developed using different software platforms, tested on different browsers, and hosted on different web servers with inconsistent domain names. The information architecture, classification, and information outlay also vary widely in these websites which has often resulted into:

i.   Inadequate and inconsistent online communication and service delivery across a good number of government departments;

ii.   Duplication of information which also result into content inconsistence when one website is updated without updating others

iii.   Fraud and impersonation

iv.   High levels of cyber-attacks, i.e. Phishing, Pharming, Cross-Site Scripting etc.

v.   Inadequate accessibility concerns for special groups of people; and

vi.   Limited service resulting from, sections/entire website not accessible

1.3 Scope and Objectives

This document provides guidelines for development and management of Government of Uganda websites and portals. It is intended to ensure that Government websites are made citizen centric and visitor friendly.

The guidelines stipulated in this document address common policy issues and practical challenges that Government Departments face during development and management of their websites. The guidelines aim to assist Government Ministries, Departments and Agencies including Local Governments in ensuring that their websites conform to internationally recognized best practices.

Compliance to these guidelines will ensure a high degree of consistency and uniformity in content, coverage and presentation of information and shall further promote Uganda online.

1.3.1 Objectives

The main objective of this document is to provide guidance on the development and management of Government of Uganda Websites thereby improving the quality, reliability, accuracy and accessibility of online information pertaining to Government MDAs/LGs and to ensure consistent experience for all users.

The specific objectives include the following:

i. To ensure that Government, Ministries, Departments and Agencies meet the broader communication objectives of the Government of Uganda.

ii. To ensure that Government MDA websites are updated, maintained with accurate information/content for public consumption.

iii. To ensure that Government MDA websites are usable and easily accessible by the citizens.

iv. To ensure uniformity in design as well as domain nomenclature for all Government MDAs/LGs websites.

v. To guide IT personnel in designing, developing, managing and securing the websites within their respective Government MDAs/LGs.

1.4 Universal Accessibility

The term '*Universal Accessibility*' refers to making a website accessible to ALL irrespective of technology, platforms, devices or disabilities of any kind. In other words, all Government MDAs should consider the needs of a broad spectrum of visitors, including general public, specialised audiences, people with disabilities, those without access to advanced technologies, and those with limited English proficiency and ICT skills. Guidelines to address these needs have been given in various sections of this document.

Most pertinent guidelines have been marked as mandatory while others have been made advisory or voluntary. Following the mandatory guidelines shall ensure compliance to **W3C Web Content Accessibility Guidelines (Level A)**

1.5 Definitions and Conventions

Users/Visitors

Throughout this document, the broad term 'visitors/users' encompasses all those who visit and use the Government MDAs Websites for their needs with regards to access.

Government Entities

All Government entities owning a website; shall be collectively termed as Ministries, Departments, Agencies (MDAs).

1.6 Compliance to Guidelines

These Guidelines have been developed with an objective to make the Ugandan Government Websites conform to the essential pre-requisites of *Usable, User-Centric and universally* accessible.

They also form the basis for obtaining Website Quality Certification from the National Information Technology Authority-Uganda (NITA-U).

The Guidelines stipulated herein are based on *International Standards ISO 23026*, *W3C's Web Content Accessibility Guidelines*. It further makes references to the various laws of Uganda such as the *Access to Information Act 2005* among others.

The various stakeholder experiences in the design, development and management of Government Websites and the knowledge of ground realities and challenges faced by Government MDAs in developing and managing their websites; have helped significantly in drafting these guidelines.

These guidelines are being circulated to all Ugandan Government entities and should be implemented and complied with to ensure that Government websites are citizen focused.

1.7 Enforcement of the Guidelines

The following enforcement guidelines shall be followed:

i. All Government MDAs are expected to read, understand and implement these guidelines on all their web-based initiatives.

ii.   All Websites set up and owned by each Government MDA MUST comply with these guidelines.

iii.   Browser Intranet applications within the respective Government MDA may also follow these guidelines.

iv.   The respective Government MDAs may draw their short term and long term timelines, depending on their specific requirements for compliance with these guidelines.

v.   Government MDAs which develop their websites in-house or by outsourcing a third party developer shall use these guidelines as a checklist for ensuring compliance.

vi.   Where a third party has been contracted to develop a given MDA Website, all design, testing and commissioning documents shall be provided and handed over to the Government entity prior to sign-off and closure of the Project.

1.8   Structure of the Guidelines

The Guidelines are divided into three categories viz. mandatory, advisory and voluntary. Explanation and requirement of each of these categories is given as follows:

Mandatory

Where the term '**shall**' have been used in this document, it signifies requirements which can be objectively assessed and which the Government MDAs are supposed to mandatorily comply with.

i.   It is anticipated that there will be no exceptions for any Government entity not complying with the mandatory requirements.

ii.   All Government MDA Websites shall be verified against mandatory requirements during compliance audits for purposes of quality Certification.

iii.   It is the responsibility of each Government MDA to address any non-compliant issues found in any website under their ownership.

Advisory

The term **'Should'** in this document refers to recommended practices or advisories that are considered highly important and desirable but for their wide scope and a degree of subjectivity these guidelines would have otherwise qualified to be mandatory. All Government MDAs are expected to comply with these advisories.

Voluntary

The usage of the term 'May in this document refers to voluntary practice, which can be adopted by an institution if deemed suitable. These have been drawn from good practices that have proved successful and will give guidance to the respective Government MDAs in achieving high quality benchmarks for their Website endeavours.

2 UGANDA IDENTIFIERS

2.1 Uganda Government Identity

The reliability and authenticity of Government MDA websites is an important factor to be considered. Visitors to a Government website are concerned about the reliability and authenticity of the official status of the website before trusting its contents.

It is important to let visitors know that the information and services being offered on a given Government MDA website is official.

All Websites and Portals under the Government of Ugandan Domain at any hierarchical level (top government Offices, Constitutional Bodies, Ministries, Departments, Organisations and District Administrations) must prominently display a strong Ugandan Identity and ownership of Ugandan Government.

In order to achieve the above objective, the guidelines stipulated below shall be adhered to:

1. The National emblem (Uganda Coat of Arms etc.) should be displayed on the homepage of the websites of Central Government Ministries. The use of the National emblem such as the Uganda Coat of Arms should be in accordance with the provisions of the National Flag and Armorial Ensigns Act 1962.

2. The Government departments and Agencies/autonomous bodies shall display their official logos on the homepage of their respective website to re-enforce their identity.

3. The homepage and all important entry pages of the website shall display the ownership information, either in the header or footer.

4. The lineage of the Department should also be indicated at the bottom of the homepage and all important entry pages of the website. For instance, at the bottom of the homepage, the footer may state the lineage information, in the following manner:

5. MDAs shall ensure that all subsequent pages of the website display ownership information in a summarised form. It is important that each webpage belonging to a site displays the relevant ownership information.

6. For Websites belonging to Inter-Departmental initiatives involving multiple Government Departments and Agencies which are difficult to list on the homepage, the Government ownership shall still be reflected clearly at the bottom of the page with detailed information provided in the '*About the Portal/Website' section.*

7. The page title of the homepage MUST be complete and shall be displayed as Government of Uganda, followed by the name of the respective Ministry or the name of the Department/agency followed by Government of Uganda. This will facilitate ease of identification, increase in visibility across the different search engines and provide support for visually impaired users to avoid confusion

2.2 Government Domains

2.2.1 General Information

The Universal Resource Locator (URL)/Domain name/Web address of any Government website is a strong indicator of its authenticity and status as being official. The role of a designated Government domain name assumes a lot of significance especially with the proliferation of Websites which resemble Government Websites and fraudulently claim to provide reliable Government Information and Services.

Establishing a commonly acceptable Domain Name Service (DNS) naming convention, departments will establish their online identity while minimising complexities of choosing a name. Knowing particular domains of the department will be very simple since a particular pattern will always be followed.

2.2.2 Domain Nomenclature

Domains under **go.ug** shall be registered under the following categories:

NO.	INSTITUTION	DOMAIN FORMAT
1.	National/Government of Uganda Web Portal	*Gov.ug*

2.	Ministry	Ministry.*go.ug*
3.	Districts	Dist.*go.ug*
4	Agencies	Agency.*go.ug*
5.	Departments	Department.*go.ug*
6.	Uganda foreign Missions	city.mofa.*go.ug*
7.	Urban councils	Location.*go.ug*
8.	Tertiary Institutions	institution.*ac.ug*
10.	Secondary schools	school.*sc.ug*

*In keeping compliance with the Government Domain Name Policy, all Government Websites must use **.go.ug** exclusively and restricted only to Government Websites. The above naming Policy applies to all Government Websites irrespective of where they are hosted.*

2.2.3 Guidelines for choosing a Domain name

It is the responsibility of the respective Government MDAs to choose a suitable domain name. A set of guidelines for selecting a suitable domain name to align with the overall policy on registrations of domains under the *Top Level Government* domain **(.go.ug)** is given below:

i. Choose a single short name (word) that establishes the identity of the department, provided that the name is not a common/generic name shared by two or more departments (e.g. immigration, health, defence etc.).

ii. Choose abbreviations that are easy to remember (ura.go.ug, unra.go.ug, etc.). This is more appropriate for agencies with permanent existence.

iii. Prefix or suffix D or M (to denote Department or Ministry) and insert O (to denote Of) within an abbreviation to make it more memorisable (e.g. mofa.go.ug)

iv. Use shorten forms if it makes sense (e.g. meteo - meteorology, exams - examinations)

v. When there are unrelated/multiple subjects assigned to the department, choose the most important or well-known subject (which is less likely to change) for the domain name.

vi. In case of Districts, Divisions and Local Government agencies where the area name is longer, shorten it in a meaningful and memorisable manner.

vii.   Dash or underscore is not recommended

viii.   Characters like $, @, % etc. are not allowed and shall not be used.

2.2.4   Procedure for Registering a Domain Name

All Government MDAs that wish to register domain names shall submit their applications to National Information Technology Authority-Uganda (NITA-U). The process of verifying and setting up a domain name should not take more than 30 calendar days from the date of request.

2.2.5   Guidelines for change of domain names

A Government MDA may change its domain name for the following reasons.

i.   To comply with new Government policy , standards and guidelines

ii.   Due to changes in Government MDA portfolio (e.g. creation of new Government Institutions as may be required by political and legislative structures)

iii.   A Government MDA may change its domain name based on user preference in such cases the Institution shall weigh the various reasons from the least significant to the most significant:
   (a) To leave the domain name unchanged if the changes to the portfolios of the Government MDA do not substantially affect the domain name

   (b) To leave the domain name unchanged if the Government MDA changes do not substantially affect domain name (subjects not fully changed),

   (c) To change only the web domain name, leave e-mail addresses unchanged,

   (d) To change the domain name (Web and E-mail) to reflect new name

iv.   Government MDA shall register the new domain name in accordance with the policy and procedure of registering a domain names, this shall be accomplished through the National Information Technology Authority-Uganda (NITA-U).

v.   The old domain name shall exist for a period of Six (6) months with a redirection page to the new domain name with notification to all users.

vi.   The E-mail address of the old domain name shall carry an auto response to send mails to new address and that all mails shall be forwarded to the new mail ID assigned.

2.2.6   Domain Dispute Resolution Procedure

Any dispute between parties with regards to domain name registration/use will be amicably resolved through the National Information Technology Authority (NITA-U).

3 WEBSITE DEVELOPMENT AND MANAGEMENT

3.1 Government Information on Line

A crucial element of an effective web presence is quality and relevance of information posted on Government websites since the internet is becoming a preferred means of accessing Government Information and services.

Government MDAs shall develop websites that contain informative and up-to-date content that is well-written, caters for the needs of a wide range of audiences and is easily accessible. MDAs/LGs must therefore ensure that:

i.   Information provided is current

ii. Information provided on website meets the needs of consumers

iii. There is a consistent approach across websites

iv. At least a minimum set of information is provided

Information presented on a government website must be consistent with government policies to avoid the possibility of damage to both the government and consumers if information is incorrect or inappropriate.

There shall be a similar structure applied across government websites to achieve consistency which is important in helping consumers to access government information more effectively online.

3.1.1 Recommended Level of Information Provision

The provision of Government Information online shall be guided by the following:

i.   As best practice, it is recommended that all Government MDAs shall include publications that are available to the public through other forms of media (such as hardcopy or audio) on their websites. The same shall be captured and linked in the online library. However, where this is not practicable-due to, high costs, limited benefits, low demand, publication complexity - information on how to obtain a copy in its original form should be posted on the Website.

ii. Any decision not to publish information in electronic form shall rests with an appropriate Senior Executive or delegate within a given Government MDA.

iii. Information meant for internal consumption of the staff in a given Government MDA should only be disseminated through Intranets to avoid misinterpretation and confusion of public visiting the Government Website

3.1.2 Minimum Content for all Government MDA Websites (Home Pages)

There are certain necessary information elements which are important in a Government MDA website. Users expect to find the same minimum content on all Government Websites under the same links.

It is therefore required that homepages shall include but not limited to:

(a) **Website Banner**

      i.   Government of Uganda Coat of Arms

      ii.   Government MDA Name

      iii.   Government MDA Logo, where applicable

      iv.   Colors of the National flag

(b) **About the MDA, and links to:**

      i.   Organizational set-up

      ii.   Role and Functions (Mission, Vision, Mandate)

      iii.   Major projects and Schemes

      iv.   Public Services

      v.   Publications e.g. Annual reports, strategy documents, portfolio budget statements

      vi.   Customer Service Charter

      vii. Government Tenders

      viii. Press Releases/Announcements

      ix.   Associated Organizations (Related Links)

      x.   Messages/Speeches from the Minister / Permanent Secretary

      xi.   Contact Addresses / Telephone Number / Email of the Senior Officers and Important Functionaries of the Ministry/Department

      xii. A feedback/comment page and FAQS

(c) Search Engine

(d) Site Map

(e) Date, time, currency, telephone details

(f) Physical location information

The manager (s) of the respective Government MDA websites must continuously endeavour to determine the kind of information that would benefit the website's audience so as to provide it appropriately.

Individual pages for the respective Government MDA websites should have a consistent look and feel.

It is recommended to include in the footer details at the base of each page i.e. the date created and last updated date, where technically possible, and a link to the *"Contact Us"*, *Privacy statement* and *disclaimer pages.*

3.1.3 Information Request and Feedback

All Government MDAs shall provide the following Information for information request and feedback from the Public:

i.   Full contact details, Physical Service locations, Fax and telephone numbers, and Mailing addresses.

ii.   Email addresses for the entity responsible for maintaining the website for the purpose of reporting fault shall be provided.

iii. A general enquiry email address for the MDAs shall be created/established so as to protect the individual name and person, which consumer can contact with regard to the Government MDA service offerings.

Feedback from the public shall be gathered through the following means:
i.   Feedback shall be collected through online forms
ii.   Feedback forms shall be prominently displayed on the website.
iii. Government MDAs shall respond to feedback and provide guidance on how the forms are processed.
iv.   Government MDAs shall endeavour to provide specific period for which responses to issues raised by the Public will be provide. All responses to issues raised by the Public shall be provided in accordance with the Access to Information Act 2005.

3.1.4 Legislative and Sector Information

Policy documents, legislative and sector information related to the Government MDA shall be provided on the website. This information shall not be duplicated on any other MDAs websites, instead links shall be provided to relevant resources at the various source websites. These shall include, but not be limited to the following:

(a) The Constitution of Uganda
(b) Legislation and legislative status information
(c) Bills and Acts
(d) Sectoral policy documents
(e) Circulars and Policy Documents,
(f) Publications and Reports including:

i.   Government MDA annual plan documents

ii.   Government MDAs annual Reports

iii.   Budget Documents

iv.   Best Practice Guidelines (*Project Implementation, financial management, operations and Security and maintenance etc.*)

v.   Citizen Charters

vi.   Government of Uganda Census Documents

vii.   Survey Outcomes/Reports

viii. Statistical Reports among others.

(g) All information/materials/announcements and events that have expired shall be archived or deleted from the Government Websites or both depending on the archive policy of the Government MDA.

(h) All important announcements should also be published on the Government Web Portal for wider access by the Public.

3.1.5 Electronic Forms

There are several types of forms that can be used to present and collect information from users; (Interactive forms, e-forms and downloadable forms).

i.   Government MDAs shall ensure that for interactive forms, appropriate security precautions shall be put in place to safeguard user information during transmission and storage.

ii.   MDAs shall ensure that e-forms and downloadable forms are in compatible formats and where special software is required, a link to download it must be provided. For these types of forms, pdf format is recommended.

iii.   Government MDAs shall continuously endeavour to provide online interactive forms, and where not possible, a downloadable format shall be made available.

3.1.6 Information not permitted on MDAs Websites

The following guidelines shall be adhered to:

(a) Government MDAs shall not post information that does not promote their mandate. In addition, the following content shall not be permitted:

i. Commercial banner advertisements

ii. Personal information

iii. Politically partisan content

iv. Information in text, visual or any other media which may offend/harm the National sentiments, religious communities as well as security and integrity of the Country shall be avoided on the websites.

v. Information which is confidential or only for restricted use should be avoided on a website meant for the public.

vi. Physical and information security procedures.

vii. Information about organization's network and information system infrastructure (e.g., address ranges, naming conventions, access numbers)

viii. Plans, maps, diagrams, aerial photographs, and architectural plans of organizational building, properties, or installations

(b) Government websites can however acknowledge sponsors and partners at a section on their website but this decision rests with the appropriate Senior Executive within the given Government MDAs, provided it is consistent with Government policy.

(c) Banners that promote and link to other Government MDAs are permissible, provided that no fees are charged in placing such banners.

3.2 Website Design and Content Management

The following guidelines shall be adhered to in the design of Websites and management of Content:

(a) Government websites shall be developed in a precise, concise and objective manner. To ensure content is suitable for the web, three main principles shall be considered:

i. Be concise; highlight only key aspects and provide links to the original content.

ii. Write for scannability; users should not be required to read long continuous blocks of text. Use links to split up long text into multiple pages.

iii. Use plain English; hyped promotional writing, departmental jargon or bureaucratic language should be avoided.

(b) Government websites shall be developed using a Content Management System (CMS). The CMS shall be used to ensure proper and easy management of Web content.

(c) Website design shall have a consistent layout to aid in navigation and incorporate a help facility. MDAs shall use a pre-designed website template to establish a visual identity and apply it throughout the Website. This template shall be provided to Government MDAs by the National Information Technology Authority-Uganda following relevant consultations.

3.3 Guidelines for Website Design and Structure

3.3.1 Audience

The following guidelines shall be considered in the development of Government MDA Websites that can accommodate all target groups/users:

i. Government websites shall aim to be inclusive to all users, bearing in mind the wide range of consumers' circumstances, computer and other access devices capability, technical knowledge and interests. The website structure shall be user-centric.

ii. In order to ensure accessibility for all citizens, Government websites shall respond to consumer requirements. In planning websites an MDA shall carry out market research and consultation with the target audiences and the general public. This shall be done periodically as part of a quality review process.

iii. Government MDAs shall ensure that web content is more accessible to people with disabilities including visual, auditory, physical, speech, cognitive, language, learning, and neurological disabilities.

3.3.2 Website Hierarchy and Structure

Government MDAs shall consider the following guidelines in the design of the website hierarchy and content management structure:

(a) Government MDAs shall establish a clear web content management structure. Website structure entails organizing the website's content, information flow and category or subject hierarchy in such a way that users can logically move through the website with ease, track their progress and determine their location within the website on any web page by use of a site map.

(b) Taking into account consumer expectations and the functionality to be delivered, Government MDAs shall provide either:
   i. A hierarchical structure, where pages are grouped according to a number of attributes or categories. This is the most effective method for organizing large volumes of information; or

ii.   A linear structure, where pages are presented in a logical sequence. This approach is best suited for search results that present information alphabetically or according to ranking;

iii.   Or a combination of the two as the circumstances may demand.

3.3.3   Page Layout

Page layout is a significant consideration in the overall design interface for any Website. The following considerations shall be taken into account to achieve well laid out Web Pages:

i.   Government MDAs shall endeavour to design pages that are informative, inviting, concise and easy-to-read and organize content using headings.

ii.   Webpages shall provide enough information for visitors to recognize what is being offered, explore further and easily navigate the website. The design should minimize clutter in the form of distracting animations, splash pages, unnecessary graphic elements and blinking or scrolling text.

iii.   A consistent page layout shall be maintained throughout the site. And that the placement of navigation and text elements should be uniform across the website.

iv.   Government MDAs shall focus on important elements of the Webpage, so that the visitor may be guided to those portions, which deserve most attention.

v.   All components/elements on a Webpage shall be clearly marked/labelled.

3.3.4   Navigation

Government MDA websites shall use navigational links and labels that are easily recognized and widely accepted such as Home, About Us, What's New, Media Releases, Publications, Search, Contact Us, Useful Links, Site Map, Feedback and Help.

To provide consistent navigational links, Government MDAs shall ensure:

i.   The navigation system shall be insightful to help consumers easily locate information or services

ii.   Links to the home page and the search facility shall be provided on every page.

iii.   Breadcrumbs" are provided at the top of each web page

iv.   Provide ways to help users navigate, find content, and determine where they are by ensuring tab order reflects navigational sequence.

v.   Ensure all related content is linked internally within the site wherever needed (to allow the user find cross-referenced content easily)

vi.   To have a fixed navigation area which gives highest level links to all main website sections.

vii.   That the navigation system is cross-browser compatible.

viii.   That the navigation is consistent and predictable with Consistent Content Terminology and Positioning adopted across Government MDA Websites.

ix.   Consistency in nomenclature should be maintained across a website and be followed across all the Websites owned by Government MDAs.

x.   To have well-planned information architecture which accurately reflects your visitor need.

xi.   Ensure that navigation is tested and it meet's user requirements

xii.   To follow the three click principles, that if the user needs more than three clicks from anywhere in the site to get what they need, then the navigation/site structure is too complex.

3.3.5 Web Graphic, Images and Multimedia Guidelines

Government MDAs shall consider the following guidelines for the use of Web Graphics:

i.   Use thumbnails as one of the technique for displaying large graphics. If this method is used, consider to use full-sized graphics on the "printer-friendly" version.

ii.   Each graphic should be captioned clearly and numbered.

iii.   Use the most optimal and commonly used file formats such as PNG, JPEG, GIF etc.

iv.   Interlace large GIF files to speed up downloads.

v.   Design and develop Websites for screen resolution set at 1024 x 768 Pixels. In addition, ensure that all tests are performed under this screen resolution. This should support dynamic browsers as well.

vi.   Use background images carefully and make sure they are simple and keep the image resolutions as low as possible so that it does not affect download speed.

vii.   Optimize the image capacity so that it does not affect page download which may cause unnecessarily timeouts.

viii.   Limit the use of images on Government MDA Websites. Where images are used ensure they add value to the success of the Government MDA or to the success of the Website and make sure the images used do not irritate the users/visitors of the Website.

ix.   Use multimedia (video, animation and audio) meaningfully especially when they are intended to convey critical messages to the users/visitors of the Government MDA Website.

x.   Where animations are used on the Government MDA Website, provide prior explanations before they are displayed and ensure that they are user-controlled by mute, pause and replay or ignore multimedia elements.

xi.   The use of images should symbolize real-world items and should be used appropriately to convey the exact/intended message to the users/visitors of the Government MDA Website.

xii.   Use images to facilitate learning, pass information more efficiently and whenever possible use images in place of text.

xiii.   The use of photographs on the Website should portray the messages being conveyed. Seek appropriate approvals prior to use of any photographs on the Government MDA Website. And Government MDAs shall ensure that the intention for the use of the photograph is made clear and understood by those whose photographs are to be posted onto the Website.

3.3.6   Colours and Background

In choice what color to use for the text and background, Government MDAs shall adhere to the following:

i.   Stick to conventional colors which reflect professionalism and style.
ii.   Use a color-scheme which is in-line with Government MDA image.
iii.   Use colors which match the colors in Government MDA corporate logo.
iv.   Utilize a uniform color theme throughout the whole website.
v.   Avoid textured backgrounds as they blur the clarity of screen-text and increase download sizes.
vi.   Don't use color combinations which clash with one-another such as red and green.
vii.   Use colors that enhance the readability of screen-text.

3.4   Quality of Web Content

Government MDAs shall ensure that the content created for the website is of high quality, accurate, current and meets the needs of the users and the requirements of the Government of Uganda. Within these recommended parameters, an MDA shall adhere to the prevailing guidelines provided.

3.4.1   Development of Website Content

The following guidelines shall be considered during content development:

i.   Government MDAs shall ensure that homepages, major entry points and navigational elements of Websites are written in clear and simple language appropriate for the sites content.
ii.   In Uganda there are diverse target audiences with diverse demographic profiles as well as educational background. It is highly desirable that the language used for developing Web Contents is easily and correctly understood by all sections of the audiences.

iii.   In situations where some information has been localized in a particular local language for a particular section of the public, Government MDAs shall ensure that the information is posted on the Website along with its English version/alternative text.

iv.   In developing Web content, Government MDAs shall adopt the use of short and concise sentences which are simple to understand and comprehend. Long, convoluted sentences seem unfriendly on screen and can distract the visitors of the Website.

v.   Government MDA shall ensure that, Web contents are free from grammatical errors/spelling errors. It is important to ensure that quality assurance is conducted for all Web contents prior to posting onto the Website.

vi.   Government MDAs shall ensure that the use of acronyms and abbreviation is avoided /minimised and where they have been used, their full form must also be provided.

3.4.2 Management of Web Content

Content is key to every website. Government MDAs shall therefore continuously endeavour to create web content that reflect relevancy and currency. Presentation of content shall seek to limit each page to one concept as well as provide information based on the *six (6) principles of journalism*: who, what, when, where, why and how and ensure that the content is written in a style suitable for the web.

Content Management is a mix of business practices and technical processes for authoring and collecting information for website, keeping it current and publishing it.

Below are the general guidelines that Government MDAs shall use in the management of Website content:

i.   **Continuous Review:** There should be an established review and refresh process to ensure content is up to-date, relevant, consistent, authentic and unambiguous. Some content may need updating daily or weekly, whilst other areas may need review once a year.

ii.   **Breach of Copyright:** Government MDAs need to be aware of the potential for copyright breaches arising from unauthorized use of material.

iii.   **Allocate Functions:** In the content management process, define functions such as content author, owner, reviewer, editor, publisher etc. It's important all these functions are addressed.

iv.   **Approval and Publishing Process:** There should be some formal process for content review, authorization, testing and publishing with the appropriate workflow between these phases.

v. **Version Control:** Ensure that builds and updates are version-controlled to avoid confusion by the end-users. Periodic backups of the past few versions should be archived for a reasonable timeframe.

vi. **Align with Standard/Policy:** The content presentation must be in synergy with Government MDA Policy.

3.4.3 Characteristics of Web Content

Government MDAs shall ensure that web content has the following characteristics:

(a) **Presentability** – Consider the characteristics of created documents and how to best present them. Downloadable versions are recommended for lengthy documents. For PDF files, provide a link to the latest Document Reader.

(b) **Authenticity** – Each document included shall contain the following, but not limited to:
   i. Status of the document, where applicable
   ii. Author and date
   iii. Version and location of the original publication
   iv. Contact details and feedback mechanisms

(c) **Adaptability**; Create content that can be presented in different ways without losing information or structure

(d) **Functionality;** Web components shall work correctly and quickly

(e) **Usability;** Website shall be simple and well organized

(f) **Relevancy;** Web content shall be meaningful to the target audiences

(g) **Distinguishability;** Make content easier for users to see and hear including separating foreground from background

(h) **Operability –** All functionality of the content should be operable through a key board interface without requiring further user intervention

(i) **Readability;** Make content readable and understandable

(j) **Well-written;** good grammar and spelling
   i. Appearance; shall be appealing to the target audiences
   ii. Timely; up to date content

iii.   Compatibility; Content shall be accessible through the various media, end user devices and across different browser platforms

(k) **Robustness**; Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.

3.4.4   File Formats

During development of Web content, it is important to consider the file format to use. The following guidelines provide minimum requirement for the choice and use of file formats:

(a) Government MDAs shall provide text alternatives for graphics, video and audio clips as well as ensure that all the content takes care of the people with visual and hearing disabilities.

(b) To ensure consistency, compatibility and fast-loading pages, it is recommended that the following file formats be used.
   i.   Document – All downloadable documents shall be in PDF format
   ii.   Audio – Audio files shall be in .mp3 format
   iii. Video - Video files shall be in .mp4, .flv formats
   iv.   Graphic – Image files shall be in .JPG, .GIF, .PNG formats

(c) While it is important to include multimedia content including text, audio, still images, animations, video and interactive content forms, Government MDAs shall ensure that such content does not distract from the main message, irritate users or lead to unacceptable download times.

(d) Assistive technology, in some cases - screen readers, alternative keyboards, and switches, scanning software shall be used.

3.4.5   Writing Style

While writing for the web, Government MDAs shall endeavour to:

   i.   Make the text easy and quick to read
   ii.   Use highlighted keywords
   iii. Use meaningful/descriptive titles, link texts and subheadings
   iv.   Use bulleted lists
   v.   Use plain English - Avoid acronyms, jargon, and complex words.
   vi.   Ensure content is free of material that could be generally considered offensive.
   vii. Use correct punctuation.
   viii. Ensure correct spelling is used.

ix.   Check the context in which the writing is done to ensure correct wording is used.

3.4.6 Text Formatting

Web content shall be presented in suitable font sizes and styles. When formatting text, MDAs shall endeavour to:

i.   Use font size 12 for legibility and readability of text. Users should be presented with an option of font size adjustments.

ii.   Maximize readability by making text left–justified.

iii.   Use the bold font style, for highlights or emphasis.

iv.   Avoid underlining text. It can be mistaken for a hyperlink.

v.   Avoid using colour text. This may be difficult to read or may present difficulty for the colour blind.

vi.   Italicize references to published documents such as reports, Acts.

vii.   Ensure headings are in sentence case format, with the initial letter of the first word capitalized, with all remaining letters, except for proper nouns, in lower case.

viii.   Caption acronyms wherever they are referred and a list of acronyms and glossary shall be provided.

3.4.7 Web Development

(a) Government MDA websites shall be developed with the most up to date technology among which may include but not be limited to the following:

i.   HTML

ii.   XHTML

iii.   XML

(b) Government MDAs websites shall endeavour to use Cascading Style Sheets (CSS) as much as possible to control layouts/styles.

(c) Server side scripting languages should be preferred over client side since client side scripting may face issues of browser compatibility, scripts being turned off by browsers, security, among others.

(d) Websites should be validated and tested with both automatic tools and human review.

3.5 Website Management

Below are the general guidelines for the management of Government MDA Websites:

i. Government MDAs shall ensure that delivering information and services on the Internet is managed with the same level of quality and commitment as that employed when delivering information and services using conventional methods.

ii. The management of online services in a Government MDA requires the establishment of a Website management committee, with representation from all key departments including a Webmaster. The committee shall be required to develop and oversee implementation of a Website management strategy.

iii. The NITA-U through the Directorate of e-Government Services shall ensure conformity to the laid down guidelines by constituting a web management team.

3.5.1 Website Management Committee

The ownership of a give Government MDA website, the quality, relevance and currency of its content shall be vested in the Accounting/Authorized Officer. The Website Management Committee shall constitute of:

i. Accounting/Authorized Officer - Chair
ii. Head of ICT Unit – Secretary
iii. Head of Communications
iv. A representative from key directorates/departments/units
v. Public Relations Officer (PRO)
vi. Legal Officer
vii. Webmaster

The Website Management Committee shall be mandated to:

(a) Ensure that websites are developed and maintained according to the set standards, policies and guidelines and that the Government MDA informs NITA-U of their compliance;

(b) Ensure that the website is positioned as a major communication and service delivery tool;

(c) Collate and validate web content;

(d) Identify and recommend the resources and support requirements to ensure effective website performance;

(e) Ensure that online systems are developed and integrated so as to maximize access, effectiveness and ease of use;

(f) Undertake periodic web content reviews to ensure the integrity, reliability, accuracy, currency, consistency and completeness of the content.

(g) Formulate a web security plan/policy to address various security issues;

(h) Develop strategies:
   i. To ensure the web content is maintained and presented in a manner that supports communication and service delivery objectives
   ii. To ensure the web content and enquiry solutions for customer relationship management are built on sound business processes and workflow practices
   iii. For promoting the website
   iv. For content lifecycle and archival management

(i) Prepare and submit quarterly reports on the status of implementation of the Government MDA website management strategy to the NITA-U.

(j) Review cabinet/ministerial correspondence for possible improvements that may be undertaken

(k) Monitor reported problems and consumer queries over a period of time ensure appropriate corrective action is taken and that user feedback is responded within stipulated Service Level Agreements.

(l) Undertake consumer surveys, refine the service objectives of the website in light of results from the surveys and keep access statistics and realigning the website information and services as appropriate.

(m) Give approval for decommissioning of Government MDA website(s)

3.5.2 Website Management Strategy

The website management strategy shall include activities and timelines, as well as the development and regular review of all plans associated with the website, including:
   i. Objective of the strategy

   ii. Online services plan

   iii. Financial plan

   iv. Information management plan to include content maintenance, timely updating and decommissioning of websites

   v. Electronic record management and archiving plan

vi.   Information Education and Communication (IEC) plan

vii.   Customer relationship management plan

viii.   Monitoring and Evaluation plan

ix.   Website security plan

x.   Risk management plan

xi.   Hosting Plan

3.5.3 The Webmaster

Government MDAs shall appoint a webmaster who shall update web content on a regular basis with the approval of the website management committee. Consideration shall be given to new features being promoted to consumers and closely monitor their responses. Webmaster duties shall also include but not limited to:

i.   Designing and publishing web pages

ii.   Installation of web software(s)

iii.   Website configuration and bug fixes

iv.   Website traffic monitoring

v.   Website maintenance

vi.   Web security enforcement

vii.   Analyzing Server Log Files

viii. Produce a monthly report on Web Statistics, Analytics, and Traffic Statistics etc.

ix.   Participate in the Government Webmasters Forum

3.5.4 Consumer Feedback

Government MDAs shall use consumer feedback as a primary indicator of the success of the website. Consumer feedback can help in determining website relevance, usefulness, currency of information and quality. All problems and consumer queries shall be attended to in a timely and professional manner.

Officer(s) within the respective Government MDA shall be assigned to:

i.   Review reported compliments, comments, problems and queries

ii.   Forward them to the appropriate office in the respective Government MDA for action

iii.   Monitor timeliness of corrective action

iv.   Respond to the consumer within defined timeframes

3.5.5 Regular Research

Government MDAs shall conduct consumer surveys on a regular basis to enable continuous improvement of the website. The research shall seek to determine the:
  i.   Usefulness of information resources and services offered on the website

  ii.   New information resources and services to be provided

  iii. Identification of web pages and online services that is slow to load

  iv.   Ease of locating required information and services

  v.   Accessibility and usability

  vi.   Suggested improvements

  vii. Consumer statistics

3.5.6 Documentation

MDAs shall produce and maintain documentation of the development processes, administration and maintenance of the website including internet applications and databases for continuity.

3.6 Decommissioning Websites

  (a) Government MDA websites shall be regularly reviewed to ensure that they are relevant and up-to-date. A websites shall be retired or decommissioned where: it:

    i.   Does not serve a specific function or purpose of government
    ii.   Has been rendered irrelevant due to re-organization of government
    iii. Was developed for a particular project or strategy that is no longer relevant or current
    iv.   Was launched as part of a government-sponsored campaign that has since come to an end
    v.   Is non-essential and website traffic statistics, where available, shows that the website is not being utilized.

  (b) When decommissioning a Government MDA websites, consideration shall be given to archiving the content as appropriate.

3.7 Web Management Team

The NITA-U through the Directorate of e-Government Services shall establish a Web Management Team, consisting of Webmasters/Architects, Information Experts, Security Experts, Application Developers and Database Administrators. This Team shall ensure that all Government websites adhere to set web standards and guidelines. The Team shall also:

i. Design and develop a common website template for Government websites

ii. Ensure that all Government websites are developed on a common and secure CMS platform

iii. Support Government MDAs in developing their websites upon request

iv. Develop the Government Portal Strategy

v. Design, develop, manage and document the Government Portal

vi. Liaise with Government MDAs to produce and improve content of the Portal

vii. Host government websites and manage the web server

viii. Register and maintain web domains

ix. Develop and regularly review web guidelines, reports and plans related to government websites

x. Identify online systems and projects for benchmarking, locally and internationally

xi. Identify and recommend relevant web training for webmasters, IT officers and other Government officers

xii. Provide support to webmasters in Government MDAs

xiii. Conduct quality control of the government websites, and as necessary recommend to Government MDAs the use of current web technologies to adapt to changing requirements, and create awareness

xiv. Do periodic accessibility audits for all government websites and produce audit reports accordingly

xv. Coordinate a Government Webmasters/Developer's Forum

3.8 Government of Uganda Web Portal

In the development of the Government of Uganda Web Portal the following general considerations shall be made:

i. The Government Web Portal shall provide a single gateway to the Government of Uganda. The portal shall be in English and whenever possible be translated to other official and national languages. The primary users of the portal will be the various general publics including the citizen, private sector and non-governmental consumers, public sector consumers, the international community, researchers among others.

ii. The portal shall endeavor to provide the ideal mechanism for consumers to access Government information and services. Government MDAs that meet the access platform guidelines shall be linked to the Government portal.

iii. There shall be a citizen-centric Government portal strategy which shall ensure continuous improvement of the portal to facilitate the achievement of the e-Government vision. The strategy shall define the objectives of the portal and provide for its continuous development as well as a benchmark for measuring performance, with the view to optimizing the delivery of online services to the public.

iv. The portal shall focus on government news online, information and various public services such as online recruitment and government library.

3.9   Web Access Platforms

The following shall be considered:

i. Government MDAs shall endeavor to ensure that all websites can be displayed on all standard browsers.

ii. Government MDAs shall endeavor to use access platforms far beyond the traditional web browser in order to bring services closer to the majority particularly in the rural areas. Web services shall therefore be designed for delivery through various access devices such as mobile telephones, PDAs, IPADs, and digital TVs among others.

iii. Consumer feedback shall be ensured where these platforms are used, and where transactions are not successful mechanisms to reverse the transaction shall be available. All access platforms shall be adequately secured taking into consideration issues of authentication and repudiation.

iv. Government MDA Websites shall be designed and developed to work well with common user browsers. As a bare minimum the Website should be supported by common browsers such as Microsoft Internet Explorer, Firefox and Opera etc.

v. Government MDA Websites shall be designed and developed to work well with common/popular Operating Systems

vi. Consideration for Internet Bandwidth during design and development of Government MDA Websites shall be made. Ensure that Websites that support connection speeds for all users are developed. A connection speed of approximately 56Kbps Internet Bandwidth is recommended to cater for the wider audience.

3.10 Web 2.0 and Social Media

i. Government MDAs shall endeavor to embrace the use of Web 2.0/Government 2.0 standards in delivering content to individual users. Such applications include wikis, blogs, customized individual and team web pages, portlets, among others. This technology whose aim is to customize the web service experience to the target user shall at all times be upheld. Government MDAs shall however ensure that appropriate caution to guard against the inherent risks is observed.

ii. The existence of social media presents an opportunity Government MDAs to network. For example Government MDA Webpages on Facebook or Twitter. Governments MDAs should refer to the *Government of Uganda Social Media Guide* for guidance prior to the adoption of such technologies to avoid abuse of the service.

3.11 Electronic Records Management and Archiving

The preservation and access to electronic records, including web based resources, shall be planned so as to ensure availability and access throughout the life of the record. Government MDAs shall adopt best practices in records management for web resources. These may include:

i. Providing online access to electronic records and archived information in the relevant format
ii. Capturing full and accurate records of web based transactions into a record–keeping system that can guarantee the authenticity, reliability and accessibility of the records
iii. Identifying records that exist on their websites and those that need to be placed online
iv. Ensuring that full and accurate records of web resources are captured and maintained for as long as they are required.

Where a Government MDA has database records online, special care shall be taken to ensure that:

i. Proper authentication mechanisms are used during access to various databases.
ii. Standardized secure access mechanisms to Government databases are in place.
iii. Database transactions are adequately protected by use of passwords at personal entry and that digital signature business that need shall be used.
iv. Mechanisms are put in place to administer and manage databases that are accessible through the Government MDA website.

4   WEB SECURITY AND PRIVACY

4.1   General Information

The use of the Internet platform comes with inherent security threats and risks. As reliance on cyber space continues to increase, so do the number and complexity of associated security challenges. Government MDAs shall, as a matter of necessity, put measures or controls to protect web resources to assure the confidentiality, integrity and availability of information. The MDAs need to be confident that their information assets are safely and securely stored, processed, transmitted and destroyed.

4.2   Guidelines for Web Security and Privacy

The following guidelines shall be adopted for securing Government MDA Websites as well as for ensuring personal privacy on the Web:

i.   In securing their web content, the Government MDAs shall develop website security plans with the respective IT Policies. MDAs shall ensure that users are alerted of potential risks and how to avoid them when accessing the website.

ii.   Government MDA websites shall include a standard privacy policy statement that enumerates information collected about individuals when they visit the website, how it is used and if it is disclosed. It is important that an MDA complies with the undertakings and representations in its website privacy statement.

iii.   Government MDA shall regularly conduct security threat and risk assessments on their websites as well as also create and regularly review a security plan that describes the necessary security mechanisms and procedures.

iv.   Where Government MDAs solicit or collect information from users through electronic forms or email, they shall ensure that this information is securely transmitted and stored by taking appropriate measures such as data encryption.

v.   Where a Government MDA needs to transmit information to users, they shall ensure that the information is protected through appropriate technologies. Reasonable care shall be taken to protect the personal information held by an MDA from misuse, loss and unauthorized access, modification or disclosure.

vi.   Where necessary, user registration for access and use of services such as access to Government databases shall be enforced.

4.3   Hosting and Web Services

The following guidelines shall be followed when hosting Government Web Services:

i.   Government MDA websites and their domains shall be hosted within Government IT infrastructure.

ii.   Government Web hosting shall aim to ensure the high availability of Websites, Databases, Applications and Services. Government web hosting shall provide for secure remote access through Secure FTP and a control panel to enable uploads to the Web Server.

iii.   MDAs shall manage their web hosted applications through a secure management tool that provides control, flexibility and reliability. There shall be regular back-ups of all hosted content for the purpose of ensuring business continuity in case of failure. Government MDAs shall also develop a comprehensive business continuity and disaster recovery plan.

iv.   Government MDAs shall ensure that Web security strategies are put in place. Real-time event log monitoring for critical security incidents and periodic analysis should be included as well to detect suspicious activity to provide quick response.

v.   Mechanisms to monitor security-relevant policies (e.g., authentication, authorization, etc.), activity (e.g., privileged user activity) and applications (e.g., IDS, IPS, firewall, etc.) in real time should also be put in place.

vi.   Approvals shall be sought from the relevant authorities within the Government MDA in consultation with NITA-U for content that require to be hosted outside the government IT infrastructure for example video on YouTube etc.

4.3.1   Hosting Service Requirements

Government hosting services shall meet the following minimum requirements:

i.   Government MDAs should carefully plan and address the security aspects of the deployment of a public Web server

ii.   Install and maintain a firewall configuration to protect data

iii.   The services shall be provided on government owned and managed web, application or database servers and will run on a common platform to facilitate ease of maintenance

iv.   Servers shall be housed in a secure, managed equipment environment

v.   Application switches shall ensure that appropriate levels of resources are available to cater, for seasonal loading peaks.

vi.   A secure and private connection from the internal network shall be provided for management access

vii.   Data replication to an off-site storage location should be provided

viii.   Websites shall be mirrored to provide continuity and the ability to share workload

4.3.2   Security of Government MDA Web Servers

Government MDAs shall implement appropriate security management practices and controls when maintaining and operating Web server.

To ensure the security of Government MDA Web server(s) including the supporting network infrastructure, the following practices should be implemented:

i.   Government MDA Information System Security Policy

ii.   Configuration/change control and management

iii.   Risk assessment and management

iv.   Standardized software configurations that satisfy the National Information Security Framework

v.   Conduct Security awareness and training for Government MDA staff

vi.   Develop and implement contingency, operation and disaster recovery Plans for Government MDA Web Servers.

In deploying Government MDA Web Servers the following considerations shall be taken into account:

(a)   Government MDAs shall ensure that Server operating systems are deployed, configured, and managed to meet the security requirements of the MDAs.

(b)   In securing Web Server Operating Systems Government MDAs through their respective IT Units shall:

i.   In a timely/regular manner patch and upgrade the server OS as may be deemed necessary.

ii.   Disable unnecessary services, directory listings and applications

iii. Configure operating system user authentication

iv. Configure Web server resource controls

v. Perform security testing of the operating system

4.3.3 Security of Web Content

Government MDAs shall ensure appropriate steps are taken to protect Web content from unauthorized access or modification.

In ensuring the security of Web Content Government MDAs shall:

i. Commit to the on-going process of maintaining the security of Web Servers to ensure continued security.

ii. Use authentication and cryptographic technologies as appropriate to protect certain types of sensitive data with differing access privileges.

iii. Limit the use of active content/interactive elements on web pages as these may introduced Web-related vulnerabilities since they involve dynamic execution of codes

iv. Back-up critical information resources regularly/periodically

v. Maintain protected authoritative copy of the Government MDA Web content

vi. Establish and follow procedures for data recovery in case of compromise

vii. Define complete Web content access matrix that identifies which folders and files within the Web server document directory are restricted and which are accessible (and the privilege levels).

viii. Use host-based intrusion detection systems (IDS), intrusion prevention systems (IPS), and/or file integrity checkers to detect intrusions and verify Web content.

ix. Protect each backend server (database server, directory server etc.) from command injection attacks at both the Web server and the backend server.

4.3.4 Government Gateway

(a) It is recommended that Government MDAs shall manage access to the Internet and mail services in a secure manner.

(b) The Government gateway shall be secured by appropriate controls such as intrusion detection systems and firewalls sitting between the Internet and the Government MDA local area network,

where hosting is at the Government MDA premises. The quality of this service shall be built around the principles of secure computing, premises, processes and qualified personnel.

(c) The Government gateway shall provide mechanisms for authentication, access control and encryption in order to protect systems and information at the Internet boundary.

(d) Operating system configuration on the web server shall provide another layer of protection which shall include:

   i.   **File system limitation** – The web server shall have limited or no access to the host server's file system.

   ii. **Limited interactive system** – All non-administrative users shall be removed from the computer that runs the web server to reduce the risk of circumventing any web server access controls

   iii. **Privilege reduction** – The web server shall be run as a non-privileged user, with limited access to system resources

   iv. **Data and command validation** – There shall be validation of expected data and command strings

   v.   **Creating a sterile environment** – Unnecessary services, files and executable shall be removed from the web server environment to deny attackers any potential opportunity to bypass established security

   vi. **Monitoring network** and server audit logs.

4.3.5 Web Server Statistics and Reporting:

(a) The Government web hosting solution shall provide statistics on page visits, unique visitors, successful and unsuccessful requests, most and least frequently visited pages, most common entry pages, top referring sites and search terms used.

(b) Webmasters shall retain server logs and ensure that statistics are available across the Government MDA for business planning.

(c) Reporting shall be done frequently as required by all Government MDAs for enhanced decision-making on the following among others:

   i.   Additional bandwidth

   ii. Differential management for international and national traffic

   iii. Additional disk space

iv.   Additional software

v.   Maintenance of any hardware provided

4.3.6   Government MDA Website Promotion

(a) The Web Management Team and NITA-U shall prepare promotional plans for the Government Portal and MDA websites. Web addresses and email addresses shall feature as part of the medium used in conventional advertising and promotion.

(b) Promotion plans shall address the following:

1. **Conventional Advertising and Promotion** – These shall include:
   i.   Press – Advertisements and editorial

   ii.   Direct mail – Letters, flyers, brochures, newsletters

   iii.   Television and radio exposure

   iv.   Public meetings, seminars

   v.   Business cards, letterheads and other stationery

2. **Website discoverability** – To achieve this, indexing agents require:
   i.   Using Meta-description, Meta-keyword and tags

   ii.   Placing a brief summary of keywords at the beginning of websites

   iii.   Creating descriptive, carefully worded titles

   iv.   Using keywords throughout the documents

   v.   Registration with the major international search engines

3. **Internet Avenues** – Different electronic options including:
   i.   Email – An email list of consumers

   ii.   Links – Link to other MDA websites and the Government Portal

   iii.   Request shall be sought to provide links to Private sector and other non-governmental organizations

   iv.   Maintain news groups and mailing lists

5   PROMOTION OF USER EXPERIENCE

It is important to enhance user/visitor's experience on the Government Website by presenting content in a form that is easily understandable, navigable and searchable in addition to being visually appealing.

Incorporating common design elements such as colours, signposts, logos, styles into every Webpage in a professional and consistent manner improves/enhances user experience.

5.1   Web Accessibility Guidelines

One of the principles of Website development is to consider how the Website shall be accessed by all users including those with disabilities. Government MDA Website shall provide equal access to information and functionality to all users.

For Web accessibility the Government MDAs shall:

i.   Adopt the Web Content Accessibility Guidelines (WCAG) developed by W3C. The guidelines cover a wide range of recommendations for making Web Content more accessible to a wider range of users including those with disabilities (the blind, visual impairment, deafness, hearing loss, learning disabilities, cognitive limitations, limited movement, speech difficulties, photosensitivity and combinations or a combination of these). The use of these guidelines shall enhance and promote Website usage.

ii.   Ensure that Web pages do not contain any blinking or scrolling text, or flashing objects. Ensure that no items or objects on a page blink or scroll across the screen. People with cognitive or visual disabilities may not be able to read moving text or may be distracted by it. Flashing or blinking can trigger seizures in some people.

iii.   Ensure that accessibility applets, plug-ins, downloads and applications that are required to interpret page Content meet the requirements and are tested to ensure that they can be used by assistive technologies.

iv.   Avoid the use of uncommon media plug-ins which may redirect the users to other websites to download plug-ins.

5.2   Metadata

5.2.1   Definition

Metadata is structured data that describes the characteristics of an information resource and its intellectual property rights. Metadata is a vital tool for managing and providing access to electronic resources.

5.2.2   General Guidelines for use of Metadata

The following guidelines shall be considered in describing, managing and preserving Web based information:

i. Government MDAs shall use metadata to describe their web based information to improve the visibility and discoverability of those resources via web based search facilities.

ii. Government MDAs shall use Metadata for preserving and managing electronic records and ensuring their continued accessibility over time.

iii. Government MDAs are required to apply the generic metatags "keywords" and "description" which are indexed by the majority of commercial search engines. MDAs are encouraged to use as many additional metadata elements as are necessary to enhance their resource description and maximize discovery. There shall be Government metadata to support Government customized search engines.

5.3   Search Engine Optimization

To further improve/enhance visibility of MDA Website using Search engines, the following guidelines shall be considered:

i. Usable search results shall be incorporated on the Website. Avoid using confusing search results by providing precise information that matches the expectations of the users.

ii. Government MDA shall ensure that search engines search the entire Website including Pdf files, or clearly communicate which part of the Website will be searched. It is important to provide facility that narrows the scope of searches from a large search result by selecting relevant options.

iii. Ensure that searches are not case sensitive. Disregard case sensitivity on the search when entered as search terms.

iv. Provide search facility/options on every webpage that enable the user to filter search at any given moment/time.

v. Develop simple search facilities that support users who enter short words.

vi. Ensure that users are notified when multiple search options are available and how each can be optimally utilized.

6   LEGAL ASPECTS

6.1   Content Copyright

Copyright is a form of protection provided under law to the owners (*Original Works of Authorship*) in any form or media. It is implied that the original information put up on the Website by a give Government MDA is by default a copy right of that Government MDA.

The information placed on that Government MDA Website may be copied, reproduced, republished, uploaded, posted, transmitted, or distributed only if it complies with the copyright policy of the concerned Government MDA.

Government MDAs shall ensure that:

i. The information, materials and documents made available on the Government MDA Website are backed-up with proper/appropriate Copyright Policy.

ii. Copyright policy of a given Government MDA may be liberal, moderate or conservative depending upon their preferences based on the kind of information/material made available on its website.

iii. Information in the public domain freely made available to the citizens, shall be accompanied with liberal Copyright Policy.

iv. Special care shall be considered when publishing any information/material having a third party copyright. Government MDAs shall follow proper approval procedures to obtain the permission, prior to publishing such information on their websites.

v. Where any published Government MDA information/material/report is being reproduced on any Website, whether as excerpts or in full, the source, full title, name of the concerned Government MDA and year of publication must be provided and acknowledged.

The following sample Copyright statements may be considered for information/materials in the Public domain where there is no restriction to its reproduction:

Copyright Statement Sample 1: Information/Materials in the Public Domain without restriction to its reproduction.

Material featured on this site may be reproduced free of charge in any format or media without requiring specific permission. This is subject to the material being reproduced accurately and not being used in a derogatory manner or in a misleading context. Where the material is being published or issued to others, the source must be prominently acknowledged.

However, the permission to reproduce this material does not extend to any material on this site, which is explicitly identified as being the copyright of a third party. Authorization to reproduce such material must be obtained from the copyright holders concerned"

The following sample Copyright statements may be considered for information/materials on a Government MDA Website which may call for restriction on its reproduction.

Copyright Statement Sample 1: Information/Materials in the Public Domain with restriction to its reproduction.

6.2   Terms and Conditions

Clearly defined Terms and Conditions including well-worded disclaimers regarding the usage of the Websites shall be present on every Government MDA website.

Government MDAs shall ensure that:

(a) Terms and Conditions shall address the following aspects:
   i.   Government MDA Website ownership details
   ii.   Government MDA Usage Policy of the posted Content on the Website
   iii. Government MDA Legal Aspects and considerations on the usage of the Website
   iv.   Government MDA responsibility towards hyperlinked sites

(b) Content of another Government MDA website is not out rightly disclaimed but rather indicate the ownership of a particular piece of content as well as refer users to appropriate help/support channels where further enquiries and feedback may be made.

(c) Clarity is provided on whether the information available on the website may be construed as a statement of law to be used for any legal purposes or not.

6.3   Privacy Policy

In order to observe privacy on the Web cautious approach shall be followed by the Government MDA when:

   i.   Collecting personal details/information about the visitors to the Website. Care shall be taken to solicit only information which is absolutely needed.

   ii.   Soliciting information from visitors through their Websites. A prominently displayed Privacy Statement clearly stating the purpose for which information is being collected shall be made.

   iii. Collecting high risk personal information from its visitors such as credit card/bank etc. This shall be accomplished through secure means (digital Certificates/encryption etc.) to avoid any inconvenience, damage or loss of information.

6.4   Content Hyperlinking

Government MDAs shall ensure that:

i.   Comprehensive and clear hyperlinking policy is put in place for those who wish to hyperlink content from any of its sections.

ii.   Hyperlinking Policy enumerating the detailed criteria and guidelines with respect to hyperlinks with other Websites may be made available under the common heading '*Hyperlinking Policy'* and displayed at a common point on the homepage/site under the ownership of a given Government MDA.

iii.   Cross linkages between different websites does not cause ambiguity to users/visitors about the ownership of a portion of the content as well as whom to be contacted in case of any enquiries.

iv.   Prior to creating linkages between Websites, the security domains of all Websites are in line with the Government MDA requirement.

v.   Hyperlinks on any Government MDA Website are verified and checked on a regular basis to ensure that the information being provided 'through' them is up-to-date, accurate and relevant.

vi.   Broken links or those leading to '*Page Not Found'* errors are checked on a regular basis and are rectified or removed from the site immediately upon discovery.

vii.   Visual distinctions for links that lead to off sites are created using Cascading Style Sheets (CSS) controls or other mechanism. And in case the link lead users to other Website of the same Government MDA, a seamless transition should be used through appropriate CSS controls.

viii.   Links are provided to a Website rather than duplicating information that is published on another website and not to link to Websites that are under construction. In addition, links should go to specific pages on the Website (deep links) rather than just homepages.

ix.   Links are provided only to registered/accredited NGOs/Companies/firms/Professional Associations/Development partners that add value to Government programmes, complement and support as well promotes the interest of Government.

6.5   Content Authenticity, Accuracy and Currency

To ensure authenticity, accuracy and currency of Web Content:

i.   Government MDAs shall take responsibility for making sure that the Web content posted on their Websites is accurate, factual, authentic/credible and up-to-date for Public consumption.

ii.   Government MDAs shall establish Content Contribution, Moderation, Approval and Review Policy (CMARP) which clearly enumerate the responsibilities, authorization channels and workflow details in regard to content publishing.

iii.   Government MDAs shall ensure that for Sensitive Web Content (tender notifications, announcements for conference registrations etc.) which expires after a certain period, Policy on information/content retention and archiving should be put in place. Such information may be useful at a later stage which the Government MDA can refer to.

REFERENCES

1. Policy Guidelines for South African Government Websites

   http://www.gcis.gov.za/sites/default/files/docs/resourcecentre/guidelines/Government_%20website guidelines_version1_final121015_layout.pdf

2. Guidelines for Design and Management of Public Sector Websites

3. Uganda Government Website Standards 2007

4. Guidelines for Indian Government Websites

   http://darpg.gov.in/darpgwebsite_cms/Document/file/Guidelines_for_Government_websites.pdf

5. ICT Standards and Guidelines (Directorate of e-Government-Kenya)

   http://www.e-government.go.ke/

6. http://www.smashingmagazine.com/2010/07/21/designing-style-guidelines-for-brands-and-websites/

7. http://guidelines.usability.gov/

8. http://www.w3.org/standards/

9. http://www.w3.org/WAI/

10. Uganda Government Website Standards 2007