



Web Standards
for
Developing Government Website of Sri Lanka

January 2013

Version 3.0

TABLE OF CONTENTS

1	INTRODUCTION	IV
2	DOMAIN NAMES.....	1
	BACKGROUND	1
	ORGANIZATION PURPOSE.....	1
	CHALLENGES FACED IN CHOOSING A DOMAIN NAME	1
	Characteristics of Ministries	1
	Characteristics of Departments.....	1
	Characteristics of Provincial Councils (PCs) and agencies under them	2
	Characteristics of Divisional Secretariats and Local Government agencies	2
	statutory bodies and other government bodies.....	2
	GUIDELINES FOR CHOOSING A NAME	3
	Procedure to follow domain name registration	4
	HOW TO HANDLE AGENCY CHANGE (E.G. MINISTRY) IN DOMAIN NAMES	4
	Procedure to be followed in changing domain names	5
	DISPUTE RESOLUTION PROCEDURE.....	5
3	LANGUAGE STANDARDS AND GUIDELINES	6
	LANGUAGES	6
	GUIDELINES.....	6
4	ACCESSIBILITY STANDARDS AND GUIDELINES	8
	W3C WEB ACCESSIBILITY GUIDELINES.....	8
	World Wide Web Consortium (W3C) Quick Tips	8
	Essential components of web accessibility	9
	Priority levels.....	10
	TEN TESTS TO CHECK WEBSITE ACCESSIBILITY	11
	Check informational images for alternative text.....	11
	Check decorative images for alternative text.....	11

„Listen“ to video or audio content with the volume turned off.....	11
Check that forms are accessible.....	11
Ensure that text and components can be resized.....	12
Check your Website in the Lynx browser.....	12
Check whether you can access all areas of your Website without the use of a mouse ...	12
4.2.8 Check whether there is a sitemap and breadcrumb	12
Ensure link text makes sense out of context	12
Check your Web pages with an automated program.....	13
5 USABILITY STANDARDS AND GUIDELINES.....	14
WHAT IS USABILITY	14
GUIDELINE FOR PRESENTING THE INFORMATION IN A CLEAR AND CONCISE WAY	14
Text Appearance	14
Page Layout- Structure	15
Headings, Titles and Labels (Menus and small banners).....	16
Organizing of content	16
Lists	16
Links	17
Navigation	18
Optimizing the user experience	20
Search	21
Software and Hardware.....	22
Graphics, Images, and Multimedia	23
Downloads, Plug-ins and Applets.....	24
6 LOOK AND FEEL	25
WELCOME PAGE	25
HOME PAGE AND OTHER PAGES	26
7 MINIMUM INFORMATION PROVISION STANDARDS AND GUIDELINES	28

DESCRIPTION	28
Rationale	28
Related principles	28
MINIMUM REQUIREMENTS	28
8 INFORMATION ARCHITECTURE AND CLASSIFICATION	30
WHY IS INFORMATION ARCHITECTURE IMPORTANT	30
THE BENEFITS OF AN INFORMATION ARCHITECTURE STANDARD.....	30
MINIMUM REQUIREMENT.....	30
9 CONTENT APPROVAL AND REVIEW PROCESS	32
DESCRIPTION	32
RESPONSIBILITIES	32
PROCESS	
Manual Process.....	33
Electronic Process.....	34
10 LEGAL ASPECTS	35
COPYRIGHT AND COPYRIGHT NOTICES.....	35
DISCLAIMERS	36
DATA PROTECTION	37
11 WEB SECURITY STANDARDS	38
HOSTING ENVIRONMENT SECURITY	38
APPLICATION LEVEL SECURITY.....	38
DATA TRANSMISSION SECURITY	39

1 INTRODUCTION

The Re-engineering Government Programme (Re-Gov) of the ICT Agency (ICTA) of Sri Lanka initiated the government web development project in year 2005 to increase the web presence of the government and promote the web usage in the government. Up to now, more than 250 trilingual Unicode compliant websites have been successfully launched for the government departments, ministries and other government entities.

While the above developments are encouraging, there are more than 100 government websites which have already been developed independently without any assistance from ICTA and many more such website are expected to be developed in the future.

INCONSISTENCIES IN THE GOVERNMENT WEBSITES

Many of these government websites have been 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 the provision of information also vary widely in these websites. This situation has resulted in:

1. Inadequate and inconsistent communication and service delivery across the government and to the public;
2. Inadequate accessibility concerns for all groups of the community; and
3. Lack of appropriate management arrangements with regard to the risks in providing information and services within the Internet environment.

THE NEED FOR STANDARDS/GUIDELINES

Considering the above, many differences are seen among government websites. Consistency with regard to the design and also the content is important since all these varying sites represent one government.

A set of comprehensive standards aligned to other standards recommended by ICTA are therefore necessary, for developing, implementing, maintaining, updating and managing government websites.

WAY AHEAD

ICTA has developed a set of 'Web standards for Developing Government Website of Sri Lanka', which is available on its website [www.icta.lk/pdf/Re-engineering Gov/Web_development_standards.pdf](http://www.icta.lk/pdf/Re-engineering-Gov/Web_development_standards.pdf), which needs to be further improved, and enhanced into a comprehensive set of standards and guidelines. The following areas are currently covered in this document.

1. Domain names
2. Language – including local language content
3. Compliance to the Unicode standard
4. Accessibility
5. Usability (e-business etc.)
6. Interoperability
7. Look and feel
8. Minimum information provision
9. Information architecture and classification
10. Content approval and review process (including Web Content Management System (WCMS) etc)
11. Legal aspects (data protection, privacy, Intellectual Property Rights (IPR) etc)
12. Web Security

COMPLIANCE TO WEB STANDARDS

Currently ICTA is hosting the majority of government websites at the Government Internet Data Centre (www.gidc.gov.lk). Before migration any government website to GIDC, ICTA web team will check the compliance of websites to the web standards mentioned in this document. ICTA web team has developed a web compliance checklist which is available at http://www.icta.lk/pdf/Re-engineering_Gov/web_compliance_checklist_v1.0.pdf.

The government organizations which develop their websites in-house or by outsourcing to a third party should use the web compliance checklist for checking the compliance. Since the majority of government organizations lack the technical capacity for checking the web compliance of the website that has been developed by outsourcing to a third party, the following clause should be included in the bid document for ensuring the compliance.

“The web developer should ensure that the website conforms to the “Web standards for Developing Government Websites of Sri Lanka” which is published by ICTA. The web developer should use the “web compliant checklist” published by ICTA for checking the compliance. For the purpose of signing-off the web development contract the web developer should submit a certificate confirming that the particular website is in compliance to the “Web standards for Developing Government website of Sri Lanka”.

2 DOMAIN NAMES

BACKGROUND

The Domain Name System (DNS) helps users to find their way around the Internet. Every computer on the Internet has a unique address – just like a telephone number – which is a rather complicated string of numbers. It is called "IP address" (IP stands for "Internet Protocol").

But it is hard to remember everyone's IP addresses. The DNS makes it easier by allowing a familiar string of letters (the "domain name") to be used instead of the arcane IP address. So instead of typing 192.0.32.7, you can type www.icann.org.

ORGANIZATION PURPOSE

Organization purpose is to establish a commonly acceptable DNS naming convention for the national and sub-national levels of Government institutions to enable them establish their identity in the Internet while minimizing complexities/hassle of changing them in response to associated environmental changes (reduce vulnerability to external changes), to ensure continuity and reduce administrative burdens.

CHALLENGES FACED IN CHOOSING A DOMAIN NAME

Choosing an appropriate domain name is quite challenging due to the dynamic characteristics of existence of the respective Government agencies, which are explained below:

CHARACTERISTICS OF MINISTRIES

1. Volatility of cabinet portfolios and vulnerability to political system changes
2. Long names
3. Unrelated subjects assigned to a single ministry
4. The mandates given to ministries are changed often. (e.g. Department of Pensions was once under the Ministry of Finance, later transferred to the Ministry of Public Administration and Home Affairs, Department of Wildlife Conservation was once under the President's Office, Department of External Resources (ERD) was once was under Ministry of Policy Development)
5. Ministries are essentially a collection of specialized agencies (Departments, Authorities, Boards, Commissions, etc) to be responsible to the Cabinet of Ministers.

CHARACTERISTICS OF DEPARTMENTS

1. Have historically long existence (Department of Surveyor General)

2. Names remained unchanged over a long period of time (Pensions, Labour, Customs, Inland Revenue)
3. Belonged to different ministries over time (Pensions, ERD, Census and Statistics, etc)
4. Identified by the specialized subject entrusted to.

CHARACTERISTICS OF PROVINCIAL COUNCILS (PCs) AND AGENCIES UNDER THEM

1. 4 portfolios plus a Chief Ministry, but different subjects per Ministry in different PCs.
2. Static number of ministries and departments.

CHARACTERISTICS OF DIVISIONAL SECRETARIATS AND LOCAL GOVERNMENT

AGENCIES

Static nature, but may come across with Pradeshiya Sabhas (PSs) having long village names, which is difficult to form a domain name with. (E.g. Karuwalagaswewa, Kebithigollewa, Kahatagasdigiliya etc).

STATUTARY BODIES AND OTHER GOVERNMENT BODIES

Statutory bodies are organizations under the purview of the Government which follows that company's ordinance (e.g. ICTA, Samurdhi Authority, Civil Aviation Authority, Cashew Corporation).

Government bodies are formed as

- Division under Ministries or Department (e.g. Health Education Bureau, Epidemiology Unit)
- Regulatory bodies (e.g. Telecom Regulatory Commission, Public Service Commission).
- Diplomatic missions (e.g. Foreign Mission – New Delhi Embassy, Counsel office)

Domains under gov.lk shall be registered under the following categories: The following categories are mentioned in the eGovernment policy which has been approved by the cabinet of ministers. (Please refer section 0302 of eGovernment policy which is available at following location <http://www.icta.lk/index.php/en/e-governement-policy>)

Organization	Domain format
Ministries & Departments	gov.lk
Provincial Councils	wp.gov.lk, np.gov.lk, sp.gov.lk, nw.gov.lk, ep.gov.lk, cp.gov.lk, sg.gov.lk, up.gov.lk, ncp.gov.lk
District Secretariats	dist.gov.lk
Divisional Secretariats	ds.gov.lk
Municipal councils	mc.gov.lk
Urban councils	uc.gov.lk
Pradeshiya Sabhas	ps.gov.lk
Diplomatic Missions and Conciliate Offices	mission.gov.lk

GUIDELINES FOR CHOOSING A NAME

As discussed in the background section of this document domain name of an agency represents its identity in the Internet. Hence it is the responsibility of the respective agency to choose a suitable domain name. A set of guidelines for selecting a suitable domain name is given below:

1. Be aligned to the overall policy on registrations of domains under the top level domain .LK.
2. Choose single short name (word) when it makes sense to establish the identity of the organization/agency, provided that the name is not a common/generic name shared by two or more organizations (e.g. immigration, customs, statistics, pension etc). However if the short name is commonly used by more than one organization (e.g. health, education, labor, etc) the agency type (Ministry, Department, etc) should be suffixed/prefixed with the domain name.(e.g. Agriculture Ministry - agrimin, Agriculture Department - agridept).
3. Choose abbreviations when they are easy to remember (e.g. moe.gov.lk, dmhr.gov.lk, daph.lk, rpd.gov.lk etc). This is more appropriate for agencies with permanent existence (e.g. departments)
4. Prefix or suffix D or M (to denote Department or Ministry) to and insert O (to denote Of) within an abbreviation to make it more memorisable (e.g. doc.gov.lk)
5. Use shorten forms if it makes sense (e.g. meteo - meteorology, exams - examinations)
6. When there are unrelated/multiple subjects assigned to one ministry, choose the most important or well known subject (which is less likely to change) for the domain name (in 1994 MOF was Ministry of Finance, Planning, Ethnic Affairs and National

Integration; Ministry of Public Administration time to time was charged with Home Affairs, Provincial Councils, Local Government, Plantation Industries, etc)

7. In case of Districts, Divisions and Local Government agencies where the area name is longer shorten it in a meaningful manner and memorisable manner.
8. Dash or underscore is not recommended
9. Characters like \$, @, %, are not allowed
10. In case of a dispute for a domain name, agency to which the name is directly relevant and agency identified by the name in question continuously for a longer period (7 years or more) will be assigned the domain name. (Ministry of Plantation Industries and Ministry of Plan Implementation; both deserve MPI, but the former has used plantationindustries.gov.lk)

2.4.1 PROCEDURE TO FOLLOW DOMAIN NAME REGISTRATION

All government organizations that wish to register domain should submit their applications to www.nic.lk through online.

HOW TO HANDLE AGENCY CHANGE (E.G. MINISTRY) IN DOMAIN NAMES

An organization may change its domain name due to following reasons.

- Change of the organizations portfolio (e.g. Generally a set of new ministries is created after a new government is appointed and portfolios of ministries can be changed after cabinet re-shuffles)
- Organization changes the domain name based on user preference (e.g. donets.lk was changed to exams.gov.lk)

In such situations the organization shall follow following procedures periodically from least significant to most significant change.

1. Leave domain name unchanged if the changes to the portfolios of the agency do not substantially affect the domain name (core subjects are retained - e.g. Ministry of Public Administration retained its domain name www.pubad.gov.lk despite the fact that other subjects assigned were removed),
2. Leave domain name unchanged if the agency change does not substantially affect domain name (subjects not fully changed),
3. Change only the web domain name, leave e-mail addresses unchanged,
4. Change domain name (Web and E-mail) to reflect new name

PROCEDURE TO BE FOLLOWED IN CHANGING DOMAIN NAMES

1. The organization needs to register the new domain name in align to policy and procedure of registering a domain names for Government organizations
2. The old domain name should exist for a period of 6 moths with a redirection page to new domain name with notification to users of the new domain.
3. E-mail address of the old domain name should carry an auto response to send mails to new address and all mails needs to be forwarded to the new mail id assigned.
4. Old domain should be taken out of service only after 6 months of time from the day the above procedures are followed.

2.6 DISPUTE RESOLUTION PROCEDURE

Any dispute with regards to a domain name will be amicably resolved by relevant parties having a discussion with ICTA and/or secretary to the president as the mediator.

3 LANGUAGE STANDARDS AND GUIDELINES

LANGUAGES

As per the section **03105** of ICT Policies and Procedures for Government which has been approved by the Cabinet of Ministers all Government organizations should publish all the content on their websites in Sinhala, Tamil and in English

030105: Government organizations should ensure that the content on their website is available in Sinhala, Tamil and English. The web pages in local languages should be Unicode compliant.

GUIDELINES

1. All the content should be available in Sinhala, Tamil and in English.
2. The welcome page should have language selection buttons in the following order Sinhala, English and Tamil.

Refer Section 5 - “Look & Feel” for placement of buttons.



3. In the welcome page, the website link for local language assistance should be available.
4. Language selection options Sinhala, Tamil and English should be placed on the right hand top corner of the website in all pages except for welcome page. *Refer Section 2 - “Look & Feel” - Button size and Colors.*
5. It is mandatory to use Sinhala and Tamil Unicode. Please follow the below links for downloading Sinhala and Tamil Unicode kits respectively.
 - <http://www.siyabas.lk/>
 - <http://www.locallanguages.lk/>
 - <http://www.emathumozhihal.lk/>

6. Standard font face can be any suitable Unicode font and developer should test the website using a recommended font.
 - For Sinhala “Malithi Web” or “Bashitha”
 - For Tamil use “Latha”

Refer section 5 - “Look and feel” for Paragraph text size and font family.
7. If website is updated in one language the content should also be updated in the other two languages.
8. Refer glossaries published by ICTA and Department of Official Languages in order to find out the corresponding Tamil and Sinhala words.
9. All government organizations are encouraged to have all downloads (e.g. Form, Acts, Circulars etc) in all three languages.
10. All attempts should be made to maintain a proper folder structure and when saving files follow the standards given below:
 - www.index.gov.lk/Si/
 - www.index.gov.lk/Ta/
 - www.index.gov.lk/En/
11. For standards for Sinhala and Tamil terms Refer section 5 – “Look & Feel”

#	Area to refer	Description	Section
	Placement of buttons	Welcome page should have language selection buttons in the following order Sinhala, English and Tamil.	5 Look & Feel
	Button size and Colours	Language selection options Sinhala, Tamil and English should be placed on the right hand top corner of the website in all pages except for homepage.	5 Look & Feel
	For Paragraph text size and font family.	Standard font face can be any suitable Unicode font and developer should test the website using a recommended font	5 Look & Feel
		Standards for Sinhala and Tamil terms Refer section 5 – “Look & Feel”	5 Look & Feel

4 ACCESSIBILITY STANDARDS AND GUIDELINES

W3C WEB ACCESSIBILITY GUIDELINES

Web accessibility refers to the practice of developing websites which can be used by people of all abilities and disabilities. When websites are developed, all users should have equal access to information and functionality of the website.

The Web Content Accessibility Guidelines are written by the Web Accessibility Initiative (WAI), an International Program Office of the W3C. *Web Content Accessibility Guidelines (WCAG) 2.0 covers a wide range of recommendations for making web content more accessible. Following these guidelines will make content accessible to a wider range of people with disabilities, including those who are blind and those with low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech difficulties, photosensitivity and combinations of these. Following these guidelines will also often make your web content more usable to users in general.*

Reference: <http://www.w3.org/TR/WCAG20/>

Use the World Wide Web Consortium (W3C) Quick Tips, 10 quick steps to build Accessible websites.

WORLD WIDE WEB CONSORTIUM (W3C) QUICK TIPS

1. **Images & animations:** Use the ALT attribute to describe the function of each visual.
2. **Image maps:** Use the client-side map and text for hotspots.
3. **Multimedia:** Provide captioning and transcripts of audio, and descriptions of video.
4. **Hypertext links:** Use text that makes sense when read out of context. For example, avoid "click here."
5. **Page organization:** Use headings, lists, and consistent structure. Use Cascading Style Sheets (CSS) for layout and style where possible.
6. **Graphs & charts:** Summarize or use the longdesc attribute.
7. **Scripts, applets, and plug-ins:** Provide alternative content in case active features are inaccessible or unsupported.
8. **Frames:** Use the no frames element and meaningful titles.
9. **Tables:** Make line-by-line reading sensible. Summarize.
10. **Check your work:** Validate. Use tools, checklist, and guidelines at (<http://www.w3.org/TR/WCAG>)

Reference: (<http://www.w3.org/WAI/quicktips>)

ESSENTIAL COMPONENTS OF WEB ACCESSIBILITY

Web accessibility depends on several components working together and how improvements in specific components could substantially improve web accessibility. It also shows how the WAI guidelines address these components. <http://www.w3.org/WAI/intro/components.php>

It is essential that several different components of web development and interaction work together in order for the web to be accessible to people with disabilities. These components include:

- *Content - the information in a „web page“ or „web application“, including:*
 - *Natural information such as text, images, and sounds*
 - *Code or mark-up that defines structure, presentation, etc.*
- *Web browsers, media players, and other "user agents"*
- *Assistive technology, in some cases - screen readers, alternative keyboards, switches, scanning software, etc.*
- *Users' knowledge, experiences, and in some cases, adaptive strategies using the web*
- *Developers - designers, coders, authors, etc., including developers with disabilities and users who contribute content*
- *Authoring tools - software that creates websites*
- *Evaluation tools - Web accessibility evaluation tools, HTML validators, CSS validators, etc.*
- *How the components relate to each other is shown in Figure 3.*

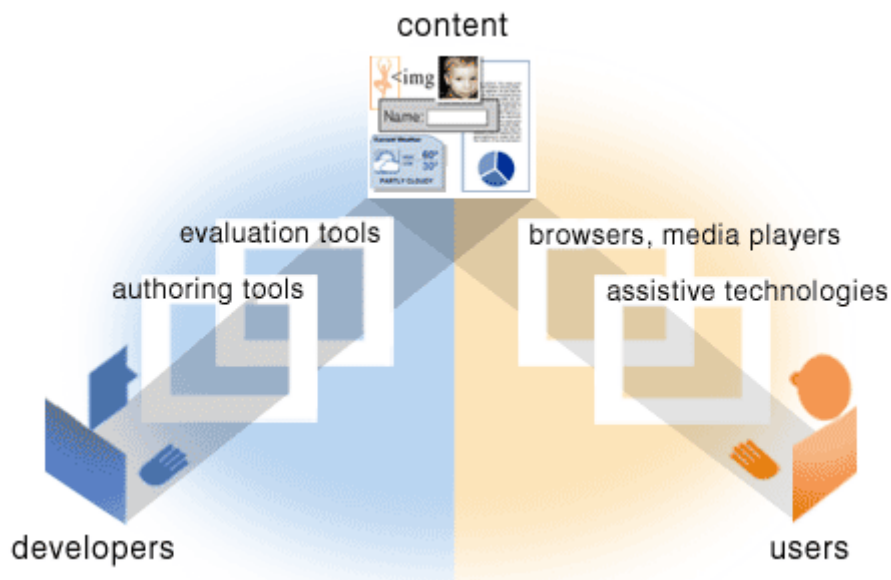


Figure 3 – Source: <http://www.w3.org/WAI/intro/components.php>

Web developers usually use authoring tools and evaluation tools to create web content.

People ("users") use web browsers, media players, assistive technologies, or other "user agents" to get and interact with the content.

Reference: <http://www.w3.org/WAI/intro/components.php>

PRIORITY LEVELS

Web Content Accessibility Guidelines 1.0 of the W3C Recommendation of 1999-05-05 give three priority levels.

Refer <http://www.w3.org/TR/WAI-WEBCONTENT/checkpoint-list.html> for the list of checkpoints/requirements to qualify for the different priority levels

Priority 1: Web developers must satisfy these checkpoints/requirements; otherwise it will be impossible for one or more groups to access the web content. Conformance to this level is described as "A".

Priority 2: Web developers should satisfy these checkpoints/requirements; otherwise some groups will find it difficult to access the web content. Conformance to this level is described as "AA" or "double A".

Priority 3: Web developers may satisfy these checkpoints/requirements, in order to make it easier for some groups to access the web content. Conformance to this level is described as "AAA" or "triple A".

The reference below shows how the WCAG 1.0 checkpoint relates to the WCAG 2.0 Proposed Recommendation published 03 November 2008.

Reference: <http://www.w3.org/WAI/WCAG20/from10/comparison>

TEN TESTS TO CHECK WEBSITE ACCESSIBILITY

CHECK INFORMATIONAL IMAGES FOR ALTERNATIVE TEXT

When the cursor is placed over an informational image, for example, an organization logo or a banner which links to another page, a yellow box appear with a brief, description of the image. For browsers do not support images, this alternative text makes the reader to see (or hear) in place of the image.



CHECK DECORATIVE IMAGES FOR ALTERNATIVE TEXT

When the cursor is over a decorative image that does not have any function other than giving a better look the yellow box with a description should not appear. Since the image serves no purpose there no reason for users whose browser does not support images to know that there is an image.

If a yellow box does not appear, this could be one of two things:

- The alternative text of the image is assigned a null value (`alt=""`), which means that it will be ignored by the browsers that do not support images.
- The alternative text of the image is simply not set at all, which means that users whose browsers do not support images will be alerted to its existence but will be unable to find out what purpose it carries.



„LISTEN“ TO VIDEO OR AUDIO CONTENT WITH THE VOLUME TURNED OFF

The Audio and Video files of the website should supply subtitles or written transcripts for the content to be accessible to hearing impaired users.

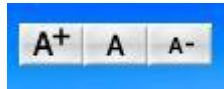
CHECK THAT FORMS ARE ACCESSIBLE

A form comprise of prompt text such as „name“, „e-mail“ and „comments“, next to each text container such as „textbox“ and „text area“ for users to enter details in a form. When user clicks on a prompt text, flashing cursor should appear in the relevant text container.

ENSURE THAT TEXT AND COMPONENTS CAN BE RESIZED

The font size of the website should be adjustable. The font adjustability should be supported either through the components of the website or through the web browser.

The font size changer on a website should have 3 basic components font-size increaser, resister and decreaser. Though this is not mandatory it's recommended to be followed in a website.



It's mandatory for the website to support in increasing the font-size and all its components of the website through all latest web browsers.

To check font size changing capability in Internet Explorer go to „View > Text size > Largest“ and in Fire-Fox go to Tools > Options > Content > Font & Colors.

To check the capability of increasing components of the website, scroll with the wheel of your mouse whilst holding down the control key.

CHECK YOUR WEBSITE IN THE LYNX BROWSER

The “Lynx” browser is a text-only browser that doesn't support many of the features that other browsers such as Internet Explorer and Firefox have. If the website is readable and can be navigated through the Lynx browser, then the website is fulfilling many of the web accessibility guidelines.

CHECK WHETHER YOU CAN ACCESS ALL AREAS OF YOUR WEBSITE WITHOUT THE USE OF A MOUSE

The website should support in navigating through tab, shift-tab and return. If not, then neither can keyboard and voice-only users can navigate through the website.

CHECK WHETHER THERE IS A SITEMAP AND BREADCRUMB

Sitemap of the website plays a vital role in identifying the entire website, It defines the websites capacity and the location where user existence in the entire website.

The breadcrumb makes helps the user to identify the current location, preventing the user from getting lost in the website.

ENSURE LINK TEXT MAKES SENSE OUT OF CONTEXT

Visually impaired Internet users can browse web pages by tabbing from one link to the next. Does all the link text on your website make sense out of context? „Click here“ and „more“ are two common examples of non-descriptive link text that can cause a website to suffer poor accessibility.

CHECK YOUR WEB PAGES WITH AN AUTOMATED PROGRAM

Those who wish to test accessibility through automated programs can utilize tools such as **WebXACT12** and **Wave13** which are freely available on the Internet. Though these tools are utilized, most accessibility checks must be done by human intervention to optimize accessibility of a website.

5 USABILITY STANDARDS AND GUIDELINES

WHAT IS USABILITY

Studies on user behavior on websites shows users are of low tolerance when accessing websites. Users don't want to wait and they don't want to learn how to use the website to navigate through to obtain information. There's no such as a training sessions or a manual for a website. People should to be able to grasp the functioning of the site immediately after scanning the home page within few seconds at most.

Usability can be defined in many ways. We see usability broadly according to the ISO 9241 definition: "the effectiveness, efficiency and satisfaction with which specified users achieve specified goals in particular environments". Where effectiveness, efficiency and satisfaction are defined as:

- **Effectiveness:** *the accuracy and completeness with which specified users can achieve specified goals in particular environments*
- **Efficiency:** *the resources expended in relation to the accuracy and completeness of goals achieved*
- **Satisfaction:** *the comfort and acceptability of the work system to its users and other people affected by its use*

Reference: <http://www.w3.org/2002/09/usabilityws.html> - Exploring Usability Enhancements in W3C Process

GUIDELINE FOR PRESENTING THE INFORMATION IN A CLEAR AND CONCISE WAY

TEXT APPEARANCE

- Use black text on plain, high-contrast backgrounds
- Ensure visual consistency
- Use at least 12- point font
- Never use less than 10-point font on a website
- Have Font-size adjuster on the website
- For sites targeted to senior citizens at least a font of at least fourteen-points is recommended as default font size.
- Use commonly used fonts that users are familiar with.
- In sites where it is necessary for users to read a lot of information, use lower-case fonts and appropriate capitalization to ensure the fastest possible reading speed
- Use bold text only when it is important to draw the user's attention to a specific piece of information.

- Use Unicode fonts to avoid jargon characters displayed on website

PAGE LAYOUT- STRUCTURE

- Determine if performance or preference is most important
- Priorities information from high-to-low level of importance and use it throughout all pages of the website
- Place important, clickable items such as menus in the same locations, and closer to the top of the page.
- Structure pages in a manner where items can be easily compared when users needs to analyze those items to distinguish similarities, differences, trends, and relationships. E.g.:
- Create pages that are not too crowded with items of information and facilitate finding target information on a page easily.
- Place important items at the top centre of the web page to facilitate users' finding the information easily.
- Its advised to use web pages with minimal length, but decide on the length of the web page to support the primary use of the web page
- Use shorter pages for homepages, navigation pages and for pages that need to be quickly downloaded. Use longer pages to (1) facilitate uninterrupted reading (2) match the structure of a paper counterpart; (3) minimize page maintenance and, (4) make pages download and print more conveniently.
- Align page elements/content/components, either vertically or horizontally to enhance readability.
- Use consistent alignments of text across all web pages
- To increase reading speed, use longer line lengths (75 -100 characters per line). But if the acceptance of the website is important, use shorter line lengths (50 characters per line)
- It's advised to display continuous text in columns containing at least 50 characters per line making better readability.
- Create pages that are not cluttered with text and contents making users an unpleasant experience in browsing the website
- Limit the amount of white space (areas without text, graphics, etc.) on pages that facilitates scanning and searching the content on a web page.
- Search targets of the website should be clearly available.

HEADINGS, TITLES AND LABELS (MENUS AND SMALL BANNERS)

- Make sure the category labels (or menus), including links, clearly resemble the information and items contained within the category (reflecting the web page)
- Use unique and descriptive headings and keep space to heading from top (breadcrumb or content if it's a sub title) and bottom (contents of the article).
- Use descriptive headings for articles, row and column of a table conceptually related to the content they describe
- Provide descriptive page titles for each web page
- Highlight critical data or information to attract reader.
- Don't have files to be downloaded directly from a menu

ORGANIZING OF CONTENT

- Use simple language
- Provide content that is engaging, relevant, and appropriate to the audience
- Organize Information clearly and group related elements
- Group all related information and functions to increase efficiency in browsing the website and decrease time spent searching or scanning
- The design of the website should make sure that all needed information is available and displayed on the page where and when it is needed preventing user remember the content. E.g. the header of the table should be fixed when page is scrolled.
- Design information quantitatively to reduce the time required to understand it by making appropriate use of tables, graphics, and visualization techniques to hasten the understanding of information
- If required format information to support multiple audiences. E.g. color the font to signify doctors and patients / technical and non-technical
- If at all possible, limit the homepage to one screen of information.
- Use colors to help users to understand differences of text the does and does not go together.
- When a page containing lengthy information use Anchor Links, Tabs, Cascading title sheet, sub menus or links to move to new page for each sub topic.

LISTS

- Order listed content to maximize user performance
- Have important items on top of the list

- Use bullet for lists of items with equal status and use number lists if a particular order to the items is required.
- Start numbered items at one and not zero
- Display related items in a list rather than using continuous text
- Have an introductory heading on top the list (E.g.: word or phrase)
- Format lists for easy to browse and understand by using meaningful labels, effective background colors, borders, and white space allowing users to identify a set of items discreetly.
- Capitalize first letter of first word in the list to distinguish each list item.

LINKS

- **Use meaningful Link Labels**

The link labels (URL Name) and concepts should be meaningful, understandable, and easily differentiated by users rather than the developers. It's not recommended to use link label such as „Click Here“ and „More“ as it can be counterproductive

- **Match Link Labels with Destination Page**

The link label should be consistent with the title or headings of the destination page. This gives better understanding to users that they have reached the right destination.

If users will have to click more than once to get to a specific target, avoid repeating the exact same link label (used previously to arrive to the 2nd level) over and over as users can be confused if the links at each level are identical or even very similar.

For instance if a user clicked on a link entitled „Restaurants“, the next page had three links. One of them was again titled „Restaurants“. But the two „Restaurants“ links are targeted to different places. In such situations users tended to click on another option on the second page assuming had already reached „Restaurants“.

- **Avoid misleading users for a Link**

Items that are not clickable shouldn't have the characteristics that make the user to click. This mainly occurs when underline text are available on article. Symbols must be combined with another indication that suggests the user that it's a link such as having a frame and not having a frame.

- **Provide consistent indications for links**

Provide sufficient indications to clearly indicate to users that an item is clickable across the website. It's common that, top centre or left and right panels of the webpage have a high probability of being considered links.

- **Repeating of important Links**

Important content should be accessible from more than one link/page such as Home page of the website

- **Using of Text Links**

Use text links rather than image links which comes as small banners. But use small banners only when the link has a greater significance. It is usually easier to convey a link's destination in text, rather than with the use of an image. Use terms such as "Get", "Find", "Download" as prefix for banner label names.

- **Indicate Used Links**

Use color changes to indicate to users when a link has been visited

- **Use appropriate Length for Text Link**

Use text links fit into menus or link locations where it's long enough to be understood, but short enough to be minimized and wrapped.

- **Indicate Clickable Regions of Images**

When any part of an image is clickable, ensure that the entire image is clickable or that the clickable sections can be distinguished from other areas.

NAVIGATION

- **Provide Options for Navigation**

Do not point users into webpage's that has no navigational options for the user to at least to return to the previous page by placing a back button or action control that will close the window and return the user to the original browser window.

- **Differentiate and cluster Links**

Place navigation elements in a manner where they can be clearly differentiated from one another, and group them and place them to find easily consistently on each page. This will enable users to move from each page with much ease as navigation scheme on all pages are consistent in locating tabs, headings, lists, search, site maps, etc.

- **Use "Anchor Links" on Long Pages**

For long pages, have a „list of contents“ on top of the page with links that take users to the corresponding content down the page. These links are called "Anchor Links" and it provides two purposes: (1) Provides an outline of the page where users can quickly determine whether the web page contains the desired information (2) Allow users to quickly navigate to targeted information. Pages designed in this manner are equivalent to Wiki model of content displaying.

- **Identifying User Location**

Provide feedback for users know where they are in the website by using breadcrumbs, sitemaps, changing the color of a link that has been clicked and using other visual indicators to indicate the active portion of the screen.

- **Have Descriptive Tabs and Labels**

Make tab labels clearly descriptive of their function or destination and if they cannot be made clear due to lack of space, avoid using them. Also make the navigation tabs located at the top of the page, to look like real-world tabs.

- **Use sitemaps**

Use sitemaps for all websites that has pages moving in with sub menus to show the content flow of the website.

- **Provide „Glosses“**

„Glosses“ are short phrases of information that pop up when a user places his or her mouse pointer close to a link - to help user's select correct links

- **Do not enforce**

Do not force users to take actions e.g. Ex. Bookmark a certain page etc.

- **No Frames**

Avoid using frames since it restricts book marking. Use frames only when there is a need to embed an external website page to the website.

- **Referring to External sites**

When referring to external websites always open in a new window. If a document is embedded in a web page, open the document in a new window

- **Common menu items to be used**

- About us
- Divisions
- Contact us
- Sitemap
- Downloads
- Reports
- Statistics

- **Important Links**

- Search
- Help
- Terms & Conditions
- Copyright
- Privacy policy
- Disclaimer

OPTIMIZING THE USER EXPERIENCE

- **Not to Display unwanted pop-up's**

Do not have unwanted windows or graphics „pop-up“ to users

- **Increase the Credibility of the website**

Optimize the credibility of information-oriented website by following means

- Design the website to look professional.
- Provide author's credentials.
- Provide citations and references for required articles.
- Provide archive to refer past content such as news, magazine, etc.
- Have the website frequently updated.
- Have frequently asked questions (FAQ) and answers for important questions.
- Arrange the web content in a logical way
- Provide links to outside sources and materials when extracts are taken or when reference are required.
- Link the site to other credible sites such as www.gov.lk and www.gic.gov.lk

- **Standardize Task**

Make users to do the tasks in the same sequence and manner across under similar conditions. (e.g. having calendar control across the site or text box to enter date)

- **Reduce User Workload**

Make computer to perform most of the functions making the user experience easy such as using calendar controls for feeding the date, identity card validation to prevent entering invalid identity card number etc.

- **Minimize memorizing while browsing**

Make users to remember minimal information when moving from one place to another place on the website. This mainly comes in to act when items are compared. By placing items side-by-side users do not have to remember information even for a short period of time.

- **Warn on “Time Out”**

When web page is programmed to „time out,“ warn users before time expires so users can request additional time.

- **Provide information/data in a directly usable format**

Provide data and information in a format that does not require conversion by the user. Convert or summarize information for it to be immediately useful by using figures in a table or support multiple user preference (E.g. ability convert 12-h to 24h, Fahrenheit to Celsius etc)

- **Have Articles for Web reading and Printing**

Prepare web pages in order to read online or printed. Printing is vital for lengthy articles on the web and make sure that printable versions are properly formatted.

- **Inform Download time**

Indicate users the time required to download a file at a given connection speed and the capacity of the document. This also refers to streaming content where it should notify the correct line speed for optimum viewing.

- **Prevent users to do multi tasking**

When reading speed is important; do not make users to perform other tasks while reading from the monitor. For instance do not make users to look at the information on one page and remember it while reading the information on another page.

- **Provide Feedback when User Required to Wait**

Provide users with appropriate feedback when they are required to wait when a process is happening on the background.

- Use of hourglass to indicate status.
- Use of process indicator to show the progress toward completion.
- Use of auditory signal to denote processing is complete.

SEARCH

- **Ensure usable search Result**

Do not confuse the user by providing a confused search results. Make the users search result by providing the precise information, and in a format that matches users' expectations.

- **Search the entire site**

Search engines of the website should search the entire website including PDF files, or clearly communicate which part of the site will be searched. Provide facility for users to narrow the scope of searches from a large search result by selecting relevant options.

- **Search should not be case sensitive**

Disregard case sensitivity on the search when entered as search terms.

- **Search options**

Provide search facility on each webpage of website, which will enable the user to filter search at any given moment.

- **Allow simple searches**

Design the search facility to support users who enter a small number of words. Provide a textbox to enter search terms that could accommodate at least 35 to 40 characters but visualize only 20 to 25 characters in the textbox.

- **Notify when multiple searches are available**

When more than one type of search option is provided such as Simple and Advance, ensure that users are aware of search options and how each is used optimally.

- **Provide search template**

Provide templates to facilitate the user to optimize the search result.

E.g.:

Find information on “User Testing” and search template key words „Interface testing“ / „Heuristics testing“ / „performance testing“ / „Alfa testing“ / „beta testing“

- **Use appropriate Meta tags**

Use appropriate Meta tags to define the site for search engines.

```
<meta name="keywords" content=" keyword one, keyword two, keyword three" />
```

SOFTWARE AND HARDWARE

Web designers should attempt to accommodate ninety-five percent of internet user which uses different browsers and different operating systems.

- **Design for common browsers**

Design, develop and test the website for the most common browsers. Microsoft Internet Explorer (MS IE) and Firefox must be supported. It is recommended that Opera and Safari are supported too. Commonly used browsers can be found from;

http://www.w3schools.com/browsers/browsers_stats.asp

- **Consider browser differences**

It's advised not to assume that all users will have same browser settings which lead to same browser features. For example users with visual impairments tend to use larger fonts, and use fewer colors. The developer should have a general idea on what settings most users are using, and specify on the website exactly what assumptions were made about the browser settings (e.g.: best viewed on 1024 x 768)

- **Design for common Operating Systems**

Design the website so it will work well with the most popular operating systems.

Commonly used Operating Systems can be found from;

http://www.w3schools.com/browsers/browsers_os.asp

- **Consider Internet Bandwidth**

Develop the website for the connection speed which supports most users. It's recommended to develop website for 56k internet bandwidth to cater wider audience.

- **Design for commonly used Resolution**

Develop websites for screen resolution set at 1024x768 pixels. Ensure that all testing of websites are performed under this screen resolution. This should also support dynamic browsers which can change browser resolution.

GRAPHICS, IMAGES, AND MULTIMEDIA

- **Background image – make it simple or avoid**

It's advised to use background images carefully and make sure they are simple (without complex designs), especially if they are used behind text. Background images can make difficult for users to read foreground text if it's not used properly. Keep the image resolution as low as possible to make it not affect the download speed.

- **Optimize the image capacity**

Optimize the images on the website as it shouldn't affect page download time unnecessarily. Use interlacing or progressive images; and use several of the same images to speed download time. To achieve faster response time for users with dial-up modems, limit page size not to exceed 130 Kilobytes.

- **Limit the image usage**

Make sure the images add value to the website and use them only when it's critical to the success of the website. Images will bring extra looks and clarity but make sure that doesn't frustrate users when browsing the website.

- **Use Thumb Nails**

When viewing full-size images is not critical (such as in Galleries), first provide a thumbnail of the image. By providing thumbnails images, users can decide whether to wait for the full image to load or to load full-size copy.

- **Use multimedia meaningfully**

Use video, animation, and audio only when it's required to convey the indented message more efficiently.

- **Display Monitoring/Analytical information graphically**

Use a graphic format of displaying data when users need to monitor changing data across the X axis.

- **Introduce Animations**

Briefly explain users what they are about to see before they see animation. Also, make the animation to be user-controlled by mute, pause, stop, replay, or ignore animation or other multimedia elements.

- **Use of real world objects**

Use images to symbolize real-world items only when it's appropriate such as using a speedometer.

- **Use images to facilitate learning**

To facilitate quick learning or pass information more efficiently, use images rather than text whenever possible. It is recommended to use Flash for media which has a high probability of working across multiple browsers running on multiple operating systems.

▪ **Using photographs of people**

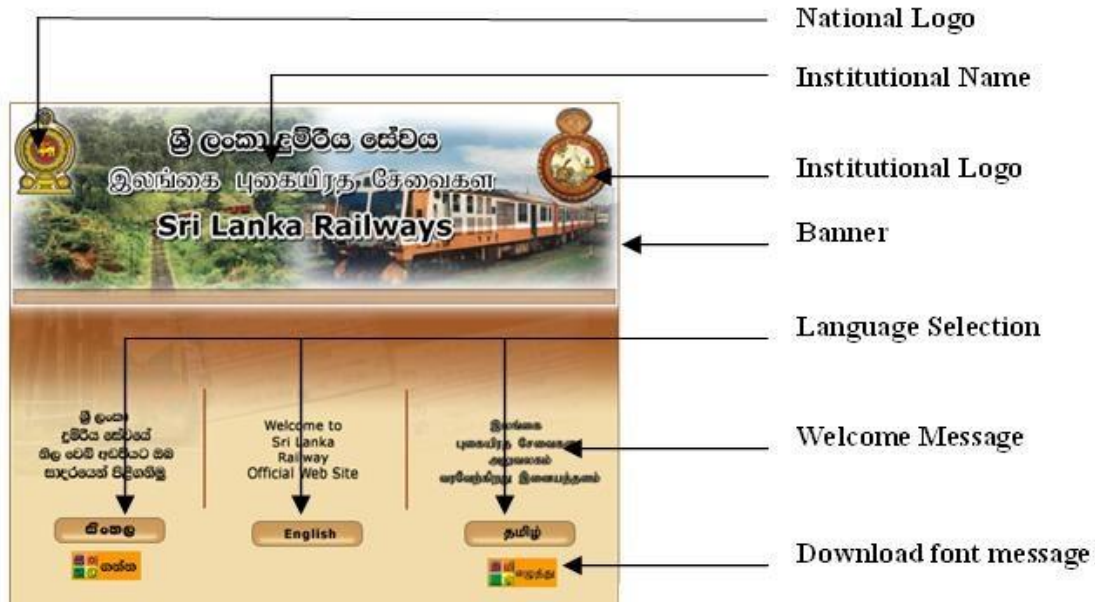
Use of photographs of people may or may not help build trust in websites. Therefore use peoples need should be carefully handled.

DOWNLOADS, PLUG-INS AND APPLETS

- If the file size is large force the user to download the file rather than opening it within the browser. Since the browser stay blank until the file get downloaded, the user may think it is not working or something went wrong
- Use open standard controls (zip, PDF etc)
- Show the Web link to download the required software
- If the users are not supposed to edit the document use PDF format for the document
- To ensure accessibility, test any applets, plug-ins or other applications required to interpret page content to ensure that they can be used by assistive technologies
- Applets, plug-ins and other software should be thoroughly tested for accessibility
- Ensure that plug-ins and applets meet the requirements for accessibility
- Avoid using uncommon media plug-ins which could redirect the user to other websites to download plug-ins.

6 LOOK AND FEEL

WELCOME PAGE



- All content must be visible at 1024 pixels by 768 pixels resolution without scrolling.
- Welcome Page must be centered in the browser page
- Banner
 - The National emblem should be left aligned and placed on top of the Banner
 - The organization's logo should be right aligned and placed on top of the Banner
- Institutional name
 - The name of the organization should be centered on the banner and the order should be Sinhala, English and Tamil
 - The font size should be made relative to the body text
 - The font type and size:
 - Sinhala version should be Bashitha 20px to 30 px
 - English version should be Arial 25px to 30px
 - Tamil version should be Latha 22px to 25 px
- Welcome message
 - The order of the welcome messages should be Sinhala, English and Tamil as shown in Figure 1
 - The font type and size:
 - Sinhala version should be Bashitha 15px

- English version should be Arial 15px
- Tamil version should be Latha 14px
- Buttons
 - Buttons should appear in the following order Sinhala, English and Tamil
 - Download font logo should be placed along with the corresponding button as shown in Figure 1

HOME PAGE AND OTHER PAGES



- Language selection buttons and links to Sinhala and Tamil language pack should be placed on right top corner with the Gov.lk emblem which links to www.gov.lk website.
- Banner
 - The National emblem should be left aligned and placed on top of the Banner
 - The Institutional logo should be right aligned and placed on top of the Banner
 - The national logo and the institutional logo should appear on the banner and the Institutional name should be placed between the two logos
 - The banner width should be length of the window and the height should be 80 px - 140 px
- Main heading
 - Font type and size –
 - Sinhala version should be Bashitha/ Malithi Web – 20px
 - English version should be Verdana – 20px
 - Tamil version should be Latha – 20px
 - Institutional name should appear as the Main heading in the following order, Sinhala, English and Tamil.
- Menus
 - Font type and size :
 - Sinhala version should be Bashitha/ Malithi Web – 12px
 - English version should be Verdana – 12px
 - Tamil version should be Latha – 12px
- Contrast

Banners must have high level of contrast, to support people having colour deficits or when viewed on a black and white screen, between the background colour or image and the text elements.

- Search
 - Place the Search on the right hand side in the bottom part of the banner
- Third-party symbols and hyperlinks
- Navigation path
 - “Breadcrumb trail” should be placed immediately below the common menu bar on all webpage’s except Welcome Page.
- Privacy Notice should be placed near the copy right
- Pages under construction
 - Do not display pages under construction. If a certain menu/hyperlink directs to a page that is under construction, disable the menu / hyperlink
- Standards for Sinhala and Tamil terms - Refer Glossaries published by ICTA (http://www.siyabas.lk/sinhala_it_glossary) and Department of Official languages (<http://languagesdept.gov.lk/glossary/>)
- Content date indicator
 - Place in the footer
 - The website should provide a clear date indicator for the resources. The Government organization must implement a content date in the footer, in the form “Date Modified: YYYY-MM-DD”. The date format should be in compliance with ISO 8601
- Copyright symbol
 - © Institution name, date
- The web developers name should not be published in the website.

7 MINIMUM INFORMATION PROVISION STANDARDS AND GUIDELINES

DESCRIPTION

Provides for a consistent level of information across all websites to facilitate; access to government services, transparency of operations and legal/regulatory compliance.

RATIONALE

To provide citizens with relevant and consistent levels of information across all Government websites to assist usability by establishing consistent user expectations for information provision.

RELATED PRINCIPLES

Citizens can trust online information and services when the provided content in the Government website are consistent and in a defined format that covers precise format defined by a standard.

7.2 MINIMUM REQUIREMENTS

- Welcome page should carry the welcome message to the official website of the organization
- Link to government web portal (www.gov.lk with gov.lk icon) language selection (refer chapter 2)
- The Home page (the page loaded after the welcome page in the selected language)
 - Short descriptive summary about the organization (purpose of the organization).
 - eServices - Grab the attention of any service (eService) which the user can obtain through the website for user to look in through banners, marquees, scrolling contents, frequently changing contents etc
 - Have News items scrolling through.
 - Any other important information where the organization preferred to give attention
- "About us" page. The About us page can have sub sections
 - Overview - Brief description of the organization, its history, legal mandate, Vision, Mission, Goals, Objectives, subjects and functions handled)
 - Organizational structure – A graphical image defining the organization hierarchy
 - Description of Key Members in the organization
 - Cadre (optional) - Organization carder with Approved carder and Vacancies
- Service directories or programme details that include:

- Description of services provided
- Hours of opening or other availability (where relevant)
- Service delivery points
- Method of obtaining the service
- Contact information
- Fees payable
- Downloads relating to the organization
 - Archive of previous volumes of reports, publications, etc
 - Complete list of legislation under which the organization operates with a link to the site from which to download.
 - Complete list of regulations that the organization issues (circulars, gazettes, etc) with links to download them
 - Organization's guiding policy document (originating from the Government Policy)
 - Complete list of publications and details of how to access (non-online documents)
- Contact details
 - Provide sufficient details to enable contact with the relevant head office and sub offices from anywhere in the world by letter, phone, fax, electronically or in person or directorate of the organization
 - Links to the relevant Minister's contact information and portfolio responsibilities
 - A mechanism by which to contact the website content owner or administrator
- Legal statements
 - Statement on privacy (collection of personal information, maintenance and their disposal) and accessibility statements
 - Copyright and disclaimer statements
 - Disclaimer notice
- Date last updated / reviewed on each page
- Frequently Asked Questions (FAQs)
- Sitemap of the website
- Search facility to search contents in the website with search options

8 INFORMATION ARCHITECTURE AND CLASSIFICATION

WHY IS INFORMATION ARCHITECTURE IMPORTANT

Information Architecture is the organizing of structure of a website and content by means of labeling and categorizing of information and design of navigation and search systems. The aim of the information architecture process is to help users find information and accomplish their tasks.

While a variety of websites is provided by the Government organizations, it does not permit a standard set of labels and navigation structure at present. A standard process for developing, documenting and reviewing these labels and categories of information will ensure that organizations develop their awareness of information architecture and consider the needs of users when developing these structures.

Information Architectures vary according to the purpose of the website. Two broad types of websites have been defined, based on purpose. They are as follows:

- Corporate websites - describing the structure and functions of the relevant organizations (Examples: www.moe.gov.lk, www.treasury.gov.lk, www.cbsl.gov.lk, www.statistics.gov.lk)
- Thematic or portal website - deals with content on a specific topic. Includes channels and single entry points to a range of related websites. (Examples: www.ds.gov.lk, www.gov.lk)

THE BENEFITS OF AN INFORMATION ARCHITECTURE STANDARD

The benefits of an information architecture standard to an organization include the following:

- The provision of better web experience and service to clients
- Consistent description of Government information and services
- Better support for planning the purpose, structure and navigation of new websites
- Increased awareness of the context in which the website operates to minimise duplication of effort
- Better support for maintenance of websites through appropriate documentation of the site's purpose and structure

MINIMUM REQUIREMENT

Organizations must develop and maintain a documented Information architecture plan that describes and justifies the information architecture for each of the websites within the

portfolio or the portfolio as a whole. Organizations must have a schedule that demonstrates how they will update the information architecture to reflect site changes.

Useful links

http://www.steptwo.com.au/papers/kmc_whatinfoarch/index.html

http://www.webmonkey.com/tutorial/Information_Architecture_Tutorial

<http://www.iainstitute.org/>

9 CONTENT APPROVAL AND REVIEW PROCESS

DESCRIPTION

All Government organizations, from concept to publication, are subject to rigorous review to ensure the highest possible quality. Product review will:

- Ensure that the Government organization provide information cohesively.
- Save money and time by collaboration between web developer and reviewers (owner / organization)
- Target the right audiences
- Develop website that comply with Government policies
- Avoid superfluous, redundant or conflicting information
- Ensure quality editorial content and graphics features
- Convey information with maximum effect and timeliness

RESPONSIBILITIES

- ICTA
 - Provide guidance and policies to help responsible offices produce quality website
- Government organization
 - To own the lead role of content providing, reviewing and approval process.
 - Ensure that the website contains clear, consistent messages; identifies and addresses key issues or audiences; and meets important organizational milestones and schedules
 - Ensure the content is consistently provided in Sinhala, Tamil and English languages.
- Developer
 - To develop a comprehensive website in align to Government policies and web standards.
 - Identify the requirement of the client (relevant organization) and focus in achieving the requirements in optimum manner.

PROCESS

- Content Management team

The Approval and review process is always centralized around the organization which owns the website. As per the **web development guideline**, web development process is the responsibility of the Content Management Team (CMT) which is represented by officers from each division/unit of the organization and headed by a senior officer of the organization who

has been appointed as the Content Manager of the organization. The CMT is required to take the full responsibility of keeping the website live and up-to-date by providing relevant and current information.

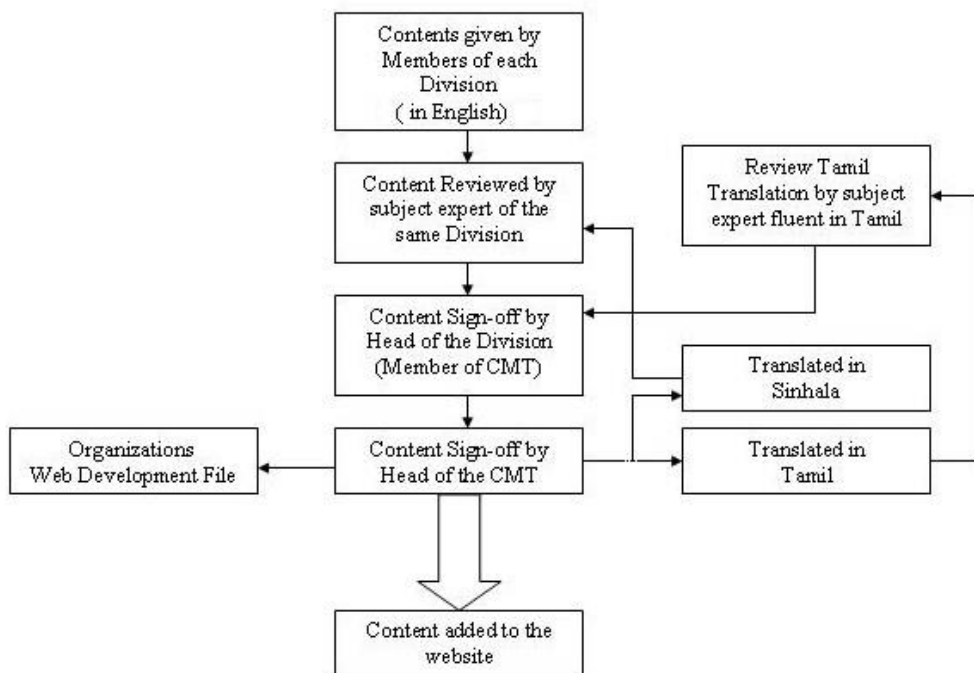
MANUAL PROCESS

The approval and review process can be handled in 2 levels and Sign-off in 2 levels

1. The divisional head or Subject expert needs to perform the review process before its signed-off by the head of the division.
2. Since content providing responsibility relies on the heads of each division of the organization all content needs to be signed-off by the relevant heads of the division.
3. The content also needs to be signed of by the head of the organization before it's sent for File, Translation or publishing in the website.

All Government organizations need to follow the following review process before approving the content to be published on the website. The following diagram refers to a situation where the organization gives English as the default content and its getting translated to Sinhala and Tamil. The content can be prepared by divisional head or it can be assigned to any responsible officer under the division. But the content always needs to be reviewed by another member of the division who is also an expert in the subject.

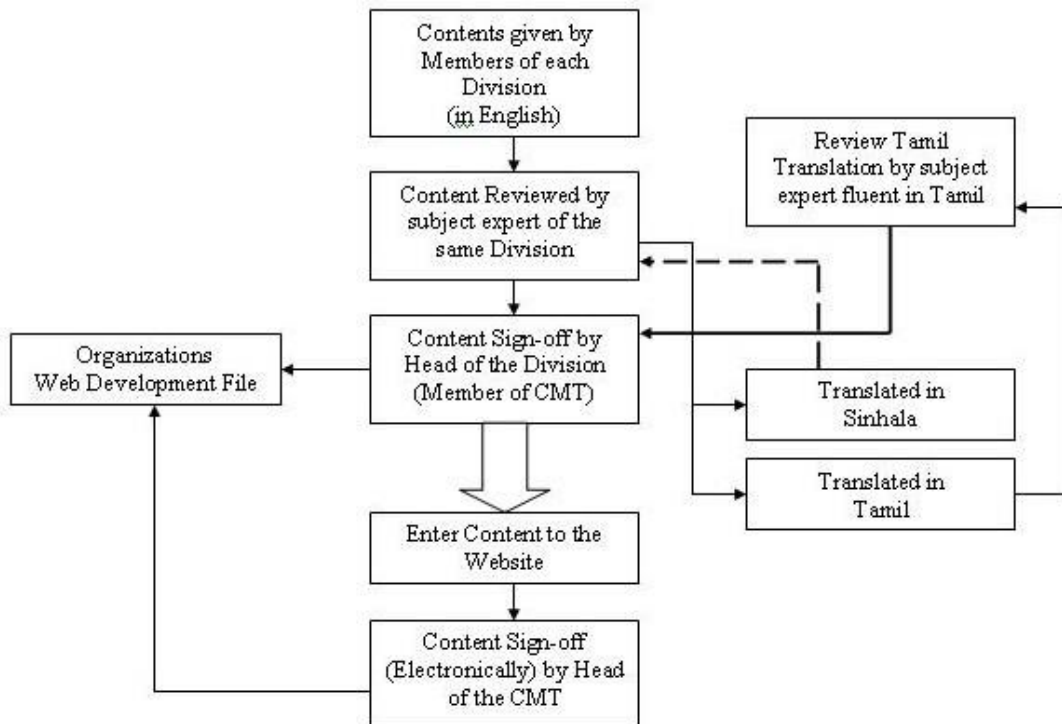
Once the content is reviewed and signed-off by CMT or Content Manager the signed-off document should be placed under the „web development file“ which maintains all related document in developing the website for the government organization.



ELECTRONIC PROCESS

The process can only be used when there is a Content Management System (CMS) is involved with a content approval and publishing feature.

Through the electronic process the content will be entered before it's electronically Signed-off by the Content Manager and publishing the content. The organizations can follow the following workflow when using CMS systems for content approval process. Since most of the currently available CMS provide one level of sign-off facility the below mechanism shall be used.



10 LEGAL ASPECTS

COPYRIGHT AND COPYRIGHT NOTICES

Copyright is a type of legal protection which gives recognition to expression of ideas. Under copyright ideas by themselves are not protected but what is protected are the expression formats. The most common forms are writing, visual images, music and moving images. In the early days expressions were in written and printed form. Whilst copyright gives protection for written and printed forms of expression, copyright adopted itself to give protection to give expression in digitized and electronic formats as well.

Most of the content items incorporated in a web page are protected by copyright. For example:

- Text (protected as a „literary work“);
- Charts and tables of information;
- Moving images may be protected as a „cinematograph film“;
- Recorded sounds may be protected as a „sound recording“.
- Artwork (as an „artistic work“);
- Computer programs.

In Sri Lanka the Intellectual Property Rights (IPR) act No 36 of 2003 provides the protection for the above mentioned content as literary, artistic or scientific work. These „works“ protected should be original intellectual creation in the literary, artistic or scientific domains as provided for under section 6 of IPR ct.

Section 6 (2) of the IPR Act states that the literary, artistic or scientific works are protected by the sole fact of their creation, irrespective of their mode or form of expression. Therefore expressions in digitizing electronic format are also protected under the Sri Lankan IPR act.

It should be noted that only the owner of copyright protected work has the exclusive right to reproduce the work, translate the work, publicly distribute the original or copies and carryout adaptation, arrangements and other transformation of the works.

If content is copied from third party web sites/sources be mindful about the copyright of such materials and obtain permission from the owner of the copyright work before using such materials.

Therefore it is also necessary to obtain permission from the copyright owner of the sites which links are given in Government website. In addition, provide clarification to users what elements from another site have been authorized by the owner of copyright in that material. A disclaimer concerning information on linked sites may also be included on the home page.

Under section 8 of IPR act works such as official text of a legislative, administrative or legal nature are not protected by copyright law. Therefore administrative documents such as circulars and prescribed forms prepared pursuant to relevant governing statutes are not copyright protected and could be published on the website for free downloading.

Therefore the government organization having a website of its own should make available official texts which are of legislative and administrative nature without claiming copyright ownership.

However it's advisable for the government organizations to take the responsibility for the documents which are referencing to the relevant sections of the statutes under which such documents are issued. These documents could be provided in PDF format.

The content of the website as a whole and all inside pages should contain clear copyright notice so as to make it clear that the contents of the website are copyright protected and that it belongs to the organization concerned.

Copyright statement could take the following format.

© *Name of the organization (Year)*

The website of a government organization may contain articles, publications and other content which are published by individuals or groups of individuals (e.g.: research publications). The copyright to these works should be respected and the websites should clearly indicate to whom the copyright belongs

The following example copyright notice could be used by Government organizations in their website.

Reproduction of part or all of the contents in any form of this web site, or pages within it, is prohibited other than for individual use only and may not be recopied and shared with a third party. The permission to recopy by an individual does not allow for incorporation of material or any part of it in any work or publication, whether in hard copy, electronic or any other form. Any official text of a legislative or administrative nature, for which Copyright protection does not apply, could be freely downloaded and distributed.

DISCLAIMERS

A disclaimer is a legal statement which defines that the government agency issuing the disclaimer notice is not responsible for any calamity in the event of using any information or data the disclaimer is attached to.

The disclaimer may refer to information on the website and/or websites which are linked. It is recommended that you seek legal advice to develop a disclaimer particular to your circumstances.

A disclaimer should have some prominence so that a site visitor has a reasonable chance of seeing it.

The website should contain the following declaimer notice

This website is intended for informational purposes only. Nothing in the site, or any inside pages within it, is to be considered as either creating a binding relationship between the reader and the <Name of Organization> or as rendering of any advice for any specific matter.

No person reading this site, or contents within it, should act or refrain from acting on the basis of any information contained in this website without seeking appropriate legal or other professional advice on the particular facts and circumstances at issue.

DATA PROTECTION

- Data owners have a right to access the information held about them, which is subject to certain exceptions (E.g.: prevention or detection of crime).
- Data should be only used for the specific purposes for which the data was collected.
- Data should not be disclosed to external parties without the consent of the individual, unless there is legislation or other overriding legitimate reason to share the information (E.g.: prevention or detection of crime). It is an offence for external parties to obtain data without authorization.
- Data/information should not be kept for any longer than necessary.
- Personal information may not be transmitted outside the relevant organization unless the individual has given the consent or adequate protection is in place through the transmission and where it's kept.
- Government organizations holding personal information are required to have adequate security measures in place.
- Collection, storing and transferring data/information should be done in a secure manner

11 WEB SECURITY STANDARDS

Web security guidelines need to be followed in 3 major areas.

HOSTING ENVIRONMENT SECURITY

- Network architecture
 - Firewalls (Install and maintain a firewall configuration to protect data)
 - Proxy
 - IDS/IPS
 - Physical components (Servers & Routers)
- Operating System & Middleware (Database, web server, user levels & privileges)
- Logs and Monitoring
- Physical security
- Needs to validate the CAs
- Security in Backed up information
- Outsourced operations

APPLICATION LEVEL SECURITY

The developers need to adopt below top level security area in a web application. Apart from the below major factors the web developers are also needs to look into web security checklist which is available at http://www.icta.lk/attachments/254_Web_security_checklist_v1.0.pdf

- Architecture and design with security in focus (SQL injection and cross site scripting)
- Follow secure coding guidelines relevant to the programming language. (version control)
- Application level access control and session management.
- Secure storage of sensitive data (One way Encryption, encrypt and sign)
- Use of Captcha (Human answerable questions)
- Using Captcha"s to avoid scriptingattacks.
- Implement security updates and version upgrades if any third party content management tool is used.
- In addition, all government organizations should obtain a "security level assessment certificate" on their website from Sri Lanka Computer Emergency Readiness Team (SLCERT) or any other information system security (IS) auditor and should implement their recommendation before hosting the site. Furthermore, it is recommended to carry out periodic security reviews of the website though a qualified IS auditor.

- The Government officer who managing the organizational web site are advice to frequently review web hackers site in order to understand the previously threats.

DATA TRANSMISSION SECURITY

- Sensitive data transmitted through secure channel (SSL, SFTP)
Consider encryption, digital signatures, two-way SSL
- Administrative activities should be done in a secure channel.