

Accessibility Technologies and their impact on University Web Services

A University of Limerick Perspective



UNIVERSITY of LIMERICK

OILESCOIL LUIMNIGH

Presented by Tracey Mc Killen,
Corporate Systems

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Presentation Overview

- Introduction to Accessibility
- Irish Public Policy
- University Web Services – University of Limerick (UL)
- Web Development
- Accessibility Technologies
- UL experience to date



Web Accessibility

"The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect."

(Tim Berners-Lee, W3C Director and inventor of the World Wide Web)

"Goal of web accessibility is to ensure that information or services delivered through websites are available to and usable by the widest possible audience." (National Disability Authority)

- 17% of total adult population have hearing loss
- 19% of Irish population are aged 55+
- 8% of men and 0.5% of women have some form of colour blindness



Web Accessibility

5 main areas which hinder people from using the Internet

- **Visual impairment** – restricted or no vision and colour blindness. Screen magnifier, screen reader.
- **Motor impairment** – inability to use keyboard / mouse. Tracker ball, pointer device.
- **Hearing impairment** – if sound is used on website it's contents should be replicated using a text alternative.
- **Cognitive ability** – reading difficulty, dyslexia, memory loss. Simple language, clear document structure, consistent navigation.
- **Technical Limitations** – old technology, slow connections. Website should not rely heavily on graphics and Flash technology.



Legal Requirements

Legal requirements that are relevant to Irish University websites

Public Policy

Irish public policy includes requirements for government departments and agencies to procure accessible ICT solutions where possible.

In particular, all government departments are now expected to have their websites accessible to Priority 1 & 2 of the Web Content Accessibility Guidelines (WCAG) 1.0 from the Web Accessibility Initiative (WAI).



WAI & WCAG

Web Accessibility Initiative (WAI)

The World Wide Web Consortium's (W3C) commitment to lead the Web to its full potential includes promoting a high degree of usability for people with disabilities.

WAI, in coordination with organizations around the world, pursues accessibility of the Web through five primary areas of work: technology, guidelines, tools, education and research.



WAI & WCAG

Web Content Accessibility Guidelines (WCAG) 1.0

- Explain how to make web content accessible to people with disabilities.
- Promote accessibility
- Make Web content more available to *all* users, whatever **user agent** they are using (e.g., desktop browser, mobile phone, etc.) or **constraints** they may be operating under (e.g., noisy surroundings, in a hands-free environment, etc.).
- Help people find information on the Web more quickly



Web Content Accessibility Guidelines (WCAG) 1.0

Examples

1.1 Provide a text equivalent for every non-text element

WAI Checkpoint 1.1

1.2 Ensure that information does not rely on colour perception

WAI Checkpoint 2.1

1.3 Avoid causing the screen to flicker

WAI checkpoint 7.1

1.4 Provide an auditory description of the visual information in multimedia presentations

WAI checkpoint 1.3



University Web Services – University of Limerick

- Unix Environment - Sun Solaris, Apache, MySQL, PHP, Server Side Includes
- Web Accounts – issued to staff / colleges / departments / research centres / administrative offices
- Decentralised web system – content managed by web account owner
- Homepage & Top Level pages – maintained by Web Editor



University Web Services – University of Limerick

- 326 web accounts
- Number of html pages = 18,984
- Number of PHP pages = 13,954
- Web Stats
 - Average monthly page views = 1,945,381



University Web Services – University of Limerick

- Software to maintain web sites throughout the University – FrontPage, Dream Weaver, Flash
- ITD provide departments with FrontPage and WS_FTP, department can provide their own software
- External web developers creating sites for UL departments and offices (PHP / MySQL solutions)
- Inaccessible html code



Web Development

- Redesign of corporate web templates
- Homepage and top level pages
- Administrative websites that currently use corporate templates
- Content Management System – ITD website
- Plan to bring top level pages into CMS



Accessibility

- Impact of accessibility obligations on existing services
- Existing services
 - amend web policy by adding to our legal requirements section that new websites must reach Priority 1 & 2
 - insisting all external web developers must comply with this – we run checks on their pages before website goes live



Accessibility

- How accessibility is influencing UL's web development projects
- Development projects
 - CMS that can create accessible templates – current one can provide this
 - New corporate web templates (flat html version) – Priority 1 & 2 compliant
 - Templates created in CMS – Priority 1 & 2 compliant



Accessibility Software

- Accessibility software for checking web pages available online
 - The Wave <http://www.wave.webaim.org/index.jsp>
 - Bobby <http://bobby.watchfire.com/bobby/html/en/index.jsp>
 - Cynthia Says <http://www.cynthiasays.com/>



Accessibility Software - The Wave Results

Sample from results page

The screenshot shows the University of Limerick website with various accessibility annotations. The page has a dark blue background. At the top left, there is a yellow arrow icon with the text '*1*' and a small flag icon. Below this, the University of Limerick logo and name are visible, along with the text 'UNIVERSITY of LIMERICK' and 'OILLSCOIL LUIMNIGH'. A green 'alt' label is positioned over the logo, with a text box containing '*UL Crest*'. To the right of the logo, there is a yellow arrow icon with the text '*2*' and a small flag icon. In the main navigation area, there are several yellow arrow icons with text labels: '*3*' above a horizontal line, '*4*' above the 'News' link, '*5*' above the 'Contact' link, '*6*' above the 'Help' link, and '*7*' above the 'Search' link. A red triangle icon is placed below each of these links. To the right of the 'Search' link, there is a yellow arrow icon with the text '*8*'. At the bottom of the page, there are two more yellow arrow icons with text labels: '*9*' and '*10*', with a small flag icon next to '*10*'. A dashed purple line is drawn across the bottom of the page content area.



Accessibility Software - Explanation of Wave Icon

 **FORMATTING ELEMENT:** Layout table

This icon appears where a table is present, but does *NOT* have any table headercells (<th>)

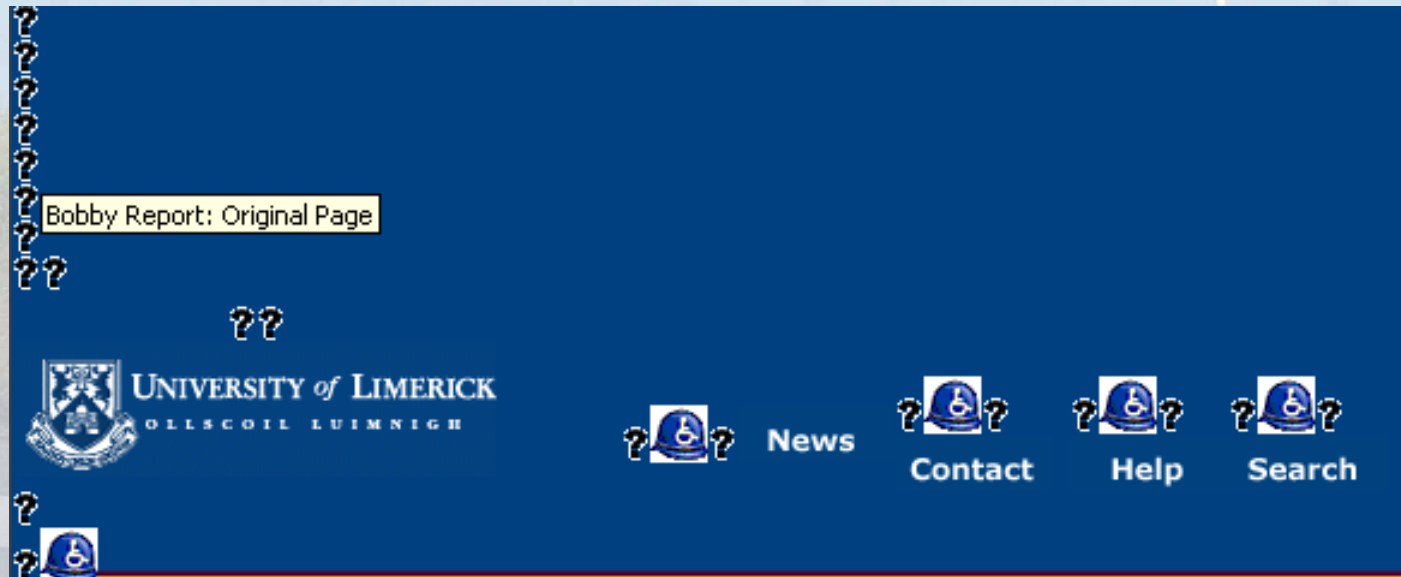
Recommended Actions

Ensure that the table is indeed only a layout table, and that it does not contain tabular data. If it contains tabular data, mark up the header cells appropriately (using <th> tags), and associate the data cells with the proper header cells



Accessibility Software – Bobby Results

Sample from results page



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Accessibility Software – Explanation of Bobby Results



1. If you use color to convey information, make sure the information is also represented another way. (39 instances)

Lines 82, 85, 86, 89, 90, 91, 92, 93, 104, 260, 261, 266, 274, 284, 290, 301, 319, 324, 327, 330, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 407

2. If this is a data table (not used for layout only), identify headers for the table rows and columns. (5 instances)

Lines 83, 293, 258, 338, 384

3. If an image conveys important information beyond what is in its alternative text, provide an extended description. (28 instances)

Lines 85, 89, 90, 91, 92, 260, 266, 274, 284, 290, 301, 319, 324, 327, 330, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376



Accessibility Software – Cynthia Says Report

Verification Checklist Checkpoints

1.1 / (a)

1. Provide a text equivalent for every non-text element (e.g., via "alt", "longdesc", or in element content). *This includes:* images, graphical representations of text (including symbols), image map regions, animations (e.g., animated GIFs), applets and programmatic objects, ascii art, frames, scripts, images used as list bullets, spacers, graphical buttons, sounds (played with or without user interaction), stand-alone audio files, audio tracks of video, and video.
 - Rule: 1.1.1 - All IMG elements are required to contain either the alt or the longdesc attribute.
 - **Failure** - IMG Element at Line: 89, Column: 183



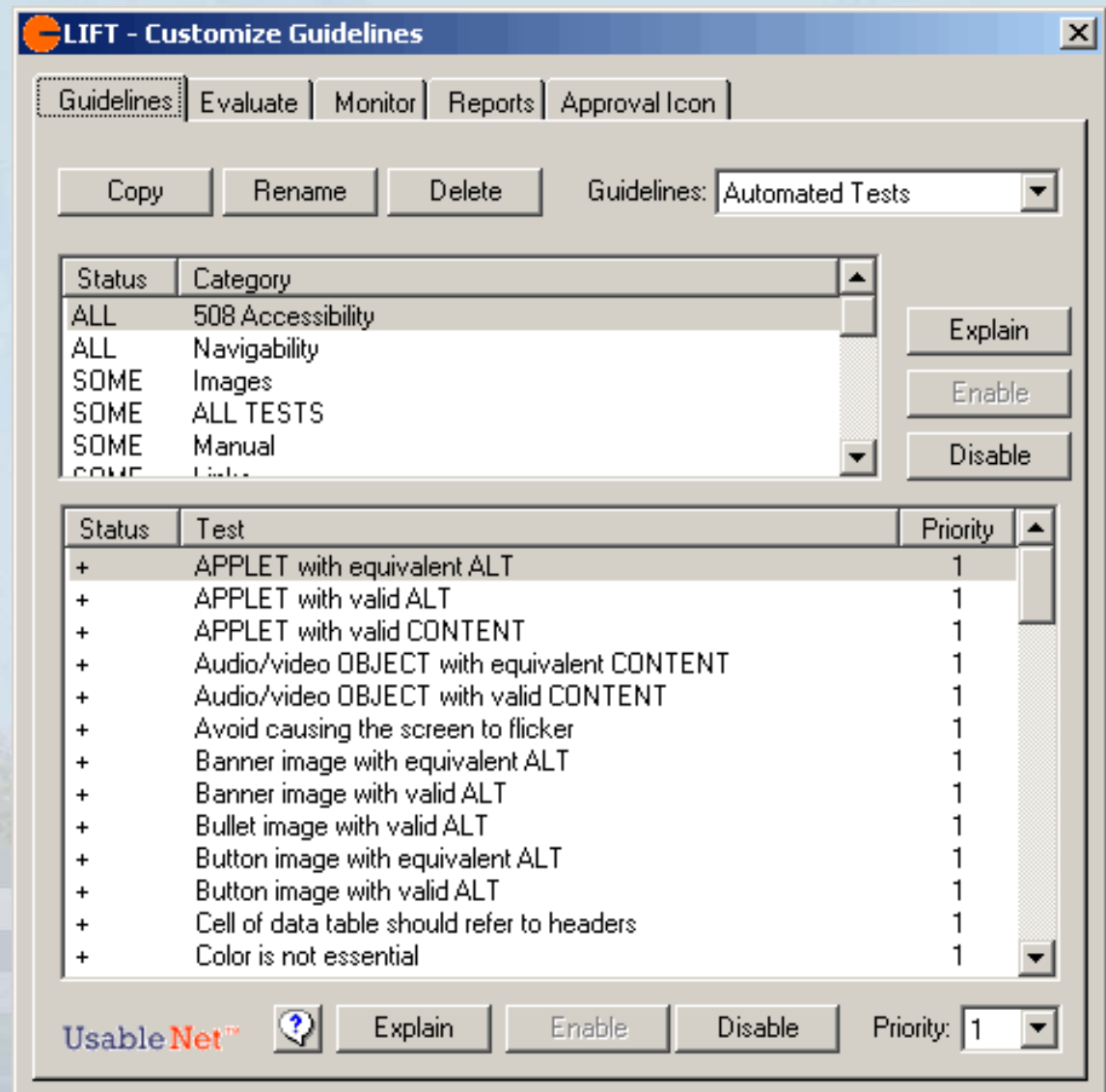
Accessibility Software

- Advantages
 - Free to test pages online
 - Purchase desktop versions of Bobby and Cynthia Says to spider your entire site
 - Download the Wave toolbar
 - Good for quickly evaluating web templates
- Disadvantages
 - Still need detailed knowledge of Priority 1 & 2 checkpoints to fix html code – they highlight, you fix it page by page!



Accessibility Software - Lift Software

- FrontPage add on product
- Customise tests. You can test for just images, Section 508 (US Regulations), or W3C.



Accessibility Software – Lift Software

- Evaluate your entire website or a single page. Prioritise and identify issues

Page(s): Guidelines:

Files	# of Issues
rules/programmatics.html	90
rules/index.htm	63
rules/All_Objects.htm	58
rules/spacers.html	47
rules/tables.html	39
rules/forms.html	34
rules/links.html	32
rules/banners.html	31

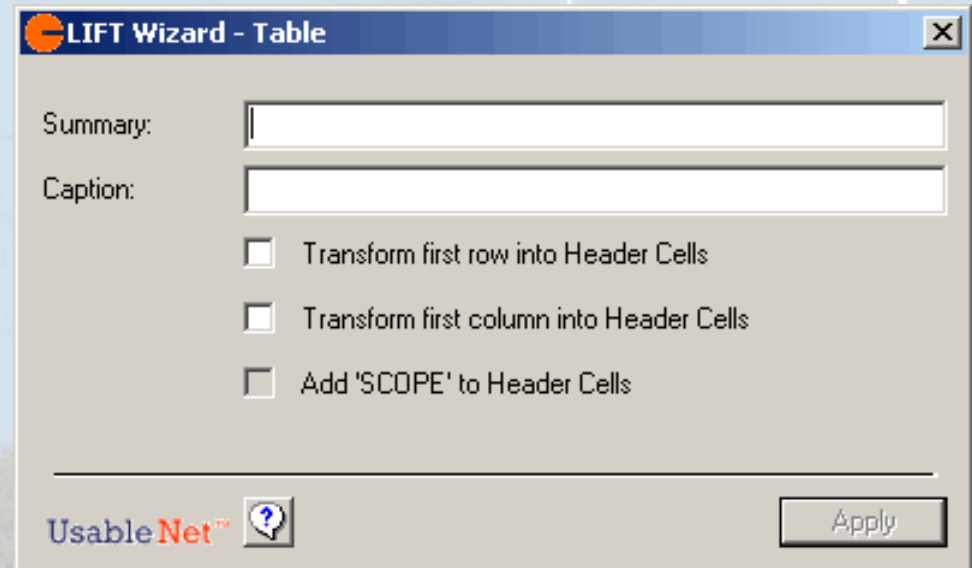
Status	Test	Checkpoint	Priority
X	APPLET with valid ALT	508(a)	1
X	APPLET with valid ALT	508(a)	1
X	APPLET with valid ALT	508(a)	1
X	APPLET with valid CONTENT	508(a)	1
X	APPLET with valid CONTENT	508(a)	1
X	APPLET with valid CONTENT	508(a)	1
X	Audio/video OBJECT with valid CONTENT	508(a)	1
X	Audio/video OBJECT with valid CONTENT	508(a)	1

UsableNet™



Accessibility Software – Lift Software

- Fix Wizard allows you to automate the fixing process to fix images, tables, scripts, data tables, etc.



LIFT Wizard - Table


Summary:

Caption:

Transform first row into Header Cells

Transform first column into Header Cells

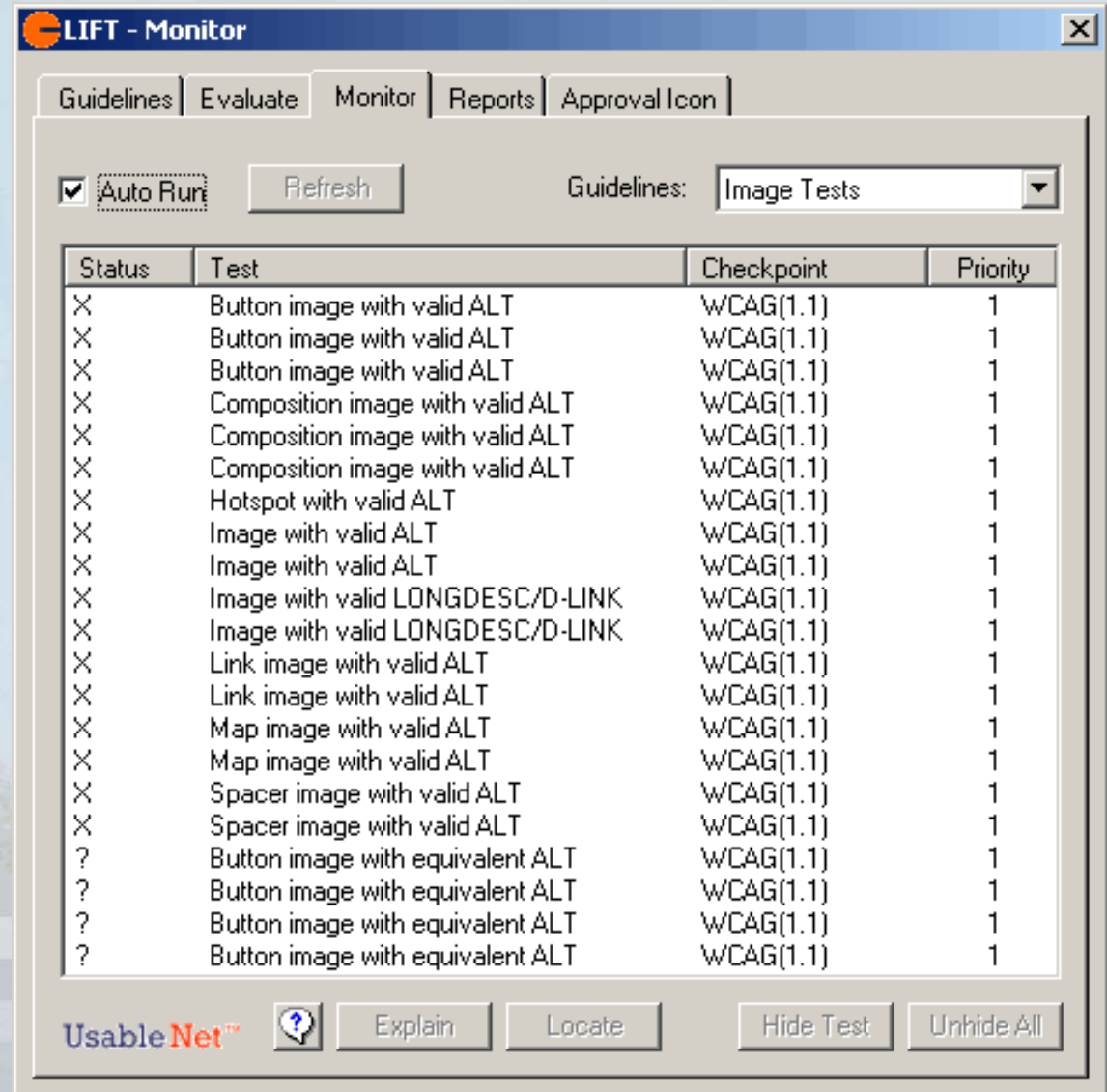
Add 'SCOPE' to Header Cells

UsableNet™ 



Accessibility Software – Lift Software

- Monitor your website



The screenshot shows the LIFT - Monitor application window. It has a menu bar with 'Guidelines', 'Evaluate', 'Monitor', 'Reports', and 'Approval Icon'. Below the menu bar, there is a 'Guidelines' dropdown menu set to 'Image Tests'. A 'Refresh' button is next to it. A 'Auto Run' checkbox is checked. The main area contains a table with the following data:

Status	Test	Checkpoint	Priority
X	Button image with valid ALT	WCAG(1.1)	1
X	Button image with valid ALT	WCAG(1.1)	1
X	Button image with valid ALT	WCAG(1.1)	1
X	Composition image with valid ALT	WCAG(1.1)	1
X	Composition image with valid ALT	WCAG(1.1)	1
X	Composition image with valid ALT	WCAG(1.1)	1
X	Hotspot with valid ALT	WCAG(1.1)	1
X	Image with valid ALT	WCAG(1.1)	1
X	Image with valid ALT	WCAG(1.1)	1
X	Image with valid LONGDESC/D-LINK	WCAG(1.1)	1
X	Image with valid LONGDESC/D-LINK	WCAG(1.1)	1
X	Link image with valid ALT	WCAG(1.1)	1
X	Link image with valid ALT	WCAG(1.1)	1
X	Map image with valid ALT	WCAG(1.1)	1
X	Map image with valid ALT	WCAG(1.1)	1
X	Spacer image with valid ALT	WCAG(1.1)	1
X	Spacer image with valid ALT	WCAG(1.1)	1
?	Button image with equivalent ALT	WCAG(1.1)	1
?	Button image with equivalent ALT	WCAG(1.1)	1
?	Button image with equivalent ALT	WCAG(1.1)	1
?	Button image with equivalent ALT	WCAG(1.1)	1

At the bottom of the window, there is a 'UsableNet' logo, a help icon, and buttons for 'Explain', 'Locate', 'Hide Test', and 'Unhide All'.



Accessibility Software – Lift Software

- Reporting - generate reports to document your work and compliance

The screenshot shows the 'LIFT - Create Reports' window with the following details:

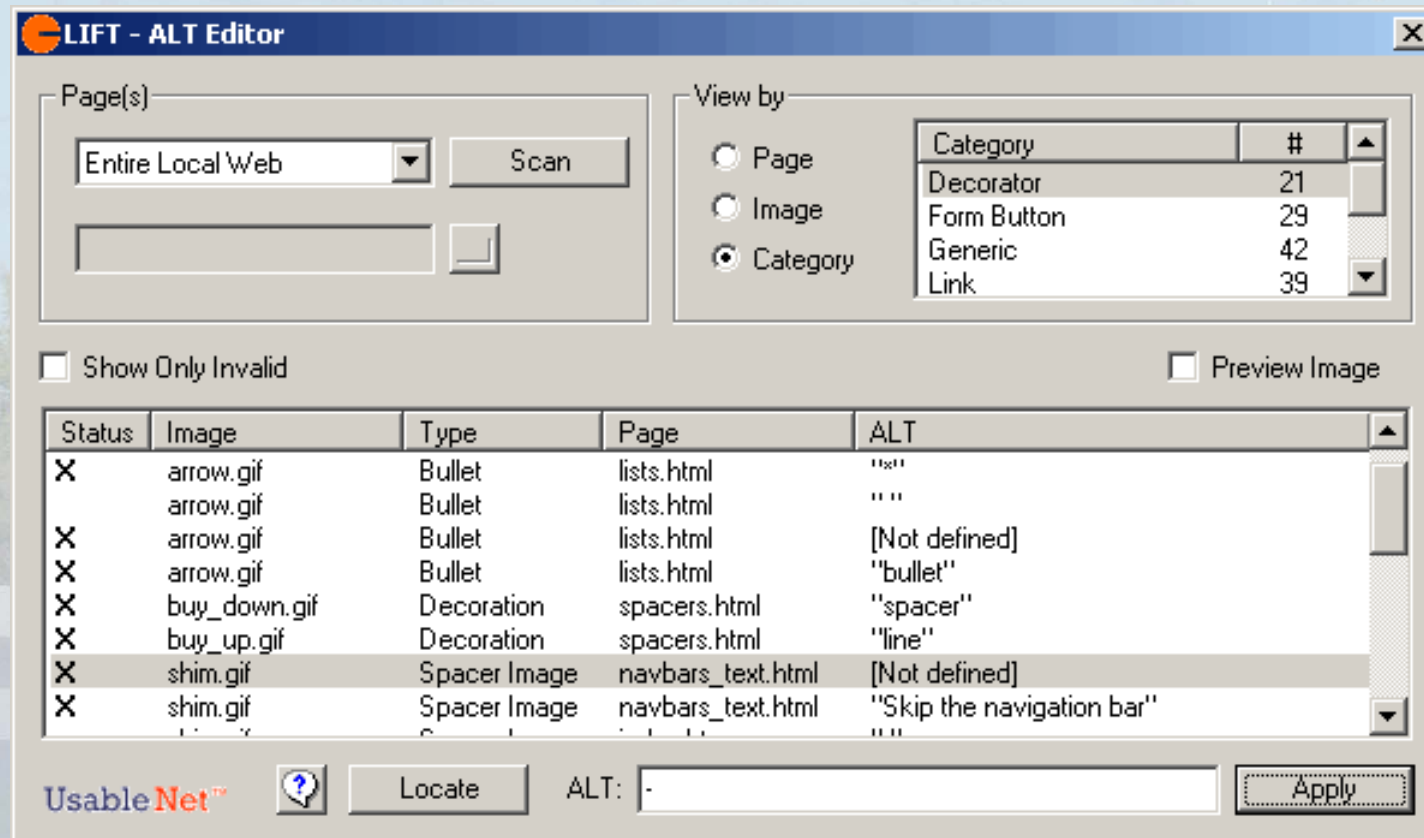
- Navigation:** Guidelines | Evaluate | Monitor | Reports | Approval Icon
- Type:** Executive Summary
- Format:** HTML
- Author:** [Empty text box]
- Date:** Thursday, March 18, 2002 - 09.09
- Site:** [Empty text box]
- Contents:**
 - Accessibility Only
 - Failed Tests
 - Manual Tests
 - Passed Tests
 - Not Applicable Tests
- Notes:**

First report on the test site.
- Footer:** UsableNet™ [Help icon] [Create Report button]



Accessibility Software – Lift Software

- ALT Editor - Manage your images and repair alt tags site wide.



Accessibility Software – Lift Software

- Used on new accessible websites
- We have not taken an old website to fix
- Provided training to Front Page users on their accessible website – maintenance
- Chest Ireland agreement
- Version for Dream Weaver



UL Experience to Date

- New University Policy for external web developers
- System for checking their templates / pages
- Tutorials for FrontPage authors to use the Lift product on new accessible websites

Maintenance

- FrontPage Lift for Department Editors
- What technical skills level do they need
- Will we need to teach them checkpoints and detailed html code
- Who is willing to take on this level of maintenance?
- Is CMS the answer to controlling / solving this?



Questions



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