

**Nokia 9210i Communicator
WWW Browser Style Guide
Version 1.0
12-03-02**

Table of contents

1. INTRODUCTION.....	4
2. ADDITIONAL READING.....	4
3. WWW BROWSER FEATURES.....	4
3.1 FEATURES IN A NUTSHELL.....	4
3.2 MULTIPLE WINDOWS.....	5
4. GUIDELINES FOR DESIGN.....	5
4.1 VALIDATE YOUR HTML.....	5
4.2 WWW SITE ORGANIZATION.....	6
4.2.1 Avoid 'doormat' pages.....	6
4.2.2 Automatically detect the browser.....	6
4.2.3 Optimize for size.....	6
4.2.4 Use frames sparingly.....	7
4.2.5 Choose descriptive page titles and document names.....	7
4.2.6 Pay attention to the first screenful.....	8
4.2.7 Avoid large tables.....	9
4.2.8 Take tabbing order into consideration.....	9
4.2.9 Support the use of a pointer.....	9
4.2.10 Do not use absolute values for the screen size.....	9
4.3 PICTURES, FONTS AND COLOR.....	9
4.3.1 Avoid useless images.....	9
4.3.2 Specify image width/height in HTML.....	10
4.3.3 Imagemaps.....	10
4.3.4 Colormap.....	10
4.4 SERVER CONFIGURATION.....	11
4.4.1 Character sets.....	11
4.4.2 MIME Types.....	11
4.5 SECURE WWW CONNECTIONS.....	13
4.5.1 A note on supported protocols.....	13
4.5.2 Certificates.....	13
5. TROUBLESHOOTING WWW SITES.....	14
5.1 WHAT CAN I DO, WHEN.....	14
5.1.1 An applet or some multimedia/animated content does not show up on the page.....	14
5.1.2 I encounter an out-of-memory error while viewing a page.....	14
5.1.3 I see a HTML page that tells me that I should upgrade my browser, or have a wrong browser.....	14
5.1.4 Secure connections will not succeed.....	14
5.1.5 Some frames are too small.....	15
5.1.6 A page opens in an incorrect frame.....	15
5.1.7 A form submission does not work from a bookmarked page.....	15
5.1.8 Characters in submitted forms display incorrectly.....	15
5.1.9 There is a problem when connecting to the Internet.....	16

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Version 1.0

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1. INTRODUCTION

This document is a style guide for creating World Wide Web services for the Nokia 9210i Communicator. Nokia 9210i Communicator is an advanced communications device with a feature-rich WWW browser. However, the screen size and the wireless communication link should be taken into account when designing services that are both fast and easy to use, and offer the user maximum enjoyment.

In addition to Nokia 9210i Communicator specific issues, many of the instructions in this document can be used to maximize interoperability and ease of use on various other browsers.

Note to the reader: the URLs (WWW addresses) in this document are current as of March 2002.

2. ADDITIONAL READING¹

This document tries to explain the basic principles, which make your WWW site more enjoyable for the users of Nokia 9210i Communicator. If you need further information or guidelines for simple and effective design, we recommend the following books and publications. In addition to the Nokia 9210i Communicator, these guidelines will help you to create WWW sites for other small screen and portable browsers in wireless devices.

- *Designing WWW Usability: The Practice of Simplicity* by Jakob Nielsen, New Riders Publishing, ISBN 1-56205-810-X. Most of the guidelines in this book will offer considerable benefits for mobile users.
- *WWW Content Accessibility Guidelines* from the World Wide WWW Consortium, May 1999, <http://www.w3.org/TR/WAI-WWWCONTENT/>. Even if most of this document is targeted to helping create WWW pages for people with disabilities, many of the principles can be directly applied to the users of small, wireless information devices; particularly guidelines 2, 6, 8, 9, and 11.

3. WWW BROWSER FEATURES

3.1 Features in a nutshell

Nokia 9210i Communicator WWW browser supports²:

- Hypertext Transfer Protocol version 1.1 (HTTP/1.1), as specified in RFC 2068. <ftp://ftp.isi.edu/in-notes/rfc2068.txt>
- Hypertext Markup Language version 4.01 (HTML 4.01), as specified by the W3C in <http://www.w3.org/TR/REC-html32.html>, except some features. The features, which are not supported, can be found from the Opera web site, <http://www.opera.com/docs/>. Also XHTML 1.1, as specified in <http://www.w3.org/TR/xhtml11/>, is supported.

¹ These references do not imply an affiliation between Nokia and the authors or the publishers of these publications. The references are provided only for informational purposes, with the target of helping the content creators to maximize their usability.

² Please note that all non-mandatory features might not be supported.

- HTTP over Secure Sockets Layer protocol version 3 (SSLv3), also known as the https: URL scheme. For details on how to configure your server to provide secure WWW access, please refer to your server documentation.
- JPEG and GIF images, including progressive JPEG and interlaced GIF, plus several other image formats such as PNG (Portable Network Graphics), BMP (Windows Bitmap) and TIFF/F (Fax image file).
- CSS (Cascading Style Sheet). The WWW browser supports all of CSS1 and all of CSS2, except for a few features. The features, which are not supported, can be found from the Opera web site, <http://www.opera.com/docs/>. CSS1 and CSS2 are specifications of the W3C and can be found from <http://www.w3.org/TR/REC-CSS1> and <http://www.w3.org/TR/REC-CSS2/>.
- JavaScript™ 1.3, except for a few features. The features, which are not supported, can be found from the Opera web site, <http://www.opera.com/docs/>. JavaScript™, or ECMAScript, is a scripting language often used to facilitate interactive or dynamic content.
- Java Applet execution is not supported by the WWW browser. It is, however, possible to download Java applications and run them independently of the WWW browser. Please see the *Nokia 9210 Communicator Java white paper* for more information on the Java support.
- Native support for mailto: URL (<ftp://ftp.isi.edu/in-notes/rfc2368.txt>), sms:, and fax: URLs (<ftp://ftp.isi.edu/in-notes/rfc2806.txt>), if the accompanying software has been installed. Possibility to add 3rd party URL handlers with add-on software.
- Possibility to launch other programs based on the incoming MIME type of data, and a way to store downloaded data into a local file. Other programs can register themselves to handle these MIME types.

3.2 Multiple windows

The WWW browser enables you to have two windows available at once. This is because many WWW sites, including banking sites, require an extra window to function correctly. The fact that two windows are available is implicit rather than explicit, however. For example, there is no Windows menu or no New window command in the File menu. This is because the use of two windows uses more memory.

When two windows are open, the third CBA button is changed from Bookmarks to Switch window, which brings the other window to the front. The last CBA button is changed from Close to Close window. When the second window is closed, it resumes closing the application.

When the maximum number of windows is already open and the opening of an additional window is attempted, a note with the text "Maximum windows reached" is displayed.

4. GUIDELINES FOR DESIGN

4.1 Validate your HTML

There are several HTML validators available that validate your documents against HTML Document Type Definition (DTD). It is recommended that authors validate their WWW pages, because valid HTML is always less prone to incompatibilities and errors than pages that contain erroneous HTML. This holds true for any browser.

At the time of this writing, the World Wide Web Consortium operates an HTML validator at <http://validator.w3.org/>.

4.2 WWW Site Organization

4.2.1 Avoid 'doormat' pages

The user is accessing your WWW site over a GSM data call, and pays per second. It is not recommended that you start your site using a 'doormat' or an 'intro' page, which has no functionality other than perhaps greeting the visitor and displaying a logo. It is better to go to your service directly.

4.2.2 Automatically detect the browser

Users do not generally want to select which browser they are using. They especially don't want to be told that their browser is not supported, and that they should upgrade. If you are using a modern WWW site-hosting environment, it is usually possible to detect the browser and supply correct content transparently, without user interaction. This depends on the capabilities of your WWW-hosting environment – refer to your server documentation.

Nokia 9210i Communicator WWW browser identifies itself as "Mozilla/4.1 (compatible; MSIE 5.0; EPOC) Opera 6.0 [en] Nokia/Series9200" in HTTP user agent header.

4.2.3 Optimize for size

The size of the content is critical. If you have large documents (listings, large tables etc.), consider splitting them in multiple parts for faster download. Large comment sections within HTML should be avoided.

As for the total download time, some studies place an upper limit for acceptable delay to 10 to 15 seconds, including all images, on a PC-based browser. Even if the users are accustomed to the somewhat slower transmission speeds of GSM data, this could be used as a rough guideline when judging the usability of a WWW page.

The following table shows the transmission speeds that can be expected over HTTP in optimal conditions and good cellular coverage. The values given include the HTTP request and should be taken as approximations, and depend on the GSM network, Internet service provider configuration and equipment, other Internet Protocol traffic, server and client load, compression, encryption, and other factors. Note that the High-Speed transfer modes are generally more expensive than normal GSM data, and are perhaps used only when downloading large amounts of data in a continuous stream.

For more information on data transfer and the supported High-Speed data calls, please refer to *Setting Up Dial-In Service* documentation, available from Forum Nokia.

	10 kB HTML document	10 kB JPEG image ³	100 kB JPEG image
Normal GSM data, 9600 bps, analog modem pool	12 seconds	14 seconds	98 seconds
Two High-Speed slots, 14400 bps each, ISDN connection	6 seconds	8 seconds	39 seconds
Three High-Speed slots, 14400 bps each, ISDN connection	5 seconds	7 seconds	27 seconds

4.2.4 Use frames sparingly

As the screen is relatively small, frames quickly eat up the screen estate. Frames also make it more difficult for the user to navigate on or bookmark the page. Users may also opt not to view frames the way they are usually viewed, because the Nokia 9210i Communicator supports three different frame styles (Show all frames/Show frames one by one/Do not use frames). The WWW site designer cannot know how the frames are shown, so it is unwise to use them for page layout.

However, if you choose to use frames, please do give descriptive names for them and do not use them solely for the purposes of page layout. If possible, provide a way to access the page without frames. If you are linking to another page, avoid the situation where a new set of frames is loaded inside a frame as then the usability quickly deteriorates on a small display.

When frames are visible, it is possible to adjust the frame borders, by using the pointer. When the cursor is over the border and [Enter] is held down, arrows will be drawn around the border to ease positioning.

Also, give preference to frames that split the screen horizontally (to several columns) instead of frames that divide it vertically (to several lines). This is because the horizontal resolution of the screen is much bigger than the vertical resolution.

4.2.5 Choose descriptive page titles and document names

Page titles have much more visual impact on Nokia 9210i Communicator than on a PC-based browser. It is very useful to give a descriptive name for the page. It might be a good idea to start the title with your service's name and keep the total length of the title short.

³ The difference between 10 kB HTML and JPEG files is the result of compression. JPEG files and encrypted content cannot be compressed at lower protocol layers, resulting a slightly longer transmission time.

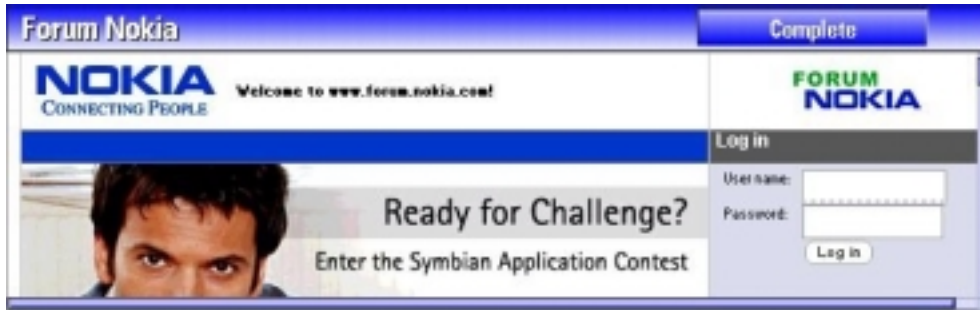


Figure 1: The page title visible in full screen mode. When wanted, the title can be set Off in the WWW browser settings.

It is very common for a user of a PDA-type device to bookmark a page in order to return directly to it later. WWW hosting systems that generate ephemeral URLs (URLs that are valid only within the same browsing session and cannot be bookmarked) effectively foil this usage scenario. The best results are obtained if all subpages on the site can be bookmarked, and when the page is created dynamically from form data, an erroneous URL will redirect the user to a sensible page (and not only show a server error).

4.2.6 Pay attention to the first screenful

Nokia 9210i Communicator's screen size depends on user settings as follows:

	Horizontal viewable area	Vertical viewable area
Default	498 pixels ⁴	167 pixels
No title bar	498 pixels	198 pixels
Full screen mode	630 pixels	167 pixels
Full screen mode and no title bar	630 pixels	198 pixels

Note: In these values, the vertical scroll bar is visible. If that is not visible, then the horizontal viewable area is 8 pixels wider.

Note: In these values, the horizontal scroll bar is invisible. If that is visible, then the vertical viewable area is 8 pixels narrower.

The number of text lines depends on a user-selectable zoom level. There are four zoom levels available.

	Zoom level 1	Zoom level 2	Zoom level 3	Zoom level 4
Font size 10 (default)	15 lines of normal text	11 lines of normal text	9 lines of normal text	7 lines of normal text

⁴ This value may be some smaller/bigger than 498 pixels, depending on the length of command names in the command button area. The size of the command button area depends on the device language.

Because the Nokia 9210i Communicator default rendering area is 498 x 167 pixels, the first (topmost) screenful of any page is the most important one. All of the commonly used navigational links, search fields, login screens, and bulk of the information should reside there if at all possible (the topmost ten lines or 167 pixels of the page). The user is then able to navigate forward before the rest of the page has been loaded, and the user does not have to scroll the page.

Avoid wasting the top of the page for banner advertisements or non-informative graphics. It is better to place the advertisements at the right edge than on the top. When using tables, the left edge should be reserved for the most important links, as the user will be able to navigate there quickly with the tabulator key.

4.2.7 Avoid large tables

Rendering an HTML table requires the whole table to be downloaded before it can be viewed on screen, as the browser needs to know the dimensions of the table. If the whole page is inside a table, all of the HTML code has to be downloaded before the page can be viewed. On a large page, this may cause a considerable pause before the user can read the page. If possible, split the page into several, smaller tables.

4.2.8 Take tabbing order into consideration

The user usually “tabs” through the page using the tab and shift+tab keys. This will highlight each image and link, one at a time, in the order that they appear in the HTML source.

Try to group all of the most important links so that they are the first ones in the HTML source, so that the user does not have to “tab” through the whole page.

The same design principle applies to frames. If it is really necessary to use frames, always try to make the first frame the one that the user is most likely to access first. Otherwise the user needs to change the active frame before being able to select links.

4.2.9 Support the use of a pointer

Nokia 9210i Communicator has a pointer, which looks like a mouse pointer but which can be moved with the cursor keys (in eight directions). It is a very good practice to test all of the clickable content on your page to make sure that they are large enough to facilitate easy navigation with the pointer. As a rule of thumb, items less than ten pixels in width or height are difficult to select using the pointer.

4.2.10 Do not use absolute values for the screen size

When using tables or frames, the use of absolute values (in pixels) is not recommended. Sizes should be specified as percentages from the total width or height.

More specifically, do not expect that the user have a 640-pixel (or any other) horizontal resolution.

4.3 Pictures, fonts and color

4.3.1 Avoid useless images

Downloading of images takes time, and many users may switch the loading of images off for more speed. Try to optimize the size of images. Use JPEG with a high compression ratio for

photographic images, and PNG or GIF for images that require lossless compression, or use uniform fills or fewer colors. If you have large pictures on your site, consider using thumbnails for the image index. The use of interlaced or progressive images is encouraged as the user can get an overview of the image quicker.

Always give an alternative text (using the ALT attribute of the IMG element) for images that convey information. Always use a null alternative text (ALT="") for images that do not convey information, or are used for page layout or decorative purposes only.

A number of small, transparent images that are often used for page layout are discouraged because each image on the page causes a new HTTP request. If running over a 9600 bps data call, this may slow down page loading.

4.3.2 Specify image width/height in HTML

Always specify the correct image width and height in IMG elements. This speeds up the layout process as the layout engine can reserve the right amount of space on the screen even before downloading the image, and avoids unnecessary screen refreshes.

4.3.3 Imagemaps

Imagemaps are not the best alternative when navigating with a keyboard. Split images with appropriate ALT attributes are preferable. If you have to use imagemaps, try to use client-side imagemaps with descriptive names for the clickable areas via the ALT attribute. Also, provide textual links for all of the imagemap links in case that the user does not wish to download the image.

4.3.4 Colormap

The Nokia 9210i Communicator supports 4096 colors. The full "true color" is specified by 24 bits, 8 bits for each color component (red, green and blue). The Nokia 9210i Communicator is using the most significant 4 bits of each of the color component, resulting in a color depth of 12 bits. All other colors will either be dithered or mapped to the closest color available, depending on the application. In other words, this means that the Nokia 9210i Communicator supports every 16th color of the 24-bit colormap; for example, in HTML-like notation, #100000, #200000, and #300000 are the three darkest shades of red.

When creating graphics with uniform fills, use only the colors that will not be dithered. Some image processing tools may be able to reduce the size of images if you restrict the number of colors to the exact 4096 colors supported by the Nokia 9210i Communicator.

Do not use colors which are too close to each other (i.e. differ only in the least significant four bits of each color component). This may result in the colors being mapped to the exact same color. For example, again in HTML-like notation, #110000 and #1F0000 map to #100000 (unless the application chooses to dither the color).

If you are using transparent images, be sure to set the background color in the HTML document accordingly. If the transparency relies upon a dark background image, a dark background color should also be specified.

For added accessibility, you may wish to review the images in grayscale (if compatibility with the Nokia 9110 Communicator and other grayscale PDAs is important) and take the requirements of color-blind users into account.

4.4 Server configuration

4.4.1 Character sets

The web server should always supply the correct character set information in the HTTP response headers. This is important for any future browsers that may contain more internationalized features.

The Nokia 9210i Communicator encodes all form submissions as per the HTML 4.01 specification, using a language-specific character set. For Western European and Nordic language versions, the ISO 8859-1 (ISO Latin 1) character set is used. Elsewhere, the character set may change according to the characters available in that specific language version.

If the language version uses characters that are not available in the ISO 8859 standard series, the device may use a Unicode character set with UTF-8 encoding. The server should not just assume that all incoming forms are in ISO 8859-1. Supporting Unicode on server side has the additional benefit of adding another layer of international compatibility to your WWW site.

4.4.2 MIME Types

Some web servers tend to use the generic MIME type 'application/octet-stream' for most downloaded files that are not HTML or text. The Nokia 9210i Communicator, however, uses and stores the MIME type information, so the web server should always be configured to return the correct MIME type for a given file. Please see IANA's WWW site for a listing of MIME types at <http://www.isi.edu/in-notes/iana/assignments/media-types/>. If, however, the generic MIME type is used, the Nokia 9210i Communicator tries to guess the file format from the file suffix and its contents.

The Nokia 9210i Communicator supports a number of MIME types, either in its WWW browser, or through a separate application. This table lists the file types that can be viewed⁵ with the software that comes either factory installed or on the companion CD-ROM. For some of the MIME types, there may be more than one application that can view the file, and these applications may use different MIME types as some of the MIME types are not standard. To maximize interoperability, when configuring your server, use the first MIME type listed for any given file type. It also helps to use one of the listed file suffixes for the file.

Of course, you should take into account the size of the file. Especially files containing graphics may be extremely large (megabytes) and downloading them over a wireless connection may prove to be very inconvenient, even if they are supported file types.

In most cases, the files must be saved on the Nokia 9210i Communicator before they can be viewed. Some files open directly in the WWW browser, such as HTML files, plain text files and most picture formats. In addition to these, WAP content types, such as WML files, can be viewed using the WAP application. For most other files, the user needs to install a viewer separately.

⁵ Note: a file might not always be viewed correctly. Some file types may use features and content that cannot be viewed. Different viewers may have also differing capabilities.

MIME type	Description	File suffixes
application/msexcel	Microsoft Excel spreadsheet	.xls, .xlc
application/vnd.ms-excel		
application/x-excel		
application/xlc		
application/x-msexcel		
application/msword	Microsoft Word document	.doc, .wri
application/vnd.msword		
application/vnd.ms-word		
application/rtf	Rich text format	.rtf
application/vnd.lotus-1-2-3	Lotus 1-2-3	.wq1, .wku, .wk1, .wk3, .wk4, .wk5, .wk6, .123
application/x-lotus123		
application/vnd.ms-project	Microsoft Project file	.mpp
application/vnd.nokia.ringing-tone	Nokia ringing tone	.rng
application/vnd.symbian.install	Symbian installation file	.sis
application/vnd.visio	Visio drawing	.vsd
application/wordperfect5	Word Perfect document	.wpd
application/wordperfect5.1		
application/x-wordperfect6		
application/x-gzip	UNIX GNU Zip (gzip)	.tgz
application/gzip		
application/x-mspowerpoint	Microsoft PowerPoint slide show	.ppt, .pot, .pps
application/mspowerpoint		
application/pot		
application/pps		
application/ppt		
application/vnd.ms-powerpoint		
application/x-tar	UNIX Compress/tar	.tar, .taz
application/zip	PkZip archive	.zip, .exe
audio/basic	Sun audio file	.au
audio/x-sibo-wve	Symbian audio file	.wve
audio/x-wav	WAV audio files	.wav
image/cgm	Computer graphics metafile	.cgm
image/gif	GIF image file	.gif
image/jpeg	JPEG JFIF image file	.jpeg, .jpg, .jif
image/png	Portable Network Graphics file	.png
image/tiff	TIFF/F (Fax) image file	.tif
image/tiff	TIFF image file	.tif
image/wmf	Windows metafile	.wmf
image/x-win-metafile		
image/x-wmf		
image/x-amidraw	Lotus AMI Draw file	.sdw
image/x-bmp	Windows bitmap	.bmp, .rle, .ico, .cur
image/bmp		
image/x-MS-bmp		
image/x-win-bitmap		
image/x-cgm	Computer graphics metafile	.cgm
image/x-pc-paintbrush	Paintbrush image file	.pcx, .dcx
image/x-png	Portable Network Graphics	.png

image/x-presentations	file	
image/x-wordperfect-graphics	Corel/Novell Presentations	.shw
None specified	Word Perfect document	.wpg
None specified	Nokia OTA image file	.ota
None specified	Symbian Sheet document	None specified
text/html	Symbian Word document	None specified
	HTML hypertext file	.html, .htm, .shtml, .shtm
text/plain	Text file	.txt
text/rtf	Rich text format	.rtf
text/vnd.symbian.ebookmark	Symbian WWW bookmark file	.ebm
text/x-vcalendar	VCalendar	.vcs
text/x-vcard	VCard	.vcf

4.5 Secure WWW connections

4.5.1 A note on supported protocols

Nokia 9210i Communicator's WWW browser supports the SSLv3 (Secure Sockets Layer version 3) protocol.

When the connection is secure, the user sees a lock icon in the title bar and can see the 'encrypted' status in the menu (Tools | Information | Status).



Figure 2: The lock icon is visible for pages retrieved over SSL (https://)

4.5.2 Certificates

In order to authenticate your server to the WWW browser, you need a certificate from a certification authority (CA). *Nokia does not endorse any specific CA.* The authenticity of your server's certificate is checked against a so-called root certificate, which is installed in the Certificate manager application (in the Control Panel of Nokia 9210i Communicator). Root certificates from the most popular commercial CAs are factory-installed in Nokia 9210i Communicator. Users can install new root certificates themselves, if required.

It is important to make sure that the server's name (such as www.nokia.com) is present in the 'common name' element of the certificate. Otherwise the WWW browser will display a warning message about the name not matching the WWW site's name.

When installing a new root certificate to Nokia 9210i Communicator, it must be in raw DER encoded form (not base64 encoded). The certificate has to be downloaded to the device, and opened from the Certificate manager tool. After that, the user needs to set the trust settings appropriately.

At the moment, client certificates (for authenticating the WWW browser) are not supported. If a server requires client authentication using certificates, a null certificate is automatically sent.

5. TROUBLESHOOTING WWW SITES

5.1 What can I do, when...

5.1.1 An applet or some multimedia/animated content does not show up on the page

The WWW browser does not support Java applets. For all other content types except HTML and still images, you need a plug-in that is capable of showing the content in the WWW browser.

An increasing number of third party software is available for the Symbian OS that you can use for viewing different content types.

5.1.2 I encounter an out-of-memory error while viewing a page

Rendering WWW pages takes a lot of memory (RAM). A small device such as a communicator does not always have very much memory available. The following points help to reduce the memory needed to render a page:

- Use normal JPEG images instead of progressive JPEG images.
- Reduce the x/y size of images. (Reducing the file size of images by using a more lossy compression does not necessarily help, although it speeds up the loading of the page.)
- Reduce the number of tables, and the number of cells within tables. Reduce the number of tables inside tables.
- Reduce the number of images on the page.
- Split the content between several pages, if possible.
- Do not use frames.

5.1.3 I see a HTML page that tells me that I should upgrade my browser, or have a wrong browser

This is usually caused by the WWW site checking for the HTTP User-Agent header and making decisions based on it. WWW users have traditionally been using two major flavors of WWW browsers, and many sites still have a start page that filters out the users of all other browsers. This can be fixed by either removing this check altogether or adding support for the Nokia 9210i Communicator WWW browser.

5.1.4 Secure connections will not succeed

If you see a HTML page that tells you that secure connections are not possible, the most likely reason is that the site checks the User-Agent header and does not even start secure connection handshake because it does not recognize the Nokia 9210i Communicator WWW browser. The Nokia 9210i Communicator should be added to the list of accepted WWW browsers.

If you get an error note from the WWW browser, which says that a secure connection could not be established, the most common reasons are:

- The site only supports SSL version 2, which is a very old version of the SSL security protocol. An upgrade to SSL version 3 capable server is required.

- The site supports SSL, but is configured to do SGC (Server Gated Cryptography, also called ramp-up cryptography) negotiation. This is a way in which some U.S.-origin browsers operated in the past. If the site presented a certain type of certificate, the SSL connection was re-established with a stronger suite of cryptographic algorithms. The reason for this was to allow certain sites, such as financial institutions, to use strong cryptography, and at the same time restrict all other sites to weak cryptography. The Nokia 9210i Communicator natively supports strong cryptography, and has no need or support for SGC. The site should be upgraded to use strong algorithms in all connections.
- The site requires a client certificate. This is very rare, but may be a case on some mail servers. The Nokia 9210i Communicator does not support client certificates. The server should be configured not to require a client-side certificate.

5.1.5 Some frames are too small

Some sites use frames that are using a fixed width or height. When rendered on a small screen, these frames eat up the screen and leave only a small portion of the screen for the rest of the frames. The optimum solution is not to use frames at all, but if that is not an option, the frames should be allowed to be dynamically resized. Also, for clarity, there should not be too many parallel frames or frames inside frames.

As a user, you may opt to use another frame display mode, for example, a single frame with a list of frames, or you can open the currently selected frame as a new page (effectively discarding all other frames).

5.1.6 A page opens in an incorrect frame

The WWW browser does not support target frames. A redesign without frames will cure this (and many other) problems, also on other small-screen devices.

5.1.7 A form submission does not work from a bookmarked page

Due to cache organization, forms that use the POST method may encounter problems when submitted when the browser is offline. This can be fixed by using the GET method.

5.1.8 Characters in submitted forms display incorrectly

The Nokia 9210i Communicator uses a 16-bit Unicode character set, whereas most form submissions are made using an 8-bit character set of the ISO 8859 family. Unicode is not used in form submissions by default because of interoperability problems with most web services. This results in some of the characters not being sent correctly to the web server. As an example, the Euro sign (€) is not included in ISO 8859-1, which is used when sending forms from an English language communicator, and cannot therefore be included in a form submission.

What the service operator can do is to suggest that users use certain other characters in the place of missing ones (for example, the ¤ character instead of €). As a move towards an international WWW, the service should also support Unicode (most notably the UTF-8 encoding) so that future versions of WWW browsers can use Unicode to get rid of character set problems completely.

5.1.9 There is a problem when connecting to the Internet

Internet connection troubleshooting is described in the user manual of the Nokia 9210i Communicator and in the help documents on the companion CD-ROM.