

**SECTION 508 COMPLIANCE REVIEW  
STANDARD 1194.22**

**Web-Based Intranet and Internet Information and  
Applications**

**Adverse Drug Reactions Prototype  
for GSA 18F**

## Revision Log

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All revisions of this document are listed in chronological order.

<b>Document Revision</b>	<b>Date</b>	<b>Section 508 Compliance Review Revision Changes</b>
1.0	2015/07/03	Full 508 compliance report

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## Summary

“Adverse Drug Reactions” was tested for compliance with Section 508 of the Rehabilitation Act of 1973, as amended, specifically, the Access Board’s Technical Standard §1194.22 for Web-based Intranet and Internet Information and Applications. The web application/site was accessed at the URL specified, and testing was performed using the tools noted below.<sup>1</sup>

## Methodology

1. Run 508 compliance tools over the website and create inventory of issues.
2. Catalog issues in code and content issues.
3. Fix code issues.
4. Fix content issues related to the website’s template.
5. Share other content issues with the team in charge of the content and recommend solutions.
6. Use a page reader to read representative pages of the website and document possible improvements for readability.
7. Perform adjustments based on page reader testing.

## Tools

For HTML/CSS/Accessibility verification:

Total Validator Pro: <http://www.totalvalidator.com/downloads/protol.html>

Total Validator gives you specific details about 508 compliance issues, and also about HTML, CSS, spelling and broken links.

We also use WAVE toolbar: <https://wave.webaim.org/toolbar/>

Manual 508 compliance assessment with a page reader:

JAWS 15: <http://www.freedomscientific.com/downloads/jaws/jaws-downloads.asp>

Utilized to experience what a visually impaired does when using a page reader on the site and verify if the content is meaningful.

For color contrast verification:

Colour Contrast Analyser: <http://www.paciellogroup.com/resources/contrastAnalyser>

It allows you to compare the level of contrast between text and background, over anything you have in your screen (browser, JPEG, etc). The results you'll get with that tool are based on the WCAG 2.0 standard (<http://www.w3.org/TR/WCAG20/>).

<b>Overall Result:</b>	<b>Compliant</b> <input checked="" type="checkbox"/>	<b>Noncompliant</b> <input type="checkbox"/>
URL: <a href="http://visualfda.herokuapp.com/">http://visualfda.herokuapp.com/</a>		

<sup>1</sup>This was not an exhaustive, all-inclusive review of the application, and there may be noncompliant elements or conflicts that are not noted.

## Analysis

**Standard 1194.22 (a) Non-text Elements (Images/Graphics/Audio)**

Standard	Compliant	Noncompliant
(a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).	<ul style="list-style-type: none"> <li>• Every image, Java applet, Flash file, video file, audio file, plug-in, etc. has an alternate description, transcript, or other textual equivalent.</li> <li>• Complex graphics (graphs, charts, etc.) are accompanied by detailed text descriptions.</li> <li>• The alternate descriptions succinctly describe the <i>purpose</i> of the objects, without being too verbose (for simple objects) or too vague (for complex objects).</li> <li>• <i>Alt</i> descriptions for images used as links are descriptive of the link destination.</li> <li>• Decorative graphics with no other function have <u>empty alt</u> descriptions (alt= ""), but they never have <u>missing alt</u> descriptions.</li> </ul>	<ul style="list-style-type: none"> <li>• A non-text element has no alternate textual equivalent.</li> <li>• Complex graphics have no alternative text, or the alternative does not fully convey the meaning of the graphic.</li> <li>• <i>Alt</i> descriptions are verbose, vague, misleading, inaccurate or redundant to the context (e.g. the alt text is the same as the text immediately preceding or following it in the document).</li> <li>• <i>Alt</i> descriptions for images used as links are not descriptive of the link destination.</li> <li>• Decorative or formatting graphics have <i>alt</i> descriptions that say "spacer", "decorative," or other unnecessary wording</li> </ul>
<b>Compliant:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>		
<b>Comments:</b> Web application doesn't contain graphics or icons, all content is in text format. Bar charts display values in text format as well and it's readable by page readers.		
<b>Instances:</b> <a href="http://visualfda.herokuapp.com/#/aspirin">http://visualfda.herokuapp.com/#/aspirin</a>		

**Standard 1194.22 (b) Multimedia**

Standard	Compliant	Noncompliant
(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.	<ul style="list-style-type: none"> <li>• Multimedia files have <u>synchronized</u> captions.</li> </ul>	<ul style="list-style-type: none"> <li>• Multimedia files do not have captions, or captions which are not synchronized</li> </ul>
<b>Compliant:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
<b>Comments:</b> This application doesn't have multimedia content		
<b>Instances:</b>		

**Standard 1194.22 (c) Color**

Standard	Compliant	Noncompliant
(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.	<ul style="list-style-type: none"> <li>If color is used to convey important information, an alternative indicator is used, such as an asterisk (*) or other symbol.</li> <li>Contrast is good.</li> </ul>	<ul style="list-style-type: none"> <li>The use of a color monitor is required.</li> <li>Contrast is poor.</li> </ul>
<b>Compliant:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>		
<b>Comments:</b> Level of contrast was checked and it's compliant with WCAG 2.0 (AA)		
<b>Instances:</b> <a href="http://visualfda.herokuapp.com/">http://visualfda.herokuapp.com/</a> , <a href="http://visualfda.herokuapp.com/#/aspirin">http://visualfda.herokuapp.com/#/aspirin</a>		

**Standard 1194.22 (d) Readability**

Standard	Compliant	Noncompliant
(d) Documents shall be organized so they are readable without requiring an associated style sheet.	<ul style="list-style-type: none"> <li>Style sheets may be used for color, indentation and other presentation effects, but the document is still understandable (even if less visually appealing) when the style sheet is turned off.</li> <li>Non-HTML web documents (i.e. .pdf, .doc, etc.) are presented in an organized readable format.</li> </ul>	<ul style="list-style-type: none"> <li>The document is confusing or information is missing when the style sheet is turned off.</li> <li>Non-HTML web documents are not presented in an organized readable format.</li> </ul>
<b>Compliant:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>		
<b>Comments:</b> Information is organized properly and it's readable in the proper order.		
<b>Instances:</b> <a href="http://visualfda.herokuapp.com/">http://visualfda.herokuapp.com/</a> , <a href="http://visualfda.herokuapp.com/#/aspirin">http://visualfda.herokuapp.com/#/aspirin</a>		

**Standard 1194.22 (e) Server-side Image Maps**

Standard	Compliant	Noncompliant
(e) Redundant text links shall be provided for each active region of a server-side image map.	<ul style="list-style-type: none"> <li>Separate text links are provided outside of the server-side image map to access the same content that the image map hot spots access.</li> </ul>	<ul style="list-style-type: none"> <li>The only way to access the links of a server-side image map is through the image map hot spots, which usually means that a mouse is required and that the links are unavailable to assistive technologies.</li> </ul>
<b>Compliant:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
<b>Comments:</b> This application doesn't contain server-side image maps		
<b>Instances:</b>		

**Standard 1194.22 (f) Client-side Image Maps**

Standard	Compliant	Noncompliant
(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.	<ul style="list-style-type: none"> <li>Standard HTML client-side image maps are used, and appropriate alt text is provided for the image as well as the hot spots</li> </ul>	<ul style="list-style-type: none"> <li>Server-side image maps are used when a client-side image map would suffice.</li> </ul>
<b>Compliant:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
<b>Comments:</b> This application doesn't have client-side image maps		
<b>Instances:</b>		

**Standard 1194.22 (g) Simple Data Tables**

Standard	Compliant	Noncompliant
(g) Row and column headers shall be identified for data tables.*  * This standard does not apply to tables used solely for formatting purposes. Although no standard requires it, a summary attribute should be added to <table> tags to provide a brief description of the table and an empty summary attribute (summary="") should be used to indicate all formatting tables.	<ul style="list-style-type: none"> <li>Data tables have the column and row headers appropriately identified (using the &lt;th&gt; tag)</li> <li>Tables used strictly for <u>layout purposes</u> do NOT have header rows or columns.</li> </ul>	<ul style="list-style-type: none"> <li>Data tables have no header rows or columns.</li> <li>Tables used for layout use the header attribute when there is no true header.</li> </ul>
<b>Compliant:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>		
<b>Comments:</b> This application only contains one table, with the results of the adverse drug reactions, which contain proper headers with defined scope, and it's read properly by page readers		
<b>Instances:</b> <a href="http://visualfda.herokuapp.com/#/aspirin">http://visualfda.herokuapp.com/#/aspirin</a>		

**Standard 1194.22 (h) Complex Data Tables**

Standard	Compliant	Noncompliant
(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.*  * This standard does not apply to tables used solely for formatting purposes. Although no standard requires it, a summary attribute should be added to <table> tags to provide a brief description of the table and an empty summary attribute (summary="") should be used to indicate all formatting tables.	<ul style="list-style-type: none"> <li>Table cells are associated with the appropriate headers (e.g. with the id, headers, scope and/or axis HTML attributes).</li> </ul>	<ul style="list-style-type: none"> <li>Columns and rows are not associated with column and row headers, or they are associated incorrectly</li> </ul>
<b>Compliant:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>		

**Comments:** This application only contains one table, with the results of the adverse drug reactions, which contain proper headers with defined scope, and it's read properly by page readers

**Instances:** <http://visualfda.herokuapp.com/#/aspirin>

### Standard 1194.22 (i) Frames

Standard	Compliant	Noncompliant
(i) Frames shall be titled with text that facilitates frame identification and navigation.	<ul style="list-style-type: none"> <li>Each frame is given a title that helps the user understand the frame's purpose</li> </ul>	<ul style="list-style-type: none"> <li>Frames have no titles, or titles that are not descriptive of the frame's purpose</li> </ul>
<b>Compliant:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
<b>Comments:</b> This application doesn't contain frames		
<b>Instances:</b>		

### Standard 1194.22 (j) Flicker

Standard	Compliant	Noncompliant
(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.	<ul style="list-style-type: none"> <li>No elements on the page flicker at a rate of 2 to 55 cycles per second, thus reducing the risk of optically-induced seizures.</li> </ul>	<ul style="list-style-type: none"> <li>One or more elements on the page flicker at a rate of 2 to 55 cycles per second, increasing the risk of optically-induced seizures</li> </ul>
<b>Compliant:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
<b>Comments:</b> This application doesn't have elements with those characteristics		
<b>Instances:</b>		

### Standard 1194.22 (k) Text-only Page

Standard	Compliant	Noncompliant
(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.	<ul style="list-style-type: none"> <li>A text-only version is created only when there is no other way to make the content accessible, or when it offers significant advantages over the "main" version for certain disability types.</li> <li>The text-only version is up-to-date with the "main" version.</li> <li>The text-only version provides the functionality equivalent to that of the "main" version.</li> <li>An alternative is provided for components (e.g. plug-ins, scripts) that are not directly accessible.</li> </ul>	<ul style="list-style-type: none"> <li>A text-only version is provided only as an excuse not to make the "main" version fully accessible.</li> <li>The text-only version is not up-to-date with the "main" version.</li> <li>The text-only version is an unequal, lesser version of the "main" version.</li> <li>No alternative is provided for components that are not directly accessible.</li> </ul>
<b>Compliant:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
<b>Comments:</b> All content displayed in this website is in text format		



**Instances:**

### Standard 1194.22 (l) Scripting

Standard	Compliant	Noncompliant
(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.	<ul style="list-style-type: none"> <li>Information within the scripts is text-based, or a text alternative is provided within the script itself, in accordance with (a) in these standards.</li> <li>All scripts (e.g. JavaScript pop-up menus, form elements) are either directly accessible to assistive technologies (keyboard accessibility is a good measure of this), or an alternative method of accessing equivalent functionality is provided (e.g. a standard HTML link).</li> </ul>	<ul style="list-style-type: none"> <li>Scripts include graphics-as-text with no true text alternative.</li> <li>Scripts only work with a mouse, and there is no keyboard-accessible alternative either within or outside of the script.</li> <li>Visible Text is not accessible to assistive technologies</li> </ul>
<b>Compliant:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>		
<b>Comments:</b> This application rely on JS, and a NOSCRIPT message was included in the header to provide directions to enable JS in order to use the tool. On another note, the accessibility of the information provided by those scripts was successfully verified with page readers.		
<b>Instances:</b> <a href="http://visualfda.herokuapp.com/#/aspirin">http://visualfda.herokuapp.com/#/aspirin</a>		

### Standard 1194.22 (m) Applets and Plug-ins

Standard	Compliant	Noncompliant
(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).*  *As it can often be complicated to determine the compliance of this standard, review the guide to this standard provided at <a href="http://www.access-board.gov/sec508/guide/1194.22.htm#(l)">http://www.access-board.gov/sec508/guide/1194.22.htm#(l)</a>	<ul style="list-style-type: none"> <li>A link is provided to a disability-accessible page where the plug-in can be downloaded.</li> <li>All Java applets, scripts and plug-ins (including Acrobat PDF files and PowerPoint files, etc.) and the content within them are accessible to assistive technologies, or else an alternative means of accessing equivalent content is provided.</li> </ul>	<ul style="list-style-type: none"> <li>No link is provided to a page where the plug-in can be downloaded and/or the download page is not disability-accessible.</li> <li>Plug-ins, scripts and other elements are used indiscriminately, without alternatives for those who cannot access them</li> </ul>
<b>Compliant:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
<b>Comments:</b> This application doesn't require applets or plugins to operate		
<b>Instances:</b>		

**Standard 1194.22 (n) Electronic Forms and Form Elements**

Standard	Compliant	Noncompliant
(n) When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.	<ul style="list-style-type: none"> <li>• All form controls have text labels adjacent to them.</li> <li>• Form elements have labels associated with them in the markup (i.e. the <i>id</i> and <i>for</i>, HTML elements).</li> <li>• Dynamic HTML scripting of the form does not interfere with assistive technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Form controls have no labels, or the labels are not adjacent to the controls.</li> <li>• There is no linking of the form element and its label in the HTML.</li> <li>• Dynamic HTML scripting makes parts of the form unavailable to assistive technologies.</li> </ul>
<b>Compliant:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>		
<b>Comments:</b> Search form have text labels and it's accessible by page readers		
<b>Instances:</b> <a href="http://visualfda.herokuapp.com/">http://visualfda.herokuapp.com/</a> , <a href="http://visualfda.herokuapp.com/#/aspirin">http://visualfda.herokuapp.com/#/aspirin</a>		

**Standard 1194.22 (o) Skip Navigation**

Standard	Compliant	Noncompliant
(o) A method shall be provided that permits users to skip repetitive navigation links.	<ul style="list-style-type: none"> <li>• A link is provided to skip over lists of navigational menus or other lengthy lists of links.</li> </ul>	<ul style="list-style-type: none"> <li>• There is no way to skip over lists of links.</li> </ul>
<b>Compliant:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
<b>Comments:</b> Skip navigation link is not applicable because this application doesn't have navigation bar, it's pure content and page readers start reading that content right away.		
<b>Instances:</b> <a href="http://visualfda.herokuapp.com/">http://visualfda.herokuapp.com/</a> , <a href="http://visualfda.herokuapp.com/#/aspirin">http://visualfda.herokuapp.com/#/aspirin</a>		

**Standard 1194.22 (p) Timed Response**

Standard	Compliant	Noncompliant
(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.	<ul style="list-style-type: none"> <li>• The user has control over the timing of content changes.</li> </ul>	<ul style="list-style-type: none"> <li>• The user is required to react quickly, within limited time restraints</li> </ul>
<b>Compliant:</b> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
<b>Comments:</b> Timed response is not required in any functionality of this application		
<b>Instances:</b>		

**Conclusion**

Website is 508 compliant and accessible by page readers.

**Suggested References**

- Section508.gov: <http://www.section508.gov>
- The Access Board: <http://www.access-board.gov>

- Access Board's Guide to the Web Standards: <http://www.access-board.gov/sec508/guide/1194.22.htm>
- ARIA- Accessible Rich Internet Applications: <http://www.w3.org/WAI/intro/aria>