



## What is a PDF?

- PDF stands for **P**ortable **D**ocument **F**ormat
- Non-proprietary Format (can be freely read and distributed)
- Keeps True to Format/Layout of a Print Document
- Cross Platform Compatibility
- PDF is an export format type of document – just as you would get a piece of paper from a printer, you get a PDF from Acrobat

## Structure of a PDF File

- **Visual Layer (Physical Layer)**
  - This is what you would associate as a PDF File – it is the version that would exist if you were to print out the PDF in hard copy
- **Text Layer (Content Layer)**
  - This layer contains the textual information that is associated with the Visual Layer. In an accessible PDF, the reading order of the Content Layer mimics the order implied by the Visual Layout of the document.
- **Tags Layer**
  - The Tags Layer contains the PDF tagging structure (similar to HTML markup for a webpage) that is used by assistive technology
  - Notes indicating what you visually see, Text of visual layer, structural Tags

## What Makes a PDF Accessible?

Accessible PDFs include but are not limited to the following characteristics:

- Start with a well **Structured Source Document** (ex. WORD)
- PDF **is Tagged**
  - Provides the structured, textual representation of the PDF that is presented to assistive technology such as screen readers
- Has a **Logical Reading (Tag) Order**
  - The order in which Tags are displayed is the order in which they will read out loud to a user of assistive technology
- PDF is **Not a Scanned** document
- Has a **Descriptive Filename** that identifies the document or purpose
- Text available **Selectable** (content copying for accessibility allowed)
- Document **Language Specified** and **matches** the main language of the document
- **Decorative Content**
  - Text and objects are set to **Artifact**
- **Headings**
  - Correspond to heading tags
  - Heading levels match the visual outline level
- **Lists**
  - Correspond to list tags
  - Correspond to list item tags
  - <LI> are nested under <L>

- **Descriptive Text** defined for all *Images*
  - Conveys the purpose and/or function of the image or object
  - Descriptive text matches verbatim text within image
- **Data Tables**
  - Table headers are marked at <TH>
  - Identified with <TABLE> tag and not <FIGURE> tag
  - Complex table cell properties are set for header and data cells
- **Hyperlinks** that are descriptive of destination, function or purpose
- **Form Fields**
  - Tooltips match the label of instructions
  - Tab order matches the visual/logical order
- **Color** and Other Sensory Characteristics
  - Text conveys the meaning of color or sensory characteristics
- **Color Contrast**
  - Color contrast ratio is lower than 4.5:1

### Why Make Accessible PDFs?

- Accessibility of tagged PDF files available since 2001
- Most current assistive technologies work with tagged PDFs
- PDF file format is ubiquitous
- No need for duplication of effort
- Security of Accessible PDF files available
- Universal Design
- PDF may be the best format

### Problems with PDF Documents

- PDF files were designed to be printed – Static
- Accessibility not as defined as HTML (HTML allows for flexibility/customization)
- Need special tools to correct accessibility of PDF documents (Adobe Acrobat Pro)
- Retrofitting can be difficult

### Process of Creating Accessible PDFs

- Prepare your documents to create an accessible PDF
- Check your PDF for accessibility
- Correct accessibility problems with Adobe Acrobat Professional
- Review page for accessibility

## Setting up Adobe Acrobat Professional XI

You'll need to locate a few panels and tool bars in order to make PDF files accessible.

### Navigation Panes Panel

Right click on the **Navigation Panes** panel (the dark gray area to the left of your work space) and a **Menu** will open as seen in the figure below:

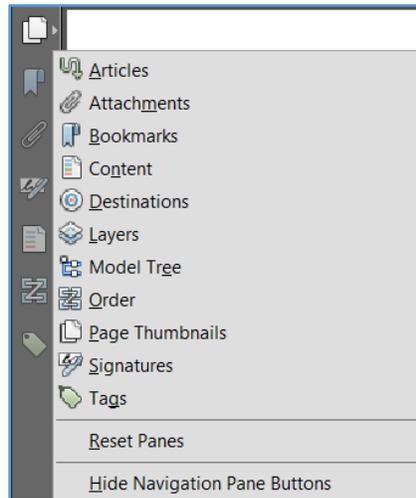


Figure 1 - Navigation Panes Menu

Choose the following, one at a time (it doesn't matter what order) – they will be put in a specified order on the **Navigation Panes** panel:

- Content
- Order
- Tags

Your **Navigation Pane** panel should now look like the figure below.



Figure 2 - Navigation Panes with the new panes added

## Tools Panel

The Accessibility Tools can be found in the Tools panel on the right of Acrobat's main content window.

To view the Accessibility Tool Panel, select the **Options Menu (see below)** in the upper right hand corner and choose **Accessibility** as shown in the image below. You can also choose other tool panels you think you may need.

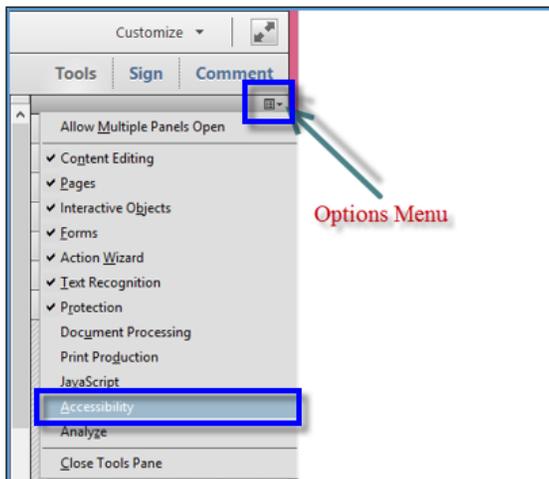


Figure 3 - Tools Panel options menu with Accessibility option selected

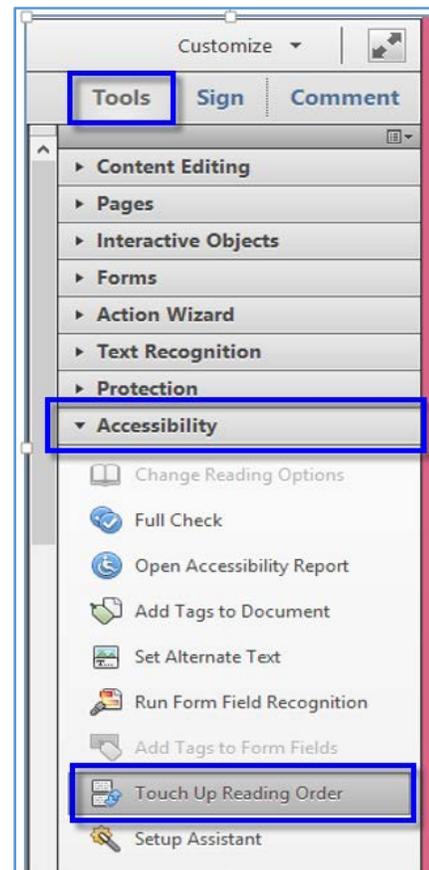


Figure 4 - Accessibility Tools Panel will open with access to a number of accessibility options once the Tools option has been selected.

While not vital, you can also add these tools to your toolbar for quick access. If this is your first time opening Acrobat, or if you've not added **Accessibility Tools** to your **Toolbar**, your **Toolbar** should look like the figure below.

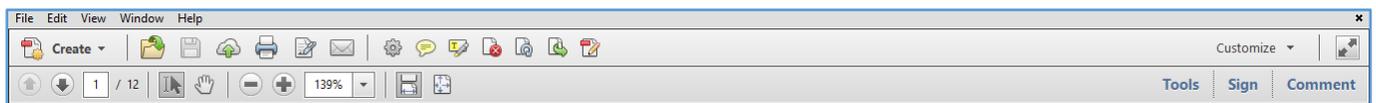


Figure 5 - Adobe Acrobat XI toolbar with the default tools shown

Now you'll want to right-click on the Toolbar and Edit Current Tool Set as shown in the images below:

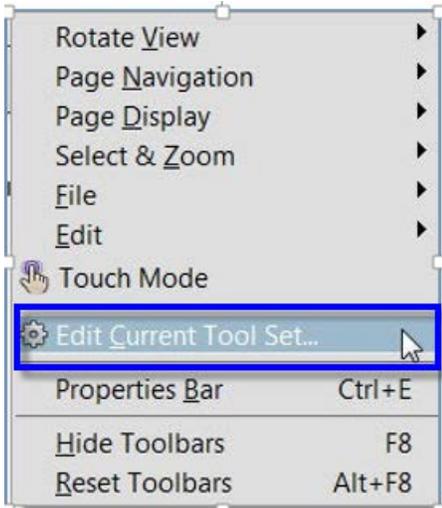


Figure 6 - Toolbar menu with Edit Current Tool Set selected

A dialog box will appear as shown in the images below. Expand the Accessibility Tools by clicking on the triangle in front of Accessibility.

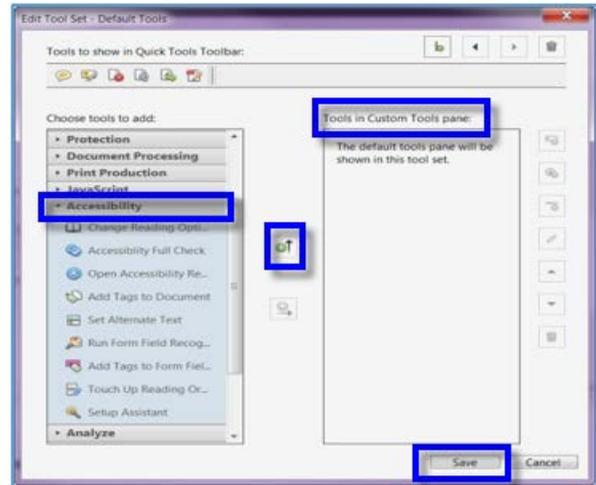


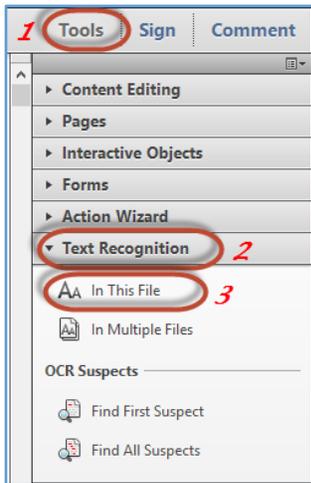
Figure 7 - Edit Tool Set dialog box with the Accessibility Tools expanded

Select the following tools under Accessibility in the Choose Tools to Add pane (there does not seem to be an option to add more than one at a time) and press the <+> sign in the green circle next to the upward pointing arrow. Then choose Save:

- Accessibility Full Check
- Open Accessibility Report
- Add Tags to Document
- Set Alternate Text
- Run Form Field Recognition
- Add Form Fields to Tags
- Touch Up Reading Order

## Creating Accessible Scanned PDFs

Most scanned PDFs are merely images, like a photo of the page. In order to ensure your scanned document is accessible to users of assistive technology, you'll need to perform OCR (Optical Character Recognition) on the document to convert the images of words into actual text on a page.

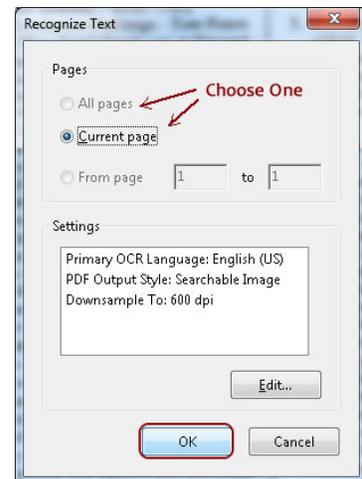


Many times documents are created by scanning – instead of saving in the OCR or text setting – it is just a picture of shapes that resemble a text font.

- Place your cursor in the text area of the document
- Note if your cursor changes
- Try to highlight the text

1. Once you've opened the document in Acrobat, click on Tools, a menu bar located at the top right of the screen, to bring up the toolbar on the right side of the screen.
2. Click on <Text Recognition> to expand the menu.
3. Select <In this File> to bring up the OCR menu box.

1. When the **Recognize Text** box comes up, choose how many pages to OCR at once. If it is a large file, try only a few at first, since it could take a while. Otherwise select the **All Pages** radio button and click **OK**.
2. Once the process finishes running, you should repair any problems found during OCR conversion, and correct structural issues such as lists, tables, links, headings, etc.
3. Ensure to add descriptive tags for non-text elements: graphs, charts, images, add accessible mark-up for tables, and verify the read-order of the document.
4. If the OCR process cannot be performed for some reason, then the other option is to provide alternative text for the document image (as text content within the document) or add text within the alternative text dialog box describing the image.



## Accessibility Checker Full Check

The "Full Check," attempts to validate the existing tags and insure that all content is associated with a tag and that tags include all required information.

## Accessibility Checker Options

The Accessibility Checker (Full Check) has the following options that can be selected:

### Document

- Accessibility permission flag is set
- Document is not image-only PDF
- Document is tagged PDF
- Document structure provides a logical reading order
- Text language is specified
- Document title is showing in title bar
- Bookmarks are present in large documents
- Document has appropriate color contrast

### Page Content

- All page content is tagged
- All annotations are tagged
- Tab order is consistent with structure order
- Reliable character encoding is provided
- All multimedia objects are tagged
- Page will not cause screen to flicker
- No inaccessible scripts
- Navigation links are not repetitive
- Page does not require timed responses

### Forms, Tables and Lists

- All form fields are tagged
- All form fields have description
- TR must be a child of Table, THead, TBody, or TFoot
- TH and TD must be children of TR
- Tables must have headers
- Tables must contain the same number of columns in each row and rows in each column
- Tables must have a summary
- LI must be a child of L
- Lbl and LBody must be children of LI

### Alternate Text and Headings

- Figures require alternate text
- Alternate text that will never be read
- Alternate text must be associated with some content

- Alternate text should not hide annotation
- Elements require alternate text
- Appropriate heading nesting

## Accessibility Checker Panel

Once a report has been run, the issues that have been found are displayed in the Accessibility Checker panel. The results tree displays one of the following states for each rule check:

**Passed:** The item passed this accessible check.

**Passed Manually:** The item was marked passed by manual inspect.

**Skipped By User:** The rule was not selected in the Accessibility Checker Options dialog box.

**Needs Manual Check:** The Full Check feature could not check the item automatically. Verify the item manually.

**Failed:** The item did not pass the accessibility check.

## Accessibility Checker Option Details

| Option                               | Explanation  | How to Fix  |
|--------------------------------------|--|---|
| <b>Accessibility permission flag</b> | A document author can specify that no part of an accessible PDF is to be copied, printed, extracted, commented on, or edited. This setting can interfere with the user of a screen reader's ability to read the documents screen readers must be able to copy or extract the document's text to convert it to speech.<br>This flag reports whether it's necessary to turn on the security settings that allow accessibility. | To fix the rule automatically, select Accessibility Permission Flag on the Accessibility Checker panel. Then, choose Fix from the Options menu.   |
| <b>Image-only PDF</b>                | Reports whether the document contains non-text content that is not accessible. If the document appears to contain text, but doesn't contain fonts, it could be an image-only PDF file.   | To fix this item automatically, select Image-only PDF on the Accessibility Checker panel, and choose Fix from the Options menu. This will open the "Recognize Text - General Settings" dialog and then perform optical character recognition (OCR) on the document. |
| <b>Tagged PDF</b>                    | If this rule check fails, the document is not tagged to specify the correct reading order for reflow and assistive technology. Documents without tags also do not provide information describing the logical structure and relationship of elements to users of assistive technology.  | To fix this item automatically, select Tagged PDF on the Accessibility Checker panel, and then choose Fix from the Options menu. Acrobat automatically adds tags to   |

| Option                       | Explanation   | How to Fix  |
|------------------------------|---|---|
|                              |   | the PDF. The tags that were added still must be reviewed to ensure they are correct.  |
| <b>Logical reading order</b> | Make sure that the reading order displayed in the Tags panel reflects the logical reading order of the document.  | Verify this rule check manually.  |
| <b>Primary language</b>      | Setting the document language in a PDF enables some screen readers to switch to the appropriate language. This check determines whether the primary text language for the PDF is specified. If the check fails, set the language. | To set the language automatically, select Primary Language in the Accessibility Checker tab, and then choose Fix from the Options menu. Choose a language in the Set Reading Language dialog box, and then click OK. This does not set the language for specific parts of the document that may be in different languages. To set specific portions of the document in different languages refer to the Adobe Acrobat XI Pro Accessibility Repair Workflow guide. |
| <b>Title</b>                 | Reports whether there is a document title. Document authors can choose to have the title appear in the Acrobat or Adobe Reader application title bar rather than the document file name.  | To fix the title automatically, select Title in the Accessibility Checker tab, and choose Properties from the Options menu. Enter the document title in the Description dialog box.   |
| <b>Bookmarks</b>             | This check fails when the document has 21 or more pages, but does not have bookmarks that parallel the document structure.  | To add bookmarks to the document, select Bookmarks on the Accessibility Checker panel, and choose Fix from the Options menu. In the Structure Elements dialog box, select the element(s)  |

| Option                    | Explanation   | How to Fix   |
|---------------------------|---|--|
|                           |   | that you want to use as bookmarks, and click OK.   |
| <b>Color contrast</b>     | When this check fails, it's possible that the document contains content that is not accessible to people who have low vision or color deficiencies.   | There must be contrasting colors/shades at a ratio of 4.5:1 for discerning between background and foreground content. Utilize the <a href="#">contrast checking tool</a> to determine if contrast is sufficient.   |
| <b>Tagged content</b>     | This check reports whether all content in the document is tagged. Make sure that all content in the document is either included in the Tags tree, or if decorative marked as an artifact.   | Perform one of the following to fix this check:<br>If the content is purely decorative, set it as an artifact.<br>Use the Touch Up Reading Order tool to tag the content.<br>Use the Tag panel to tag the content.   |
| <b>Tagged annotations</b> | This option checks whether all annotations are tagged. Make sure that annotations such as comments and editorial marks (such as insert and highlight) are either included in the Tags tree if meaningful, or marked as artifacts if they're purely decorative or duplicated in the content. | If the content is purely decorative, set it as an artifact.<br>Use the Tag Panel and the Find command to search for and tag the content as an annotation.<br>To have Acrobat assign tags automatically to annotations as they're created, choose Tag Annotations from the Options menu on the Tags panel. This is the easiest approach to tag annotations that have not already been created, as the annotation tags will appear in the correct location in the reading order of a properly tagged document. |

| Option                    | Explanation   | How to Fix  |
|---------------------------|---|---|
| <b>Tab order</b>          | Because the Tab key is often used to navigate links, annotations, and form fields in a PDF, it's necessary that the tab order parallels the document structure.                 | To fix the tab order automatically, select Tab Order on the Accessibility Checker panel, and choose Fix from the Options menu. This will specify the tab order to follow the document structure.  |
| <b>Character encoding</b> | Specifying the encoding helps PDF viewers present users with readable text. However, some character-encoding issues are not repairable within Acrobat.                          | To ensure proper encoding, do the following:<br>Verify that the necessary fonts are installed on your system.<br>Use a different font (preferably OpenType) in the original document, and then re-create the PDF.<br>Re-create the PDF file with a newer version of Acrobat Distiller.<br>Use the latest Adobe PostScript driver to create the PostScript file, and then re-create the PDF.   |
| <b>Tagged multimedia</b>  | This rule checks whether all multimedia objects are tagged. Make sure that content is either included in the Tags tree or, if decorative or duplicative, marked as an artifact. | Perform one of the following to fix this check:<br>If the content is purely decorative, set it as an artifact.<br>Use the Touch Up Reading Order tool to tag the content.<br>Use the Tag panel to tag the content.<br>In addition to providing tags and description of all multimedia, captions (for people who are deaf or hard of hearing) or audio descriptions (for people who are blind or visually impaired) may need to be synchronized with the |

| Option                  | Explanation   | How to Fix  |
|-------------------------|---|---|
|                         |   | multimedia. Please refer to the relevant guideline or standard for multimedia requirements.   |
| <b>Screen flicker</b>   | Elements that make the screen flicker, such as animations and scripts can cause seizures in individuals who have photosensitive epilepsy. These elements can also cause difficulty for users with low vision and people with cognitive disabilities.  | If the Screen Flicker rule fails, manually remove or modify the script or content that causes screen flicker.   |
| <b>Scripts</b>          | Content cannot be script-dependent unless both content and functionality are accessible with the keyboard and to assistive technologies. Make sure that scripting does not interfere with keyboard navigation or prevent the use of any input device.   | Check the scripts manually. Remove or modify any script or content that compromises accessibility.  |
| <b>Timed responses</b>  | This check applies to documents that contain forms with JavaScript. If the rule check fails, make sure that the page does not require timed responses.  | Edit or remove scripts that impose timely user responses so that users have enough time to read and use the content.  |
| <b>Navigation links</b> | <p>For URLs to be accessible to screen readers, they must be active links that are correctly tagged in the PDF document and keyboard accessible. (The best way to create accessible links is with the Add or Edit Link command, which adds link objects that screen readers require to recognize a link.) Use the Tags panel's Find command to properly tag Links that are not accessible.</p> <p>Link text must also be understandable on its own without surrounding content. If this rule check fails, check navigation links manually and verify that the content does not have links with an identical name but different target locations. Either change the link text or add actual text to the link tag to provide additional description out of context for users of screen readers.</p> <p>Documents must also provide a way for users to skip over items that appear multiple times. For example, if the same links appear on each page of the document, also include a bookmark element to skip past the repetitive link group to the next tagged element in the structure. Links cannot be</p> | <p>To ensure an actionable link is given the proper role:</p> <ul style="list-style-type: none"> <li>• Locate the tag containing the visual link text in the Tags pane.</li> <li>• Highlight the parent tag of the link text.</li> <li>• Press F2 on the keyboard and type &lt;Link&gt;; OR,</li> <li>• Activate the Context menu of the parent tag, select Properties and select Link from the Type combo box in the TouchUp Properties dialog.</li> <li>• Confirm there is a &lt;Link&gt; tag as a parent tag to the link text and Link-OBJR tags.</li> </ul> |

| Option                                    | Explanation  | How to Fix   |
|---|--|--|
|   | used to skip past repetitive links as links cannot focus tags in the tree and only scroll or zoom to a particular page view.   |  |
| <b>Tagged form fields</b>                 | All form fields must be tagged with a form tag and form object element and part of the document structure. In addition, field descriptions (labels) must be provided via the tooltip form field property to provide the user with a label or instructions for a field. | To tag form fields, choose Tools > Accessibility > Add Tags To Form Fields. This add the tags and form object elements to the form fields in the proper location in the Tags panel. This step does not add field descriptions.   |
| <b>Field descriptions</b>                 | All form fields must have a text label/description (this is set via the form field's tooltip property)   | To add a text description to a form field, use the form tools.<br>The tooltip property is only visible via the mouse and not the keyboard, thus, on-screen labels should also be provided for all user input.  |
| <b>Figures alternate text:</b>            | Make sure that images in the document either have alternate text or, if decorative, are marked as artifacts.   | If this check fails, perform one of the following:<br>Select Figures Alternate Text in the Accessibility Checker panel, and choose Fix from the Options menu (or context menu). Add alternate text as prompted in the Set Alternate Text dialog box<br>Use the Tags panel to add alternate text for images in the PDF.<br>Use the Tags panel, Content Panel, or Touch Up Reading Order tool to make the content an artifact. |
| <b>Nested alternate text/actual text:</b> | Screen readers do not read the alternate/actual text for nested elements. Therefore, do not apply alternate text to elements with children unless the alternative text or actual text covers the content for these elements as well. Alternative text is used          | Remove alternate/actual text from nested elements via the Tags panel.  |

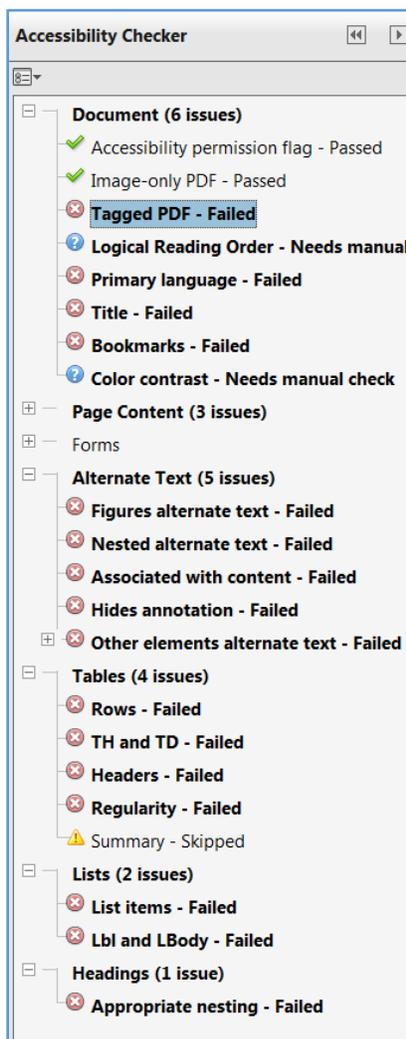
| Option                               | Explanation   | How to Fix   |
|--------------------------------------|---|--|
|                                      | to provide an alternative for images (figures). Actual text is used to provide an alternative to text content.  |  |
| <b>Associated with content</b>       | Make sure that alternate text is always an alternate representation for content on the page. If an element has alternate text, but does not contain any page content, there is no way to determine which page it is on. If the Screen Reader Option in the Reading preferences is not set to read the entire document, then screen readers never read the alternate text. | To fix this issue, assign page content to the tag that contains the alternative/actual text.   |
| <b>Hides annotation</b>              | Alternate text cannot hide an annotation. If an annotation is nested under a parent element with alternate/actual text, then a screen reader will not announce it.  | Remove alternate/actual text from parent element. If alternate/actual text is needed make sibling objects out of content and the annotation and assign the actual/alternate text to the sibling tag.   |
| <b>Other elements alternate text</b> | This option checks for content other than figures that requires alternate text such as multimedia, annotation, or 3D models.  | Make sure that alternate text is always an alternate representation for content on the page. If an element has alternate text but does not contain any page content, there is no way to determine which page it is on. If the Screen Reader Options in the Reading preferences is not set to read the entire document, then screen readers won't read the alternate text. If additional description is required for the object beyond what can be provided in alternative text, provide a on-page description or link to a description of the non-text object. |

| Option                  | Explanation   | How to Fix  |
|-------------------------|---|---|
| <b>Table Rows</b>       | This check indicates whether each TR in a table is a child of Table, THead, TBody, or TFoot.  | To fix this issue ensure that any TR tags are a child of a Table, THead, TBody, or TFoot tag.   |
| <b>Table TH and TD</b>  | This check indicates whether a proper table structure exists. TH and TD must be children of a TR element; if not this check fails.  | To fix this issue, ensure that TH or TD tags are placed under a TR tag.   |
| <b>Table Headers</b>    | For accessibility, it's necessary that all tables in the PDF have a header.   | To fix this issue, ensure that all tables contain table header cells.   |
| <b>Table Regularity</b> | To be accessible, tables must contain the same number of columns in each row, and rows in each column.  | To fix this issue, ensure that each table row has the same number of columns or the ColSpan and RowSpan properties of a cell are set properly to account for all cells in a row.  |
| <b>Table Summary</b>    | <p>Table summaries are optional unless the table data cannot be understood without it. Summaries can improve accessibility in complex data tables or when the way in which the data is read may be important.</p> <p>It is a brief synopsis that contains a summary of the way the table is laid out - not a summary of the results. It should provide an orientation for someone who listens to the table.</p> | To fix this issue, provide a table summary for data tables where it is needed to make the data easier to understand, or to provide instructions on the data should be reviewed.   |
| <b>List items</b>       | This check reports whether each LI is a child of L tag. When this check fails, the structure of this list is incorrect. Lists must have the following structure: a List element must contain List Item elements; List Item elements can only contain Label elements and List Item Body elements.  | To fix this issue, ensure that all list item elements have a parent L tag.  |
| <b>Lbl and LBody</b>    | Lists must have the following structure: a List element must contain List Item elements; List Item elements can only contain Label elements and List Item Body elements. When this check fails, the structure of this list is incorrect.  | To fix the list structure, use the Tags panel to place Lbl and LBody elements under each list item. The list bullet or number should be a text node of the Lbl tag and the list item text a text node of the LBody tag. |
| <b>Heading</b>          | This rule checks nested headings. When this check fails, headings are not nested properly. For  | To fix this issue, ensure that all heading levels are   |

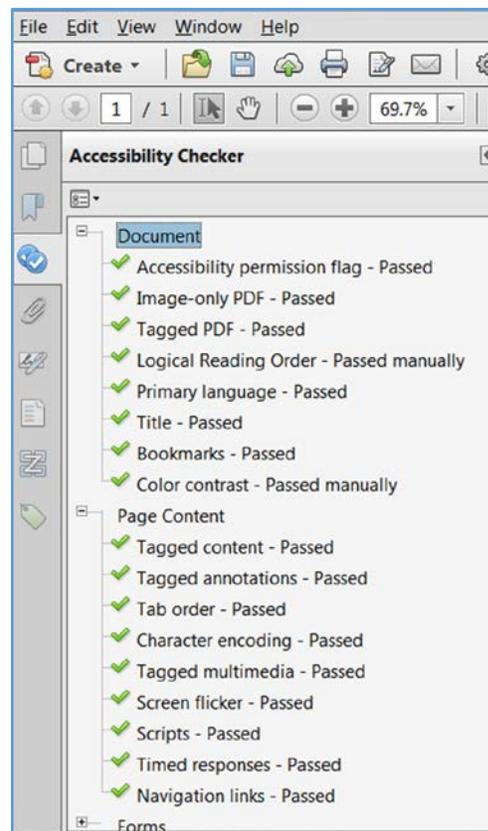
| Option                     | Explanation   | How to Fix   |
|----------------------------|---|--|
| <b>Appropriate nesting</b> | example, a level 1 heading should precede a level 2 heading, etc. The Accessibility Checker is not able to determine when heading structures must be used—that must be determined by manually reviewing the document. | nested accordingly with no missing heading levels. Use the Tags Panel or Touch Up Reading Order tool to assign heading tags. |

### Continue Checking Until All Issues are Addressed

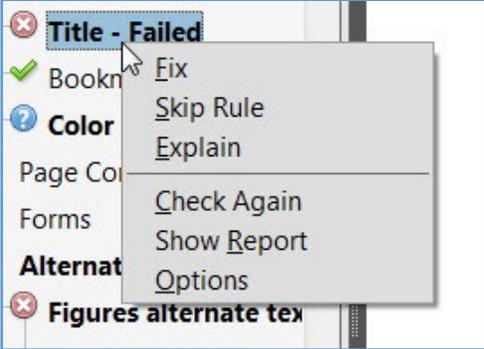
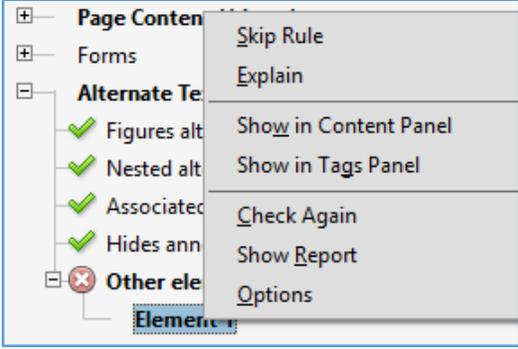
Repeat the process of running the Accessibility Checker and associated repair techniques along with the Hints for Repair until the Accessibility Checker indicates “Passed” for all selected tests.



A Failed Accessibility Check



A Successful Accessibility Check

| Context Menu Option  | Description   |
|--|---|
| <p>Many of the items in the summary are links that will take you to the problem area in the document you've checked.</p> <p>If you right click on one of the accessibility checker summary links a handy option menu opens and you are given several options (which can be different depending on which accessibility issue you've selected):</p>  |   |
|  <p>A screenshot of an accessibility checker summary. A context menu is open over the 'Title - Failed' item. The menu options are: Fix, Skip Rule, Explain, Check Again, Show Report, and Options. Other items in the summary include 'Bookmarks', 'Color', 'Page Color', 'Forms', 'Alternate Text', and 'Figures alternate text'.</p> |  <p>A screenshot of an accessibility checker tree. A context menu is open over the 'Other elements' item. The menu options are: Skip Rule, Explain, Show in Content Panel, Show in Tags Panel, Check Again, Show Report, and Options. Other items in the tree include 'Page Content', 'Forms', and 'Alternate Text'.</p> |
| <p>Automatically fix the issue</p>   | <p>If you choose "Fix" the issue will either be automatically fixed or a dialog box will open for you to do an action. For instance a dialog box will open if you choose fix for missing alt text where you will then add the alt text for the highlighted image.</p>   |
| <p>Skip Rule</p>   | <p>If you've determined the rule does not apply to your document you can choose skip rule, however, use this wisely. Just because you get a "clean" report, your file may not be accessible. This may be used for skipping the "character encoding" rule when the characters with issues are bullets or unimportant images you've marked as artifacts.</p>  |

| <b>Context Menu Option</b>  | <b>Description</b>  |
|---|---|
| Explain will open a web page that takes you to a detailed explanation of the issue. |   |
| Show in Content panel   | Opens the content panel and highlights the content with an issue                                    |
| Show in Tags panel  | Opens the tags panel and highlights tag that has an issue   |
| Check Again   | If you've fixed the issue on your own, you can choose "check again" and the check will be run again |
| Show Report   | Shows the accessibility report  |
| Options   | Opens the options window again  |

## What are PDF Tags?

- Tags are one of the most important aspects of accessible PDF files.
- Tags provide the structure, textual representation of the PDF that is presented to assistive technology (AT).
- Tags make AT devices such as screen readers able to navigate a PDF document.
- A screen reader reads the tag structure and therefore the tags must be in order and the content must be properly tagged for a PDF file to be truly accessible.
- Tags are similar to HTML tags (for Web Sites) that define the document structure.
- PDF tag and HTML tag codes are similar, though not exactly the same and include such familiar elements as paragraphs, headers, forms, captions, lists, tables and table cells, and images/graphics.
- Acrobat tags also include many non-HTML elements such as formulas, annotations, notes, parts, references, and sections.
- AT can determine paragraphs, lists, tables, form elements, etc. from tags.
- Tags are a duplicate copy of your document content with descriptive code (tags) identifying each element of content
- A PDF without tags appear either blank or as one large block of text to AT.
- An untagged PDF can be read by assistive technology, however the user agent is really just guessing at what the author intended and the screen reader will be reading the guesses.

## Predefined PDF Tags

The following tags are predefined in tagged PDF.

| <b>Tag Type</b>        | <b>Tag</b>   |
|------------------------|--------------|
| Article                | <Art>        |
| Annotation             | <Annot>      |
| Bibliography Entry     | <BibEntry>   |
| Block Quote            | <BlockQuote> |
| Caption                | <Caption>    |
| Code                   | <Code>       |
| Division               | <Div>        |
| Document               | <Document>   |
| Figure                 | <Figure>     |
| Form                   | <Form>       |
| Formula                | <Formula>    |
| Heading                | <H>          |
| Heading Level 1        | <H1>         |
| Heading Level 2        | <H2>         |
| Heading Level 3        | <H3>         |
| Heading Level 4        | <H4>         |
| Heading Level 5        | <H5>         |
| Heading Level 6        | <H6>         |
| Index                  | <Index>      |
| Label                  | <Lbl>        |
| Link                   | <Link>       |
| List                   | <L>          |
| List Item              | <LI>         |
| List Item Body         | <Lbody>      |
| Note                   | <Note>       |
| Paragraph              | <P>          |
| Part                   | <Part>       |
| Quote                  | <Quote>      |
| Reference              | <Reference>  |
| Section                | <Sect>       |
| Span                   | <Span>       |
| Table                  | <Table>      |
| Table Data Cell        | <TD>         |
| Table Header Cell      | <TH>         |
| Table of Contents      | <TOC>        |
| Table of Contents Item | <TOCI>       |
| Table Row              | <TR>         |

## PDF Tags Explanation

The following standard Adobe element tag types appear in the New Tag submenu in the Tags tab Options menu, as well as in the Tag Type pop-up menu in the TouchUp Properties dialog box.

### Block-level Elements

All page elements that consist of text laid out in paragraph-like forms are referred to as block-level elements. All block-level elements are part of the document's logical structure and are represented in the tag tree. Such elements can be further classified as container elements, special text elements, heading and paragraph elements, and label and list elements.

### Container Elements

These are the highest level of elements and provide grouping of other block-level elements:

| Tag                         | Description   |
|-----------------------------|---|
| Division element <Div>      | A generic block-level element or group of block-level elements  |
| Section element <Sect>      | A general container element type, comparable to Division (DIV Class="Sect") in HTML, which is usually a component of a part element or an article element         |
| Article element <Art>       | A self-contained body of text considered to be a single narrative   |
| Part element <Part>         | A part element defines a large division of a document, and may group smaller divisions together, such as article elements, division elements, or section elements |
| Document element <Document> | The root element of a document's tag tree   |

### Special Text Elements

These elements identify text that is not used in a narrative paragraph:

| Tag                                   | Description  |
|---------------------------------------|--|
| Block quote element <BlockQuote>      | One or more paragraphs of text attributed to someone other than the author of the immediate surrounding text.  |
| Caption element <Caption>             | A brief portion of text that describes a table or a figure. A caption element is different from a label element, which identifies but does not describe a table or a figure. |
| Index element <Index>                 | A sequence of entries that contain identifying text and reference elements that point out the occurrence of the text in the main body of the document.                       |
| Table of contents element <TOC>       | An element that contains a structured list of items and labels identifying those items. A table of contents element has its own discrete hierarchy.                          |
| Table of contents item element <TOCI> | An item contained in a list associated with a table of contents element.   |

## Heading and Paragraph Elements

These are paragraph-like block-level elements that include specific level headings and generic paragraphs <P>. A heading element <H> should appear as the first child of any higher level division. Six levels of headings <H1>—<H6> are available for applications that don't hierarchically nest sections.

## Label and List Elements

These block-level elements are used for structuring lists:

| Tag                       | Description  |
|---------------------------|--|
| List element <L>          | A list can be any sequence of items of similar meaning or other relevance.   |
| List item element <LI>    | Any one member of a List. The immediate child elements of a list element should be list item elements. A list item element may have a label element (optional) and a label body element (required) as a child. |
| Label element <Lbl>       | A label can be a bullet, name, or number that identifies and distinguishes an element from others in the same list.  |
| List body element <LBody> | The descriptive content of a list item   |

## Table Elements

These are special structural elements for structuring tables:

| Tag                            | Description  |
|--------------------------------|--|
| Table element <Table>          | A table is a two-dimensional arrangement of data or text cells that contains table row elements as children and may have a caption element as its first or last child element. |
| Table row element <TR>         | One row of headings or data in a table. A table row element may contain table header cell elements and table data cell elements.   |
| Table data cell element <TD>   | A table cell that contains non-header data.  |
| Table header cell element <TH> | A table cell that contains header text or data describing one or more rows or columns of a table.  |

## Inline-level Elements

Inline-level elements are used to identify a span of text having specific styling or behavior. They are differentiated from block-level elements, and may be contained in or contain block-level elements. The standard inline-level elements are:

| Tag                                   | Description   |
|---------------------------------------|---|
| Bibliography entry element <BibEntry> | A description of where some cited information may be found, which may contain a label element as a child element.   |
| Quote entry element <Quote>           | An inline portion of text attributed to someone other than the author of the text surrounding it. It is different from a block quote, which is a whole paragraph or multiple paragraphs, as opposed to inline text. |

| <b>Tag</b>                | <b>Description</b>   |
|---------------------------|--|
| Span entry element <Span> | Any inline segment of text. A common use of a span entry element is to delimit text associated with a given set of styling properties. |

### Special Inline-level Elements

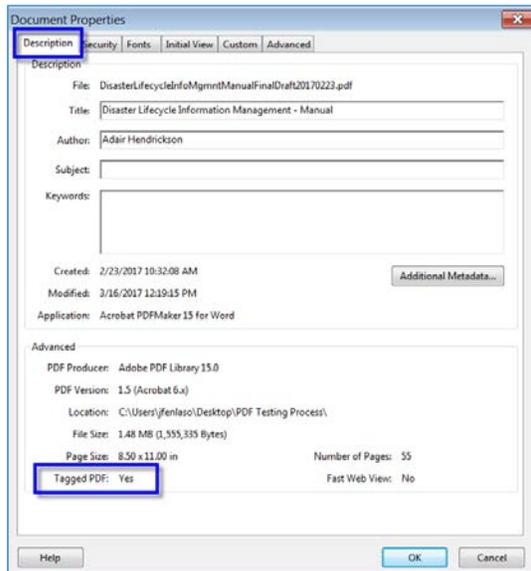
Similar to inline-level elements, these elements are used to describe an inline portion of text that has special styling or behavior:

| <b>Tag</b>                          | <b>Description</b>  |
|-------------------------------------|---|
| Code entry element <Code>           | Computer program text embedded within a document  |
| Figure entry element <Figure>       | A graphic or graphic representation associated with text  |
| Form entry element <Form>           | A PDF form annotation that can be or has been filled out  |
| Formula entry element <Formula>     | A mathematical formula  |
| Link entry element <Link>           | A hypertext link embedded within a document associated with a PDF link annotation that goes to another place in the same document or another document |
| Note entry element <Note>           | Explanatory text, such as a footnote or endnote, that is referred to in the main body of text   |
| Reference entry element <Reference> | A citation to text or data found elsewhere in the document  |

## Determining if the Document has been Tagged

The most important step to begin creating an accessible document is to ensure that the document contains a tag structure.

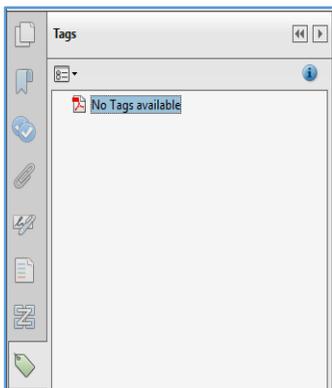
There are several ways to determine if a PDF document has been tagged:



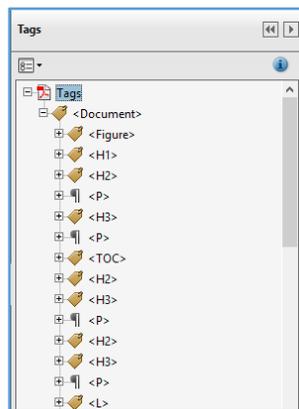
### View Document Properties

1. Open the Document Properties dialog: File > Properties.
2. Look for the “Tagged PDF” label in the lower left hand corner of the Description tab to say “Yes”

Description Tab showing PDF is tagged



The “Tags” panel indicates that no tags available



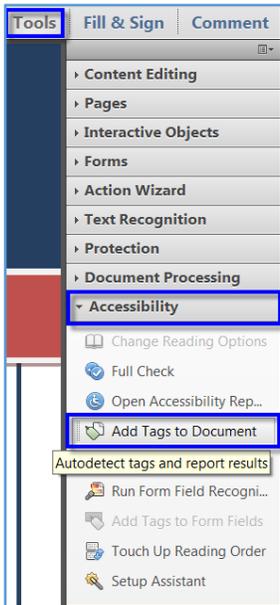
The “Tags” panel displays the tree structure of tags

### Reveal the Tags Panel

Open the Tags navigation panel. If there are tags, the tree structure of the tags can be seen in the navigation panel.

If there are no tags, the message “No Tags available” is displayed.

If it is confirmed the document does not contain a tag structure, tags can be added to the document by selecting the option Tools> Accessibility > Add Tags to Document.

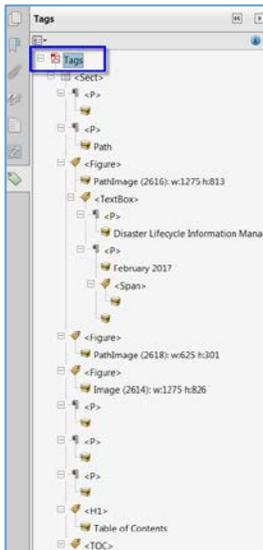


Accessibility Tools pane highlighting an option to Add Tags to Document

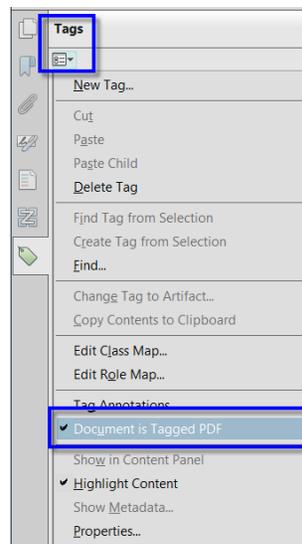


Add Tags Report

With this functionality, Acrobat Pro automatically inserts tags into the document, and generates a report including a confidence rating of the generated tags and the tasks you must perform manually (like, for example, adding alternative text to images).



Tag Tree Structure



Options Menu showing Document is Tagged

Recheck in the Tags Panel that a tag structure has been added to the PDF

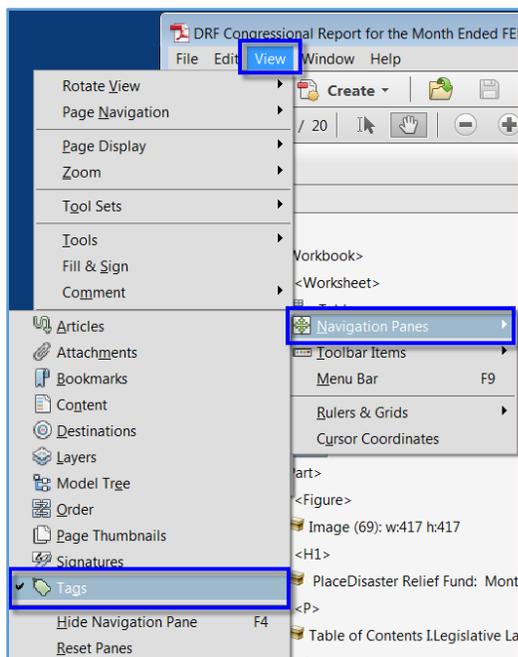
Options Menu> look for “Documents is Tagged PDF” option is checked.

## Assess Tag Order & Reading Order

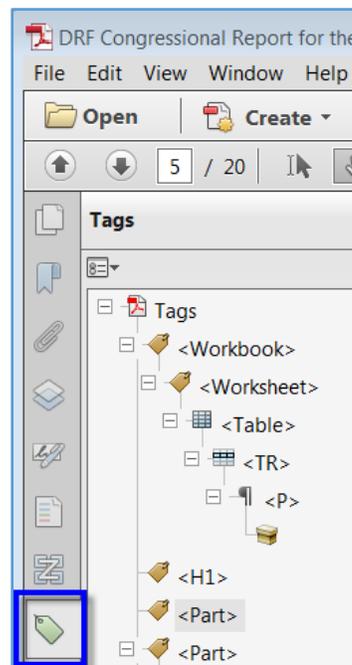
Screen readers and text-to-speech software look at the Tags of a PDF to determine the correct reading order of the page. The tags panel displays all the structural elements contained in your document such as paragraphs, headings, links, lists, images, etc. The order in which these items are displayed is the order in which they will be read out loud to a user of assistive technology.

Unfortunately, tags generated during conversion are not always in the correct order. It is important to ensure that the tag order is correct and that tags are not missing. Begin by opening the tags panel:

- To view the Tags Panel, select View > Show/Hide > Navigation Panes > Tags.
- Can also select the Tags pane from the left-side Navigation Pane.
- The list of tags can be navigated, expanded, and collapsed using a mouse or the arrow keys on the keyboard.

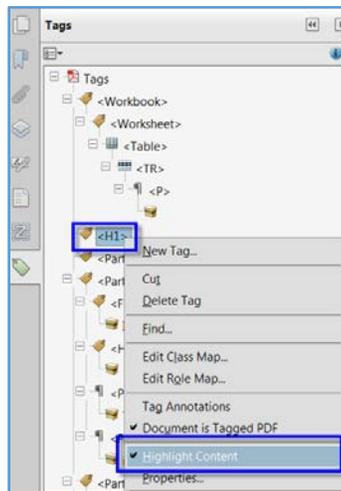


Steps (Menus) to View Tags Panel

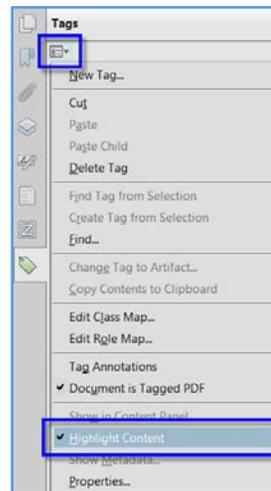


Tags Pane

- To highlight content on our PDF as you click through tag items, you can right click on any tag and choose “Highlight Content” or select in the Options (☰) menu. When a tag is selected in the tag tree, its corresponding content will be highlighted on the document.

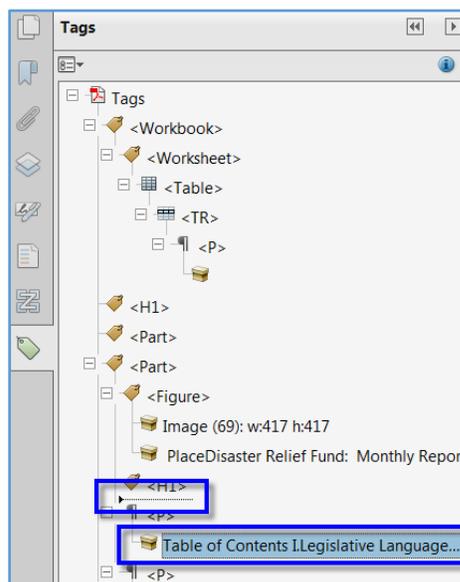


Highlight Content Menu



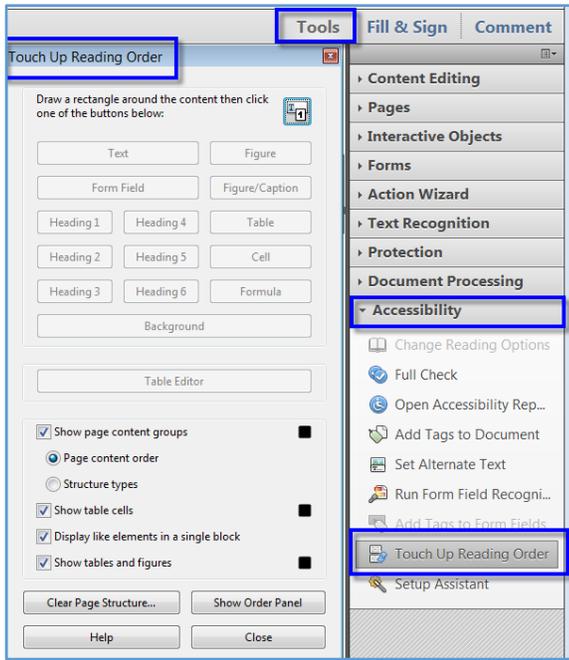
Options Menu

- If they are not in the correct order, move tags around by clicking on a tag so that it is highlighted then drag and drop it to the correct location.
- A line will appear showing the location where the tag will be moved in the Tag Tree and the cursor will change its color to black.

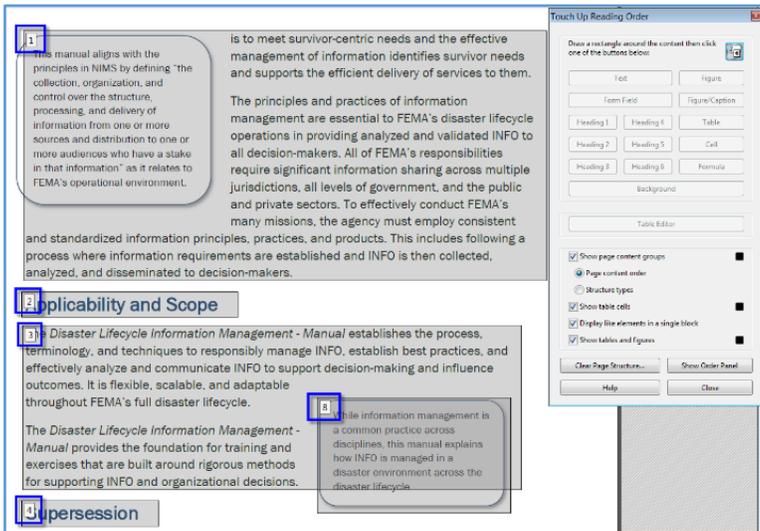
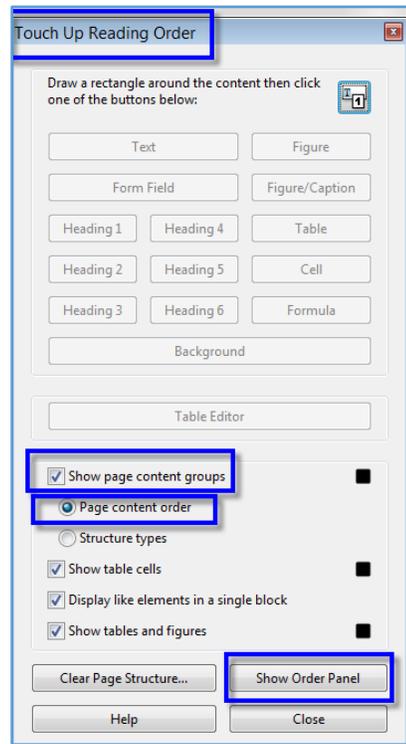


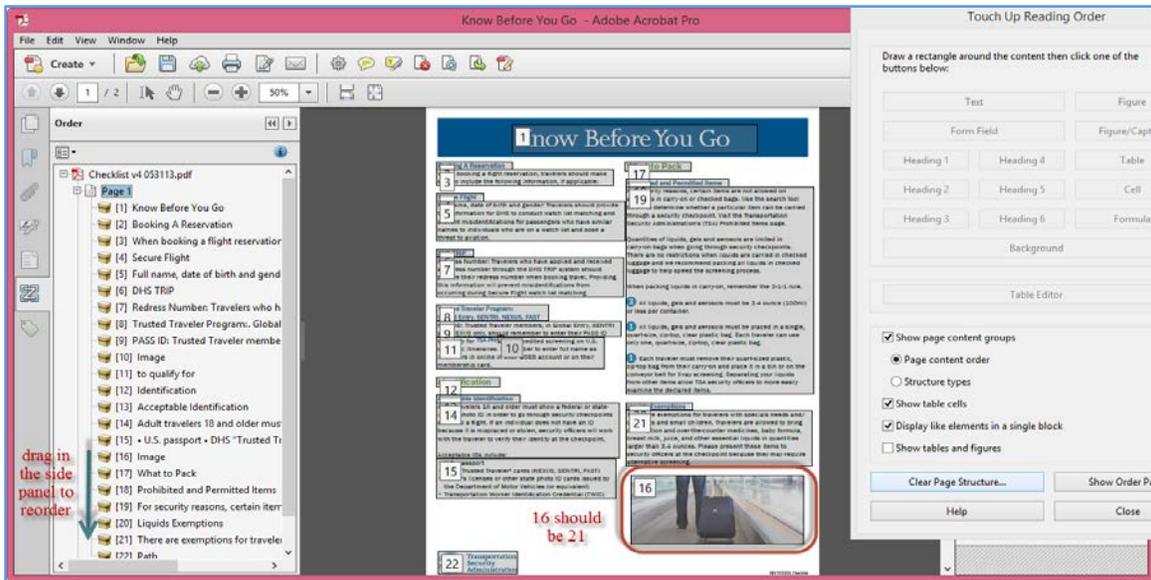
Tag Tree

To check the Reading Order, use the TouchUp Reading Order Panel from the Accessibility Toolbar.



1. In the Accessibility Toolbar, select the TouchUp Reading Order option.
2. In the new window that pops up, check Show Page Content Groups> Choose Page Order Content> then select Show Order Panel.
3. The Order Panel should show up in the Navigation Pane on the left side of the screen.
4. Your page should fill with sections that are numbered. If they are not in the correct order, Select and Drag.





1. Check each page in the document. Verify between the document view and the order panel that the items are numbered correctly.
2. After editing the reading order, go back to the Tags Panel and make sure the tags panel matches the order panel. Both Panels should display the same order so that the content can be read in the same order. If it does not, then begin re-ordering tags as appropriate.

## TouchUp Reading Order Tool (Fixing PDFs)

Once you've checked your PDF for accessibility, you can begin to fix it. The report has a lot of valuable information including where the problems are and hints on how to fix the issues. You can click on the links in the report to view the exact location of the accessibility issues and fix the issues that way. Or you can start at the beginning within the tag structure and fix the tags first.

When working in the tags panel you can right click on any tag and choose "Highlight Content" or select in the Options () menu. This will help you know where the content is for this tag by highlighting the corresponding text, image, or other element in the PDF file.

Even though the PDF may be tagged, it may be tagged incorrectly. A properly tagged PDF is one that has:

- Heading tags (if the PDF has headings)
- Paragraph tags for paragraphs
- List tags for lists
- Figure tags for images
- Properly formatted Table tags if the file has tables
- Correctly labeled form tags if the file has form elements

## Edit tags with the TouchUp Reading Order tool

You can use the TouchUp Reading Order tool to create tags in untagged PDFs, add new tags to an existing structure or to fix basic tagging problems. However, this manual tagging doesn't provide the same level of detail to the tagging structure as the Add Tags To Document command, such as paragraphs, bulleted and numbered lists, line breaks, and hyphens. Before you clear the existing structure, make sure that manual tagging is your only recourse.

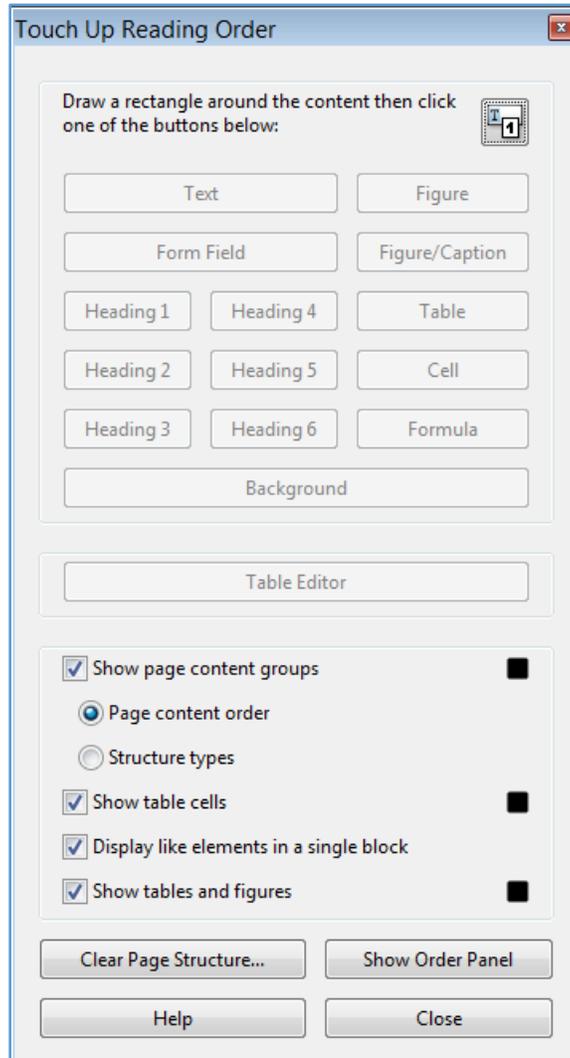
To open the TouchUp Reading Order tool, select Tools > Accessibility > TouchUp Reading Order to select the TouchUp Reading Order tool.

The TouchUp Reading Order Tool includes the following options:

- **Text.** Tags the selection as text.
- **Figure.** Tags the selection as a figure. Text contained within a figure tag is defined as part of the image and is not read by screen readers.
- **Form Field.** Tags the selection as a form field.
- **Figure/Caption.** Tags a selected figure and caption as a single tag. Any text contained in the tag is defined as a caption. Useful for tagging photos and captions and preventing caption text from being incorrectly added to adjacent text blocks. Figures may require alternate text.

- **Heading 1, Heading 2, Heading 3.** Tags the selection as a first, second, or third level heading tag. You can convert heading tags to bookmarks to help users navigate the document.
- **Table.** Tags the selection as a table after the selection is analyzed to determine the location of headings, columns, and rows.
- **Cell.** Tags the selection as a table or header cell. Use this option to merge cells that are incorrectly split.
- **Formula.** Tags the selection as a formula. Because speech software may handle formula tags differently from normal text, you may want to add a description using alternate text.
- **Background.** Tags the selection as a background element, or artifact, removing the item from the tag tree so that it doesn't appear in the reflowed document and isn't read by screen readers.
- **Table Editor.** Automatically analyzes the selected table into cells and applies the appropriate tags. The table must be tagged as a table before you can use the Table Editor command on it.
- **Show Page Content Order.** Shows content elements as highlighted areas that contain numbers to indicate the reading order. The rectangle next to this entry is a color swatch. Specify the desired highlight color for page content order by clicking the color swatch.
- **Show Table Cells.** Highlights the content of individual table cells. The rectangle next to this entry is a color swatch. Specify the highlight color for Table Cells by clicking the color swatch.
- **Show Tables and Figures.** Outlines each table and figure with a crossed-out box. The box also indicates whether the element includes alternate text. The rectangle next to this entry is a color swatch. Specify the highlight color for Tables and figures by selecting the color swatch.
- **Clear Page Structure.** Removes the tagging structure from the page. Use this option to start over and create a new structure if the existing structure contains too many problems.
- **Show Order Panel.** Opens the Order Tab to allow you to reorder highlighted content.
- **Edit Alternate Text.** Available in the menu that appears when you right-click a highlighted figure. Allows the user to add or edit a text description about the figure properties that is read by a screen reader or other assistive technology.
- **Edit Form Field Text.** Available in the menu that appears when you right-click a form field. Allows the user to add or edit a form field text description that is read by a screen reader or other assistive technology.

- **Edit Table Summary.** Available in the menu that appears when you right-click a highlighted table. Allows the user to add or edit a text description about the table properties that is read by a screen reader or other assistive technology.



TouchUp Reading Order Tool

## What are Paragraphs?

A paragraph is a block of text in a document that centers on a specific idea.

Draw a rectangle around text that you want to label as a Paragraph.

Select the Text option on the Touch-Up Reading Order Panel (Text and Paragraph are synonymous in Acrobat. They both create a Paragraph tag <P>).

The Paragraph Tag <P> will be displayed in the Tag Tree.

The screenshot shows the Adobe Acrobat interface. On the left, the 'Tags' panel displays a tree structure with a blue box highlighting the paragraph tag <P> for the text 'E. All FEMA employees shall include a signature bl...'. The main document area shows a table with contact information for FEMA Directive 262. A blue rectangle is drawn around the text 'E. All FEMA employees shall include a signature block on all e-mails, to provide contact information. The signature block should include identified below and be formatted as follows:'. The 'Touch Up Reading Order' panel is open, with the 'Text' button highlighted in yellow. The panel includes options for 'Page content order' (selected) and 'Structure types'. The document content includes a table with the following information:

| Information:           | Example:   |
|------------------------|--|
| 1. Employee's Name     | Jane Doe   |
| 2. Position Title      | Program Analyst  |
| 3. Organization        | Office of the CIO  |
| 4. Agency Name         | FEMA   |
| 5. Office Phone Number | (202) 646-5556   |
| 6. Cell Phone Number   | (202) 555-5556 (cell)  |
| 7. Fax Number          | (202) 646-7778 (fax)   |
| 8. E-mail Address      | E-mail: <a href="mailto:jane.doe@dhs.gov">jane.doe@dhs.gov</a> |

F. E-mails shall not contain any of the following:

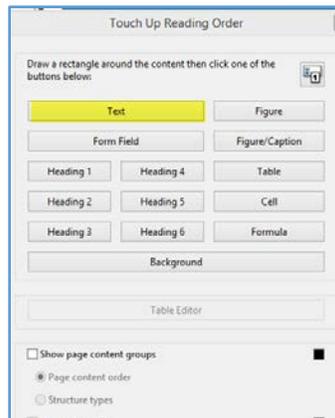


Figure 1 - Select "Text" in TouchUp Reading Order Tool

## What are Headings?

Headings are text in a PDF that indicates a document title or are used to separate sections of the PDF. For documents longer than 3-4 paragraphs, headings and subheadings are important accessibility strategies. They help screen readers both determine the overall outline of the document and to navigate to specific information that may need more of the screen reader's attention.

Imagine a large cookbook with no table of contents or index. How hard would it be to find a specific recipe?

If you imagine a PDF is a book, then the headings are like the title and chapters in a PDF.

<H1> headings would be the main title of the PDF.

<H2> headings would be like the chapters in a book.

If the book is a textbook, <H3> – H6 are like the sub-headings within chapters.

The lower the number, the smaller and more detailed a section. Try to be consistent with your sub headings.

It is important to also apply headings to index and glossary sections. Applying headings to these areas will help assistive technology users' move the cursor to pertinent information without having to read other content.

To tag text as a heading, open your PDF and go to Tools > Accessibility > Touch-Up Reading Order Panel

Draw a rectangle around the text you want to label as a level 1 heading <H1> and select Heading 1 on the Touch-Up Reading Order Panel

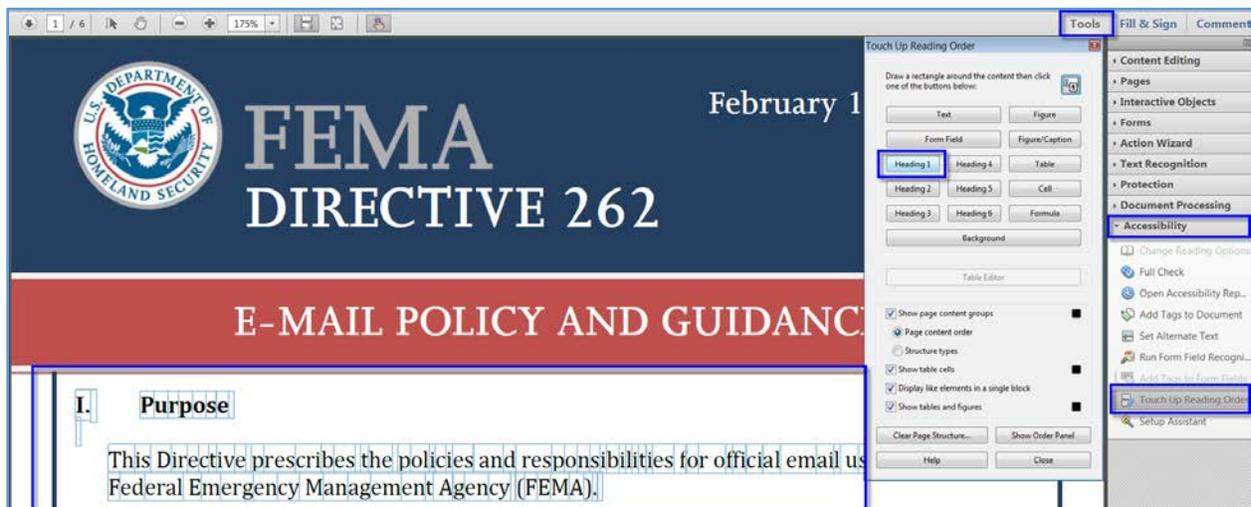


Figure 1 – Heading One Example

If the “Show Page Content Order” is checked on the Touch Up-Reading Order Panel, then the text you just selected should now be highlighted in gray with a number on the left-hand side within the contents window.

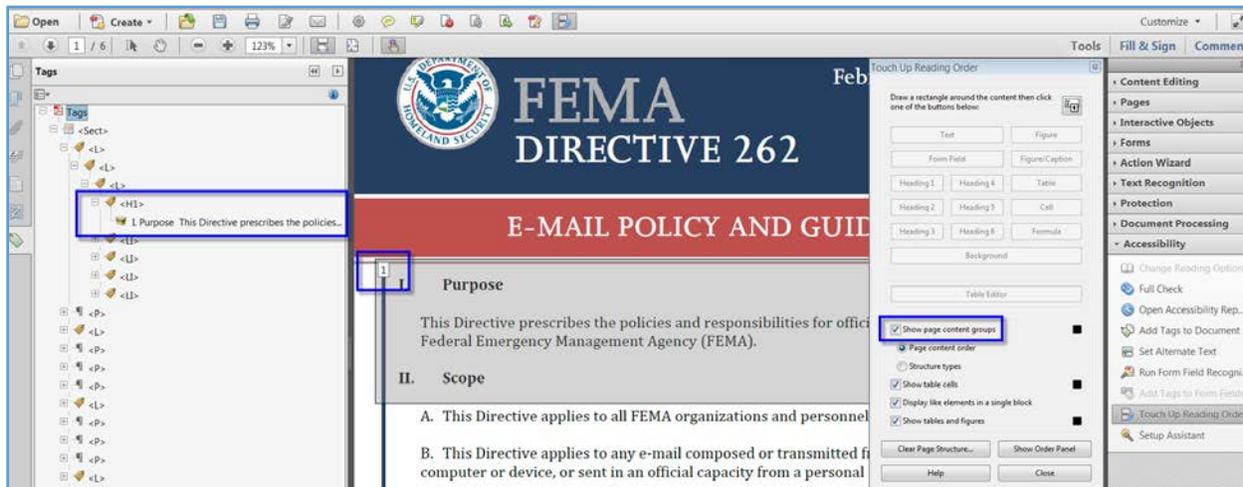


Figure 2 – Heading 1 Example with Show Page Content Order checked and Tag Tree View

To tag as Heading Level 2 <H2> or 3 <H3>, select the Heading 2 or Heading 3 options in the Touch Up Reading Order Tool.

To tag as Heading Level 4 – 6, tag as 1 -3, then change the 3 to a 4, 5 or 6 in the tag panel much the same way as you would rename a file on your computer.

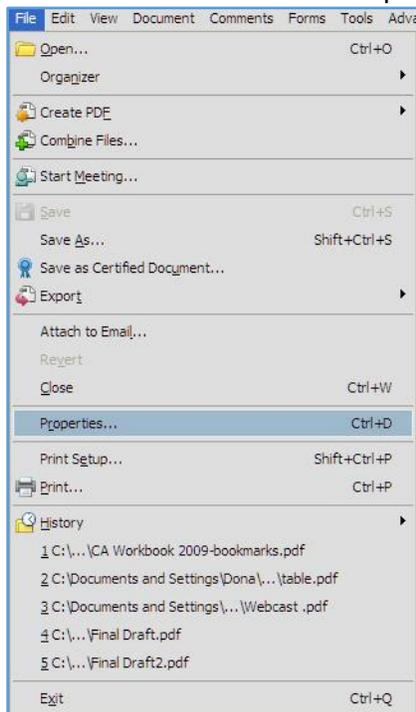
Note: Ensure that all heading elements are ordered properly. For example, <H2> elements should follow <H1> elements and <H3> elements should follow <H2> elements, etc.

Content authors should not "skip" levels (e.g. H1 directly to H3). When headings are incorrectly ordered, users of assistive technology may become confused over the structure of the document and believe content is missing.

Heading element tags such as <H1> and <H2> etc. should be utilized sparingly and primarily to denote important sections within a page/document. Unnecessary use of heading elements prevents users with visual impairments from quickly navigating between the key sections of a page.

## Adding a Document Title

### 1. Go to File Menu > Properties



2. Choose Properties under the File Menu
3. Description Tab > fill in **Title** (a meaningful title must be given to the document. This title must be representative of the content of the PDF file. It is usually the same as the title which appears on the cover of the document)
4. Description Tab > fill in **Author** (if no author is listed on the PDF use whatever your client has told you to use for the default author. If you don't know, leave it blank. It can be changed or filled in later.)

# FEMA-4250-DR, Missouri Disaster Declaration as of 03/17/2016

**Document Properties**

Description Security Fonts Initial View Custom Advanced

Description

File: dec\_4250.pdf

**Title:** FEMA-4250-DR, Missouri Disaster Declaration as of 3/17/2016

**Author:** Federal Emergency Management Agency (FEMA)

Subject:

Keywords:

Created: 3/17/2016 4:34:52 PM [Additional Metadata...](#)

Modified:

Application: Esri ArcMap 10.2.2.3552

Advanced

PDF Producer:

PDF Version: 1.6 (Acrobat 7.x)

Location: C:\Users\jfenlaso\Desktop\

File Size: 629.15 KB (644,248 Bytes)

Page Size: 11.00 x 8.50 in      Number of Pages: 1

Tagged PDF: No      Fast Web View: No

Help OK Cancel

Fill in the Title and Author. Subject and Keywords is optional.

## What are Lists?

- A list is text that might be short phrases, single words, sentences or paragraphs grouped together as a category.
- Lists often are numbered with numbers or letters.
- Lists might have symbols instead of numbers or letters, called bullets.
- List structures help assistive technology users to identify and understand the relationship items have to each other.
- Occasionally lists have nothing in front of each list item.
- Try to properly tag lists as lists.
- List items which are not tagged as list elements may not be rendered properly in assistive technology.
- Authors should ensure that all list items are tagged as list elements within a document.
- When list items are tagged properly users of screen readers will be able to determine the number of items in the list, navigate to each list in the document, and quickly navigate between list items.
- When list elements are not properly tagged, users of assistive technologies are not able to detect the hierarchical structure and position of list items.

The structure types for lists in PDF documents are:

- <L> - **List Tag**, which contains one or more <LI> tags.
- <LI> - **List Item Tag**. List item tags can contain <Lbl> and <LBody> tags.
- <Lbl> - **List Item Label**. Contains distinguishing information such as a item number or bullet character.
- <LBody> - **List Item Body**. Contains list item content, or in the case of a nested list, it may contain additional List tag trees.

If a block of text should have been tagged as a list, but was not, follow these directions:

Tag each list item as a paragraph if they are not already tagged as such.

The screenshot shows a PDF document with a right-click context menu open over a paragraph of text. The text is highlighted in blue. The context menu is on the right side of the page and contains the following options: Action Wizard, Text Recognition, Protection, Document Processing, Accessibility, Show reading order panel, Show page content groups, Display like elements in a single box, Show table cells, Show tables and figures, Run Form Field Recognition, Delete Selected Item Structure, Clear page structure, Tag as text (highlighted), Tag as background, Tag as figure, Tag as figure/caption, Tag as table, and Tag as cell.

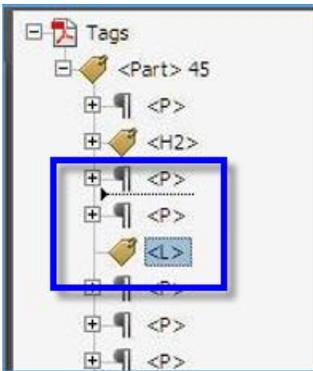
Highlight paragraph with cursor> right click on text> select “Tag as Text” (Text=Paragraph Tag)

In the tag panel, right click on the <P> tag> choose New Tag > List (from the drop down). Select OK.



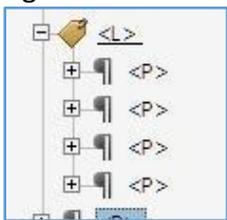
New Tag Type List

Move the List tag above the first paragraph tag by left clicking on it and dragging it to where you want to place it. A dotted line with a small black triangle will show up where you've chosen to place the tag. Release the right mouse button.



Move the List tag above the first paragraph tag

Next, move each paragraph tag that you just tagged so that it is in order and under the List tag you just created and moved. Make sure they are incorporated into the List tag so what when you click the minus tag in front of the list tag it hides all of the paragraph tags you just made and becomes a plus sign.

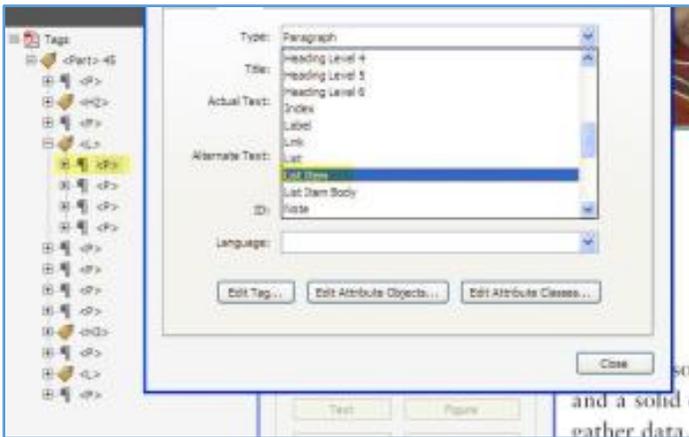


Move paragraph tags under List tag



Click - to contract and + to expand

Now rename each of the paragraph tags as a List Item tag. You can either right click on each one choose Properties > List Item or rename them by highlighting them and naming them <LI>, much as you would rename a file on your computer.

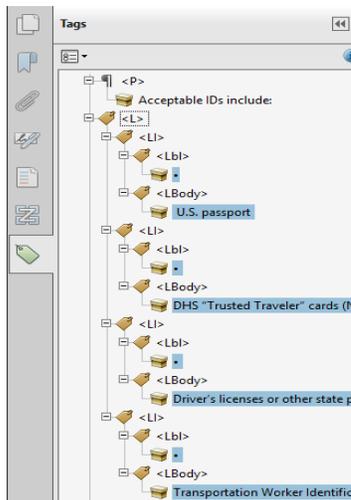


Choose List Item from drop down list



Rename paragraph tag as List Item

Tag the symbol in front of each list item, if one exists, as a paragraph, then tag that as a list label (<Lbl>) and then tag the actual list item as a list body (<LBody>). Place the list label and list body tags under a List Item tag. Often when the program tags lists, it does it this way.



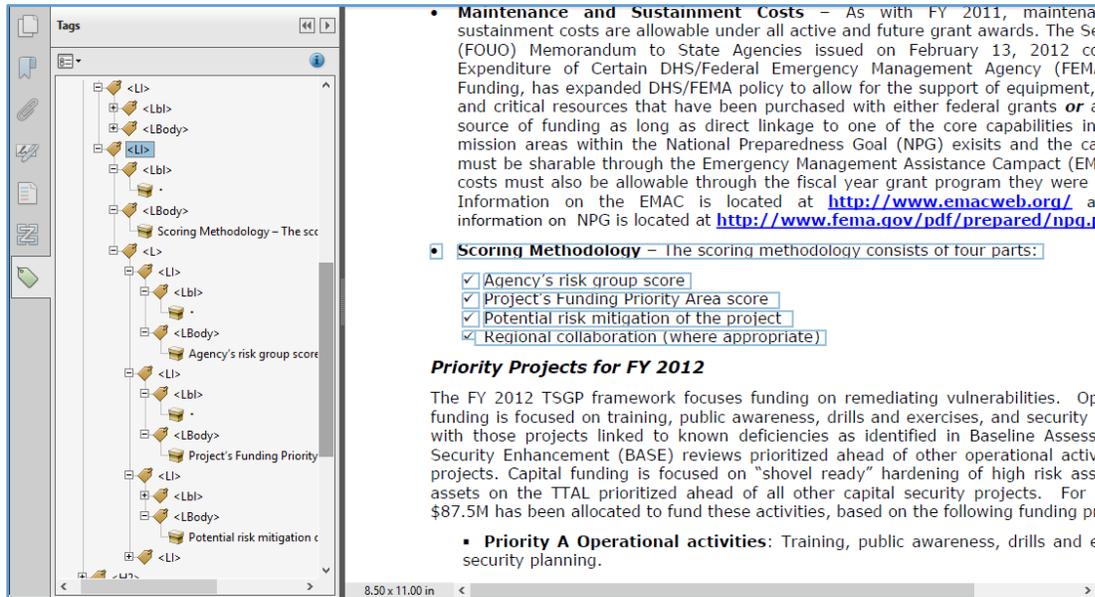
Structure of a list of four items

Below is an example of proper list structure:  
Example List and List Structure:

- U.S. passport
- DHS "Trusted Traveler" cards (NEXUS, SENTRI, FAST)
- Driver's licenses or other state photo ID cards issued by the Department of Motor Vehicles (or equivalent)
- Transportation Worker Identification Credential (TWIC)

## Ensure sub-lists are structured properly

A sub-list must be structurally under, as a child, the list item to which it is related. It is placed after the text of the parent list item. Below is an example of a sub-list structure:



The screenshot displays a web editor interface. On the left, a 'Tags' panel shows a hierarchical tree structure of HTML tags. The structure is as follows:

- <LI>
  - <LBl>
  - <LBody>
    - <LI>
    - <LBl>
    - <LBody>
      - Scoring Methodology – The sc...
    - <L>
      - <LI>
        - <LBl>
        - <LBody>
          - Agency's risk group score
      - <LI>
        - <LBl>
        - <LBody>
          - Project's Funding Priority
      - <LI>
        - <LBl>
        - <LBody>
          - Potential risk mitigation c

On the right, the rendered HTML content is shown. It includes a bulleted list with a sub-list under the second item:

- **Maintenance and Sustainment Costs** – As with FY 2011, maintenance and sustainment costs are allowable under all active and future grant awards. The Secretary (FOUO) Memorandum to State Agencies issued on February 13, 2012 concerning the Expenditure of Certain DHS/Federal Emergency Management Agency (FEMA) Funding, has expanded DHS/FEMA policy to allow for the support of equipment, and critical resources that have been purchased with either federal grants **or** a source of funding as long as direct linkage to one of the core capabilities in mission areas within the National Preparedness Goal (NPG) exists and the cost must be sharable through the Emergency Management Assistance Compact (EMAC). EMAC costs must also be allowable through the fiscal year grant program they were awarded. Information on the EMAC is located at <http://www.emacweb.org/> and information on NPG is located at <http://www.fema.gov/pdf/prepared/npg.pdf>.
- **Scoring Methodology** – The scoring methodology consists of four parts:
  - Agency's risk group score
  - Project's Funding Priority Area score
  - Potential risk mitigation of the project
  - Regional collaboration (where appropriate)

**Priority Projects for FY 2012**

The FY 2012 TSGP framework focuses funding on remediating vulnerabilities. Operational funding is focused on training, public awareness, drills and exercises, and security, with those projects linked to known deficiencies as identified in Baseline Assessment. Security Enhancement (BASE) reviews prioritized ahead of other operational activity projects. Capital funding is focused on "shovel ready" hardening of high risk assets on the TTAL prioritized ahead of all other capital security projects. For FY 2012, \$87.5M has been allocated to fund these activities, based on the following funding priorities:

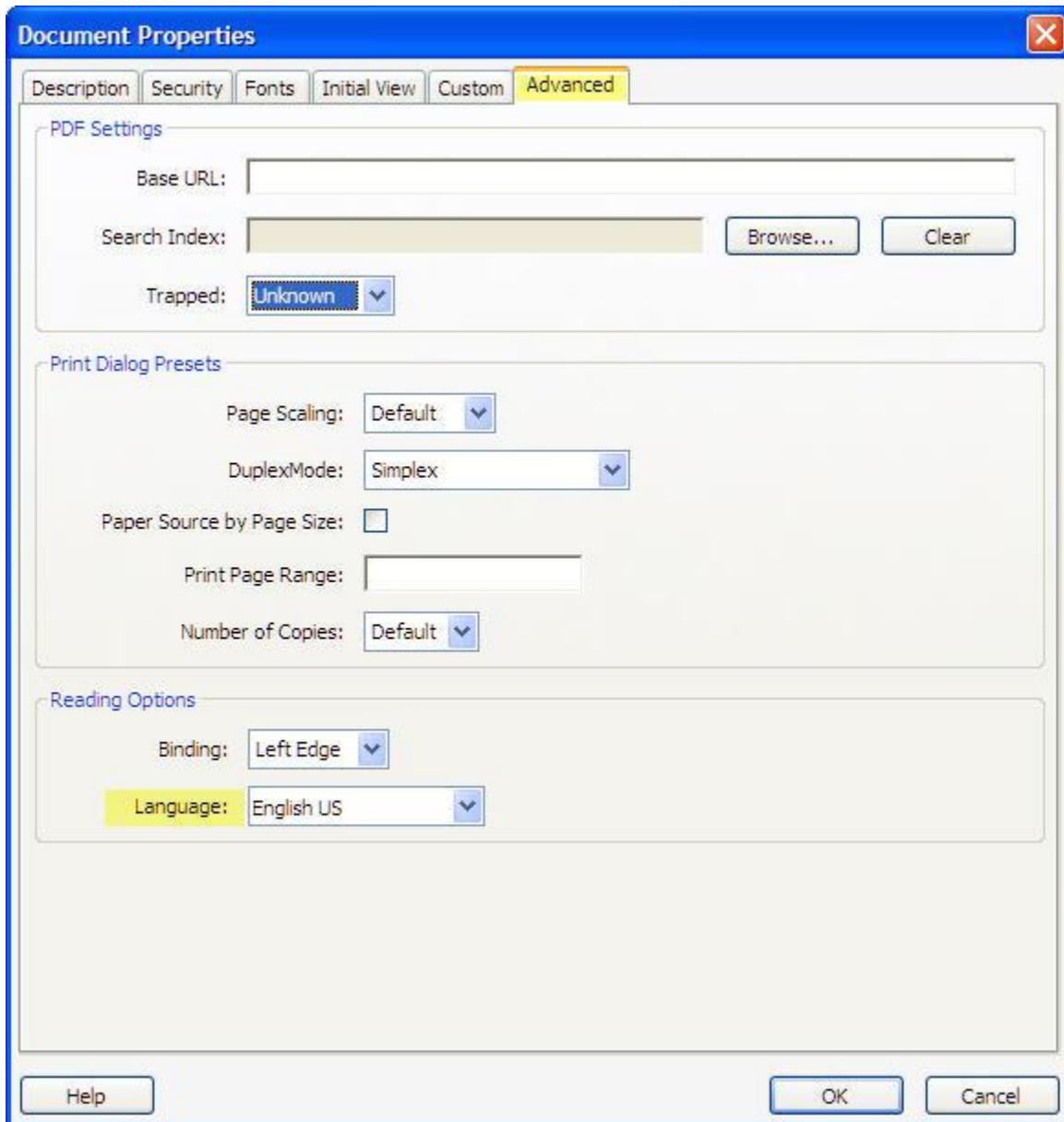
- **Priority A Operational activities:** Training, public awareness, drills and exercises, and security planning.

Pay attention to lists that span across multiple pages. Even though a list continues on to another page, it is important that in the tag structure those list items are part of the original list and not a list of their own. Attention to detail of these items enables users to associate related content and know the total number of related items.

## Specifying a Document Language

Adding the main document language in the document properties enables voice synthesizers in screen readers to correctly pronounce the document content.

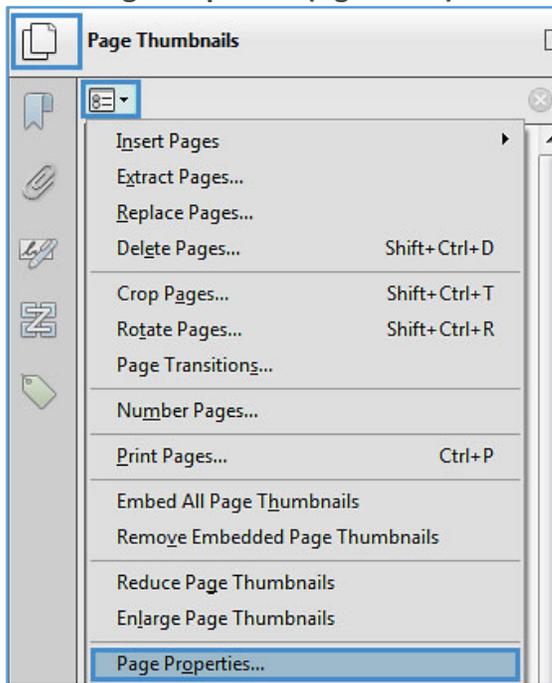
To rename the Document Language, go to the Document Properties dialog box (File > Properties via the menu bar), select the Advanced Tab, and then choose the Main Document Language in the Language drop-down list near the bottom of the dialog box.



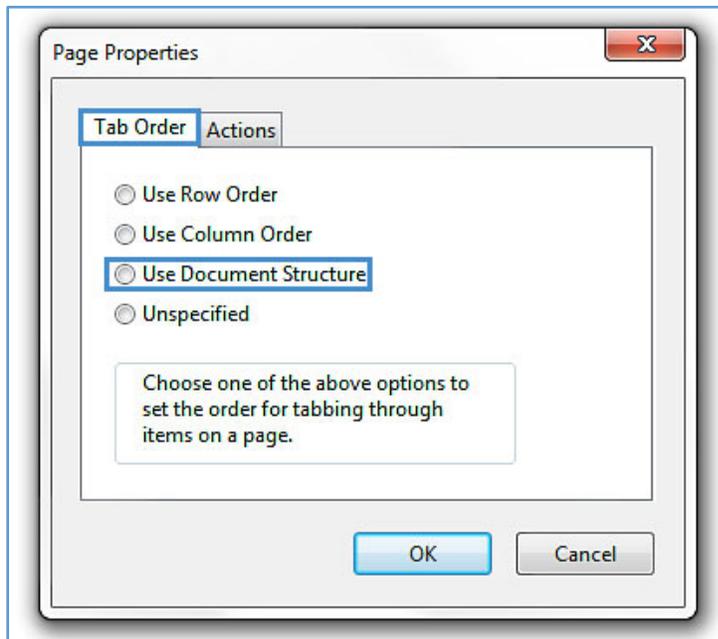
Select Ok & Save file.

## Set Page Structure to Document Structure

1. Select all the pages in the page Thumbnails Panel
2. Select Page Properties (right-click)



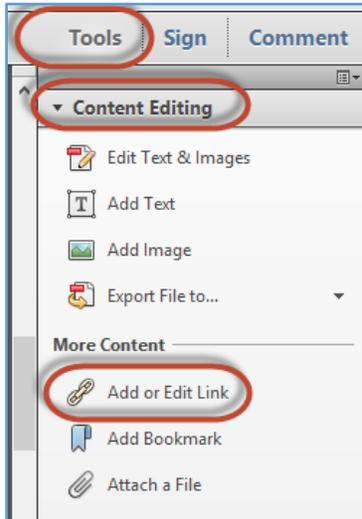
## Under Tab Order select Use Document Structure



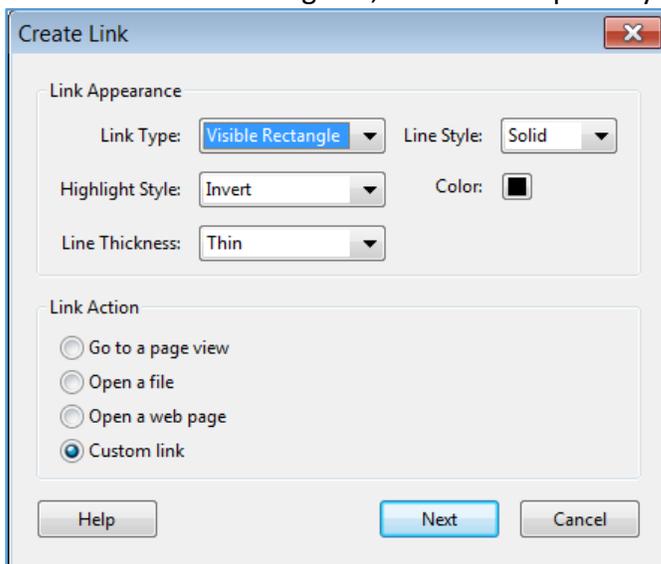
3. Select OK

## Creating Accessible Links

1. Locate an area of a page where you want to add a link then select Tools > Content Editing > Add or Edit Link.



2. The pointer becomes a cross hair, and any existing links in the document, including invisible links, are temporarily visible.
3. Drag a rectangle where you want to create a link. This is the area in which the link is active.
4. In the Create Link dialog box, choose the options you want for the link appearance.



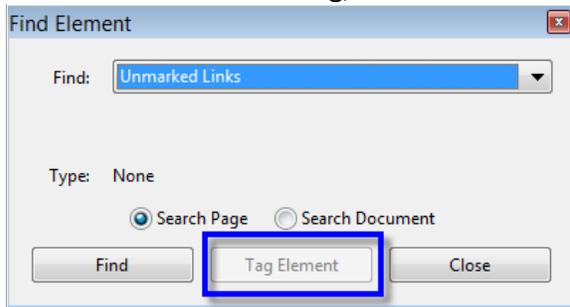
5. Choose an action that the link will perform:
  - *Go to a Page View*: This option is the default, where you can scroll to the page that is the destination of the link.
  - *Open a File*: Alternatively, you can choose to link to another file; click the Browse button to locate the file.
  - *Open a Web Page*: If you choose this option, you're choosing to link to a web address. In the Address text box, enter the complete address of the web site to which the link should direct viewers. To create a link to an e-mail address, type mailto: followed by an e-mail address. (Note that mailto: is all one word.)

- *Custom Link*: Use this option to choose from other types of links in the Link Properties dialog box.

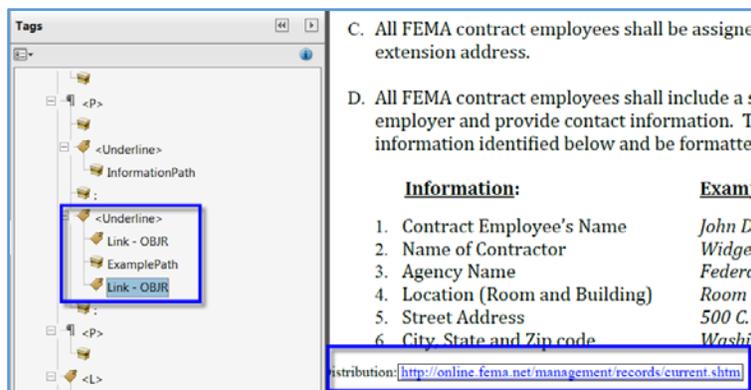
6. Select Next button and follow the instructions in the next dialog box before clicking OK.

### To add the Link-OBJR tag to a link for keyboard accessibility:

1. Locate the tag containing the visual link text in the Tags pane. This will allow the tag to be placed in relation to its link text.
2. Activate the Context menu (right-click) of the Link Text tag and select Find...
3. In the Find Element dialog, select Unmarked Links from the Find combo box.



4. Navigate to and activate the Find button.
5. When the link in question is highlighted in the main document by a blue rectangle, navigate to and activate the Tag Element button.
6. Navigate to and activate the Close button.
7. Confirm a Link-OBJR tag has been placed as a sibling tag to the Link Text tag.



## Removing Links

1. Select Tools > Content Editing > Add or Edit Link (which has a chain-link icon).
2. Right click once on the hyperlink that you want to delete.
3. Choose "Edit" drop-down menu, and select the "Delete" option. This will remove the link. The blue border around the link will be deleted.

## Data Tables (Simple or Complex)

Often tables are used in two ways: for layout purposes and to organize and display associated data. The use of layout tables should be limited. Layout tables can cause navigational issues for AT users. Layout tables should not contain data table structure, such as table header (TH) tags, for headers.

There are two types of data tables: simple and complex. Simple data tables have a one-column header to one-row header ratio. Complex data tables have two or more levels of row and/or column headers that must be associated to make sense. The following are some important keys to creating accessible data tables in Adobe Acrobat PDF documents:

- Ensure data tables are formatted using table elements.
- All data tables should use TH tags to identify header cells.
- Define column headers across page breaks.
- Associate table row and column headers with data cells.
- Place content that is in separate rows and columns into separate data cells.
- Merged row and column headers need to have RowSpan or ColSpan defined.

### Table Structure

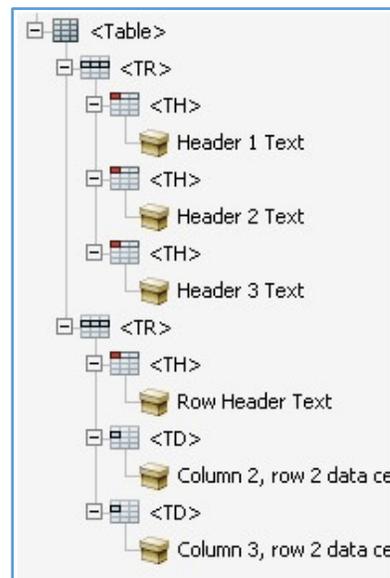
Using the below example of a three-column, two-row table, the structural elements and nesting of tags can demonstrate what the final proper structure of a table needs to appear as in the Tags pane.

Example Table:

| Header 1 Text   | Header 2 Text                  | Header 3 Text                  |
|-----------------|--------------------------------|--------------------------------|
| Row Header Text | Column 2, row 2 data cell text | Column 3, row 2 data cell text |

Example tag structure:

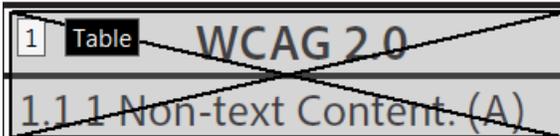
- <Table> - Element definition, a table.
  - <TR> - Table Row
    - <TH> - Defines a table header cell
      - Header 1 text
    - <TH> - Defines second column header cell
      - Header 2 text
    - <TH> - Defines third column header cell
      - Header 3 text
  - <TR> - Table Row
    - <TH> - Defines the row header cell
      - Row header text
    - <TD> - Defines a table data cell
      - Column 2, row 2 data cell text
    - <TD> - Defines a table data cell
      - Column 3, row 2 data cell text



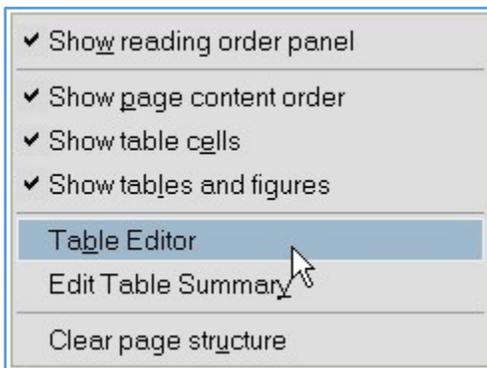
For simple data tables where there is a one-to-one relationship between a data cell and a row/column header, the Scope attribute can be used to associate the header with the cell. This tells a screen reader that it is to associate row/column headers with the cells in that row/column.

### Recommended Approach: Using the Table Editor:

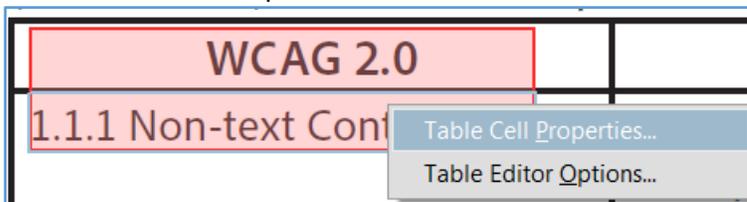
1. Activate the TouchUp Reading Order tool under Accessibility in the Tools pane.
2. Highlight the table and select the Table option in TouchUp Reading Order Tool.
3. Activate (right-click) the Context menu on the newly tagged Table.



4. Select Table Editor.

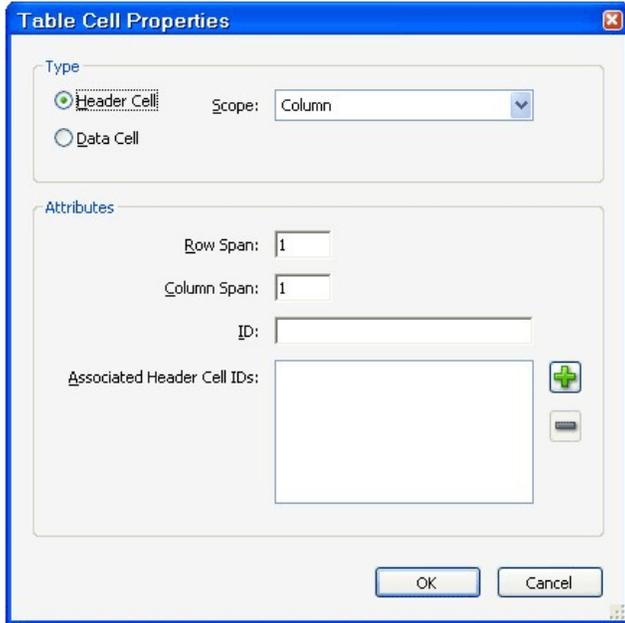


5. Activate (right-click) the Context menu on the table header cell that needs to be marked as a header.
6. Select Table Cell Properties.



7. Confirm the Table Cell Properties dialog appears.

8. Select the Header Cell radio button under Type in the dialog.



9. Select the appropriate Scope - Row, Column or Both from the Scope combo box.
10. Navigate to and activate the OK button.
11. Repeat the process for each row and column header.

### Complex Data Tables

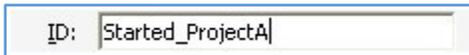
The table below is a complex table listing employees and their status on projects. The table is a good example of complexity because the project titles are merged cells, with status definitions under each. Each employee’s status on a project is related to “Started” or “Completed” and the project title.

| Employee       | Project A |           | Project B |           | Project C |           |
|----------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                | Started   | Completed | Started   | Completed | Started   | Completed |
| <b>Maria</b>   | Yes       | Yes       | Yes       | No        | No        | N/A       |
| <b>John</b>    | No        | N/A       | Yes       | Yes       | Yes       | No        |
| <b>Jessica</b> | Yes       | No        | No        | N/A       | No        | N/A       |

Complex tables, such as the one above, need ID and Header arrays to associate data cells with headers. Each header (TH) will be assigned a unique ID and each data cell (TD) will have an array that includes all of the ID values of the applicable header cells. There are two methods to properly associate the cells: using the Table Editor features (recommended) or editing the properties of each cell through the Tags pane. The steps for both methods are explained below:

### Setting the ID using the Table Editor:

1. Activate the TouchUp Reading Order tool under Accessibility in the Tools pane.
2. Activate (right-click) the Context menu of the table.
3. Select Table Editor.
4. Select the table header cell to mark as a header and activate the Context menu.
5. Choose Table Cell Properties...
6. Ensure the Header Cell radio button is selected.
7. Select Row, Column, or Both from the Scope combo box.
8. Adjust the values in the Row Span and Column Span edit boxes as necessary.
9. Enter a unique value in the ID field that identifies this header cell.

A screenshot of a text input field with the label "ID:" and the text "Started\_ProjectA" entered. The field is highlighted with a blue border.

**Note:** The value entered is not what will be read to the assistive technology user. It is basically a behind the scenes code name for the visually displayed content. The trick is to remember the unique value so that it can be associated with the correct content in later steps.

10. Activate the OK button.
11. Repeat for each table header cell.

### Setting the Headers Array for each Data Cell:

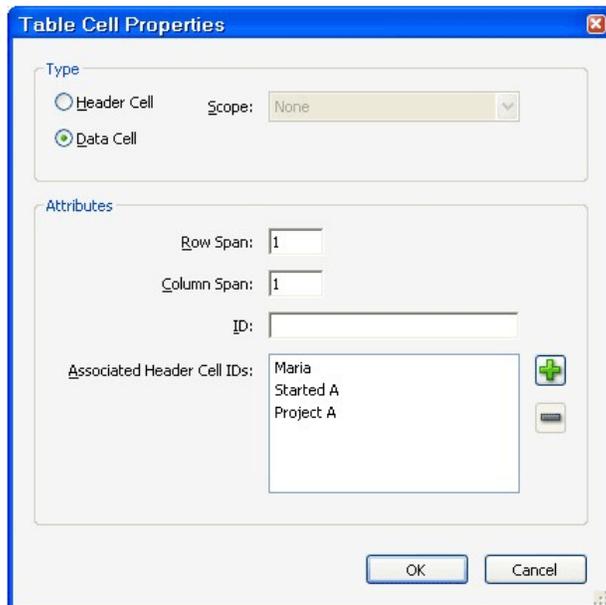
1. Activate the TouchUp Reading Order tool under Accessibility in the Tools pane.
2. Activate (right-click) the Context menu of the table.
3. Select Table Editor.
4. Activate (right-click) the Context menu of a data cell.
5. Select Table Cell Properties...
6. Ensure the Data Cell radio button is selected in the Table Cell Properties dialog.
7. Adjust the values in the Row Span and Column Span edit boxes as necessary.
8. Navigate to and activate the Add button  for the Associated Header Cell IDs" list box.
9. Select the matching header cell ID from the Header ID: combo box in the Add Table Header ID dialog.

A screenshot of a dialog box titled "Add Table Header ID". It contains a "Header ID:" label and a dropdown menu with "Started A" selected. Below the dropdown are "OK" and "Cancel" buttons.

**IMPORTANT:** Select the header IDs in such a manner that the order in the list box from top to bottom will be the reverse order in which the headers should be read. Using the example table above, the visually implied reading order of the headers for the first data cell would be Project A, Started, Maria; therefore, the first item in the list box needs to be Maria.

10. Navigate to and activate the OK button.

11. Add additional header attributes, as needed, for each cell that has multiple headers.
12. When all header IDs have been added, all associated row and column headers should be listed in the Associated Header IDs list box.



13. When finished, navigate to and activate the OK button of the Table Cell Properties dialog.
14. Repeat the steps above for each table data cell.

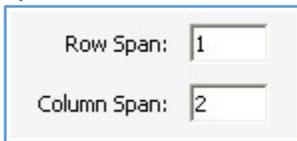
## Spanned Cells

It is crucial that spanned table headers and data cells have the appropriate ColSpan or RowSpan attributes applied for screen readers to properly interpret the information. Setting the proper value for ColSpan and/or RowSpan for header content that spans across multiple columns or rows allows AT to identify the correct header name to the user.

## Updating Row Span and Column Span through the Table Editor:

1. Activate the TouchUp Reading Order tool under Accessibility in the Tools pane.
2. Activate (right-click) the Context menu of the table.
3. Select Table Editor.
4. Activate (right-click) the Context menu.
5. Choose Table Cell Properties...
6. Ensure the Header Cell radio button is selected.
7. Ensure the proper value is selected in the Scope: combo box, either Row, Column or Both.
8. Adjust the values in the Row Span or Column Span edit boxes as necessary. The value in the edit field needs to equal the number of columns or rows that the text and cell boundaries spread across. In the example table used in the Complex Tables section, Project A spans two columns (Started and Completed); therefore, the value in the Col

Span edit field for the Project A cell would be 2.



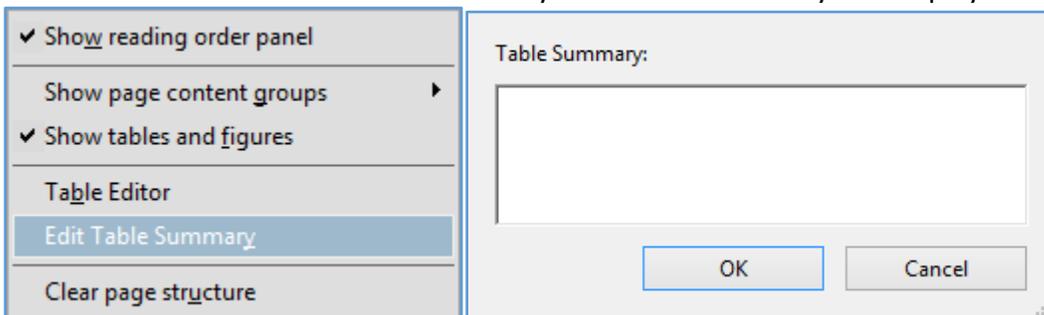
A screenshot of a dialog box with two input fields. The first field is labeled "Row Span:" and contains the number "1". The second field is labeled "Column Span:" and contains the number "2".

9. Navigate to and activate the OK button.
10. Repeat for each spanned table cell.

### Adding a Table Summary

A table summary is optional and can improve accessibility by providing the user with a very brief overview of what information is to follow in the data table. It is not necessary to repeat the actual data in the table summary; rather, it is a brief synopsis that contains a summary of the way the table is laid out to give the user a preview of what information the table communicates. The table summary is not viewable in the PDF document, but is designed to be spoken to an individual using assistive computer technology. To create a table summary:

1. Select the TouchUp Reading Order Tool
2. Locate the table and right click on the item block (table)
3. From the menu select Edit Table Summary. The Table Summary box displays.

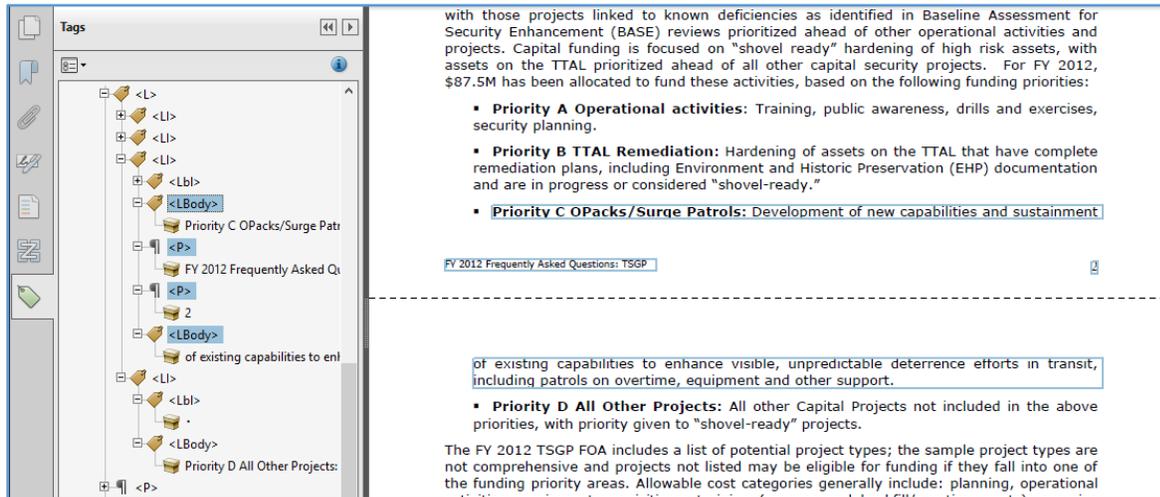


A screenshot of a software interface. On the left is a vertical menu with several options: "Show reading order panel" (checked), "Show page content groups" (with a right-pointing arrow), "Show tables and figures" (checked), "Table Editor", "Edit Table Summary" (highlighted in blue), and "Clear page structure". To the right of the menu is a dialog box titled "Table Summary:". It contains a large empty text area for input and two buttons at the bottom: "OK" and "Cancel".

4. In the Table Summary box type a description of the table
5. Click the OK button.

## Headers and Footers

Headers and footers contain important pieces of information that need to be readable by all users. However, when users of screen reading technology hear this content, it can be confusing to discern which information is part of the main page content versus which information is part of the header and footer information.



The example above shows how, depending on the context of the content, it could be confusing to understand the point being conveyed by the information. The image shows a document that has a sentence that breaks across pages.

The page content shown improperly reads "...Development of new capabilities and sustainment FY 2012 Frequently Asked Questions: TSGP 2 of existing capabilities to enhance visible....." The correct information and intention of the sentence is misconstrued when read in that order.

The sentence should read ".....Development of new capabilities and sustainment of existing capabilities to enhance visible....." Therefore, repetitive header/footer content needs to be made an artifact.

Repetitive header/footer content, for example, the repeated company name on each page, needs to be tagged only on the first page.

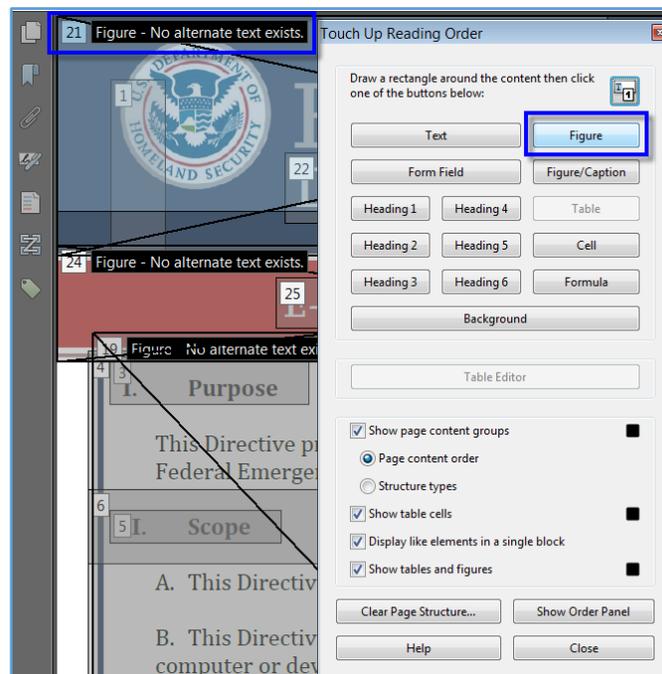
It is recommended to leave the content visually on the page, but to tag the repeated content as an artifact. For unique content such as notes, footnotes, remarks, etc., the content needs to be placed appropriately in the reading order.

## Adding Alternative Text to Figures (Images)

A figure is an image. This might be a drawing, a photograph, a screen shot or a graphic chart such as a pie chart or bar graph. Sometimes the figure is important and other times it doesn't add anything to the document. For instance a drawing of a bowl of flowers usually will not be important and will not need to be tagged as an image (although it will need to be tagged as an artifact or background). You'll need to make the decision as to whether or not the image is important. Most of the time, when you add tags to a document, or when they are tagged from another source such as Microsoft Word, the images will already be tagged as figures. In this case, all you'll need to do is add alternative text.

To tag content as a figure:

- Open the Touch-Up Reading Order Panel - Tools> Accessibility> TouchUp Reading Order
- Draw a rectangle around the content you want tagged as a figure.
- Then in the Touch-Up Reading Order Panel, select "Figure".
- If the content is a figure with associated text, you can click "Figure/Caption" and the text will be given the caption tag within the figure tag.



TouchUp Reading Order Tool showing Figure option

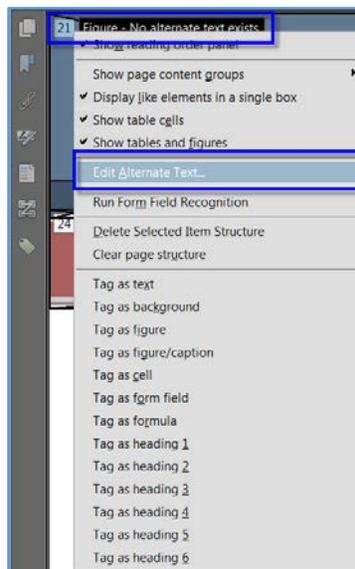
After tagging the content as a figure you'll need to add alternative text for users who are not able to see the image/graphic. Describe the image as if you were talking to someone on the phone and had to describe an image to them and they did not have a copy in front of them. Charts and graphs will have to be described in detail and objectively.

Alternative text for the FEMA figure above could be:

“U.S. Department of Homeland Security Seal, Federal Emergency Management Agency Logo.



Usually if you double-click on the image you'll see an option in the pop-up menu that says “Edit Alternate Text” or you can select the number associated with the Figure (in the top left hand corner) and then right-click to open the context menu – select “Edit Alternate Text” option.



A small text box will open up and you can type or paste your alternate text into the box. There is no character limit when adding alt text. Click OK after adding the alternate text.



A much more difficult alternate text to write is when you're writing alternate text for a chart or graph. Unless the chart or graph is thoroughly described in the text of the document, you must write very descriptive alternate text for the figure/image.

An example of line graph whose alternate text could be:

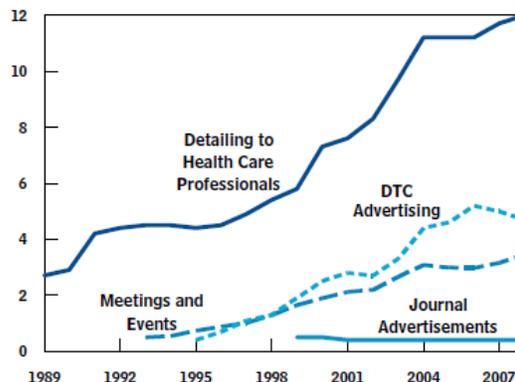
"A line chart titled Figure 1 Promotional Spending by Type of Marketing Activity, 1989 to 2008. Along its horizontal axis are years running from 1989 to 2007 in increments of 3 years. Along its vertical axis are numbers 0 through 12 indicating billions of dollars. The line labeled Detailing Health Care Professionals steadily rises from 2.8 billion in 1987 to 12 billion in 2007 with a plateau between 1992 – 1995 & 2002 & 2004. The line labeled Meetings and events steadily rises from 0.7 billion in 1993 to 2.8 billion in 2008. The line labeled DTC (direct to consumer) advertising starts at 0.5 billion in 1995 and generally rises with to 4 billion in 2006 but falls to 3.8 billion by 2008".

While it seems long for alternate text, there is no other way to describe an important image in an extant PDF file. Please note that the text below the file is assumed to be in text format, so does not need to be in the alternate text. If it were part of the photo it would need to be included as alternate text.

**Figure 1.**

### Promotional Spending by Type of Marketing Activity, 1989 to 2008

(Billions of dollars)



Source: Congressional Budget Office based on data from SDI Promotional Audits.

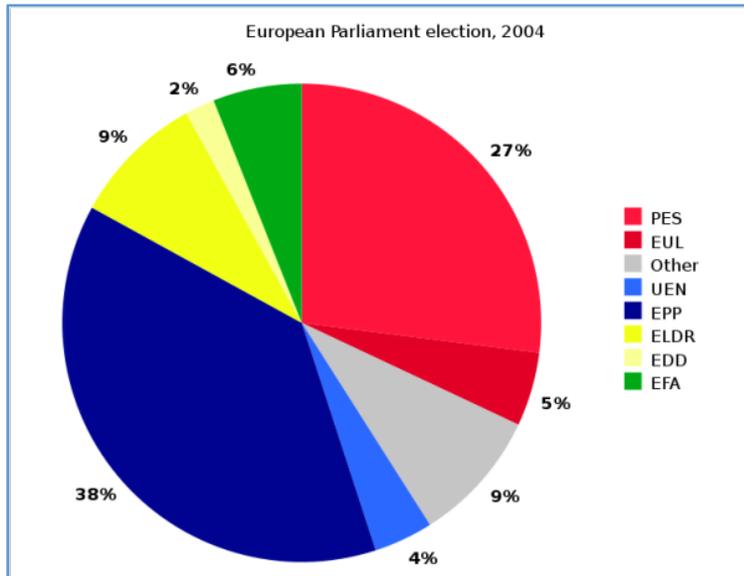
Notes: The starting date for each type of marketing reflects the date at which SDI began including the series in its collection of data.

Detailing refers to the practice in which pharmaceutical representatives make sales calls to physicians and other health care professionals to discuss the uses of a particular prescription drug and its benefits for patients.

DTC = direct to consumer.

Below is a pie chart whose alternate text could be:

“A pie chart titled European Parliament election, 2004 and divided into 8 wedges. Clockwise from the top of the chart the wedges and their percentages are PES 27%, EUL 5%, Other 9%, UEN 4%, EPP 38%, ELDR 9%, EDD 2%, EFA 6%”.



Pie chart of the European Parliament election, 2004

## Hide or “Artifact” Non-Meaningful Content

Creating artifacts in Acrobat can be crucial to the accessibility of a PDF document. There are times when content on a page is used to visually cause an effect (separation, borders, decoration, etc.). However, when these items are exposed through the tag structure to assistive technology (AT) users, it can be quite disruptive. Hiding or changing content to be an artifact (the term used within Adobe Acrobat) can help ensure that only meaningful content is detected by assistive technology.

Examples of content that should become artifacts are:

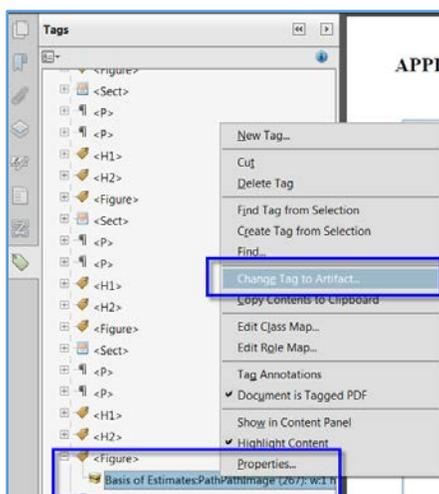
- Unmarked content
- Drawing remnants
- Decorative images
- Redundant and duplicate information repeated on every page, such as header or footer content, line spacers and other content that is meant to be visually appealing, but not to provide pertinent information.
- Any tagged content that is not tagged as an artifact will be identified by assistive technology.

### Creating an Artifact

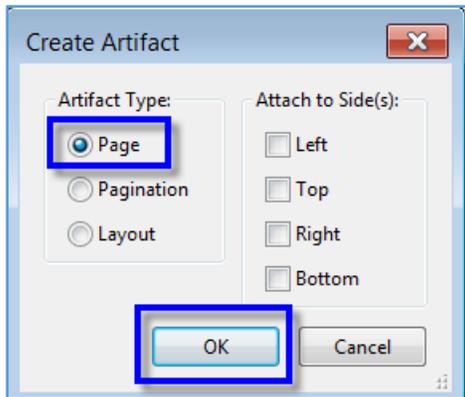
There are two ways to artifact or hide content from screen readers.

**Recommended Approach:** Change the content to an artifact through the Context menu options of a particular tag in the Tags Tree.

1. Find the content in the Tags Tree that needs to be hidden.
2. Activate the Context menu (right-click) of that specific tag.
3. Select Change Tag to Artifact... from the menu options.



4. Select the OK button in the Create Artifact dialog.

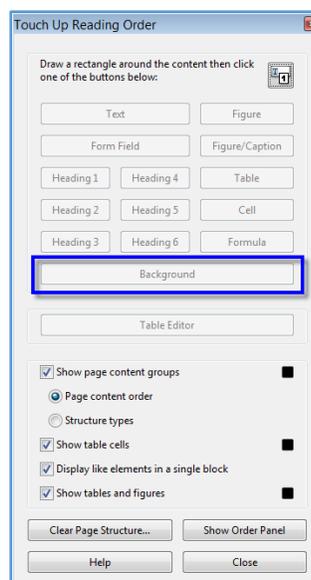


5. Repeat steps 1 through 4 as many times as necessary.

Check that the text and/or remnants are not present in the document by highlighting the content in the main document and selecting <Find Tag from Selection> on the Context menu of any tag in the Tags tree. A dialog box should pop up stating that the selection was not found. Alternatively, a screen reader can be used to read through that section of the document to ensure the content is hidden.

The second method to hide or artifact content is to use the TouchUp Reading Order tool.

1. Select the content in the main document that needs to be hidden from ATs.
2. Activate TouchUp Reading Order tool; select Tools from the right-hand menu, then select Accessibility > TouchUp Reading Order.
3. In the TouchUp Reading Order dialog, activate the Background button.
4. Repeat steps 1 through 3 as many times as necessary.



## Color Dependence

Determine if color is used as the only means to convey pertinent information. In instances where color-only is used, text also needs to be provided that describes the information being presented in color. For example, the words High = Green, Medium = Yellow and Low = Red need to be provided to convey the threat level.

In the table below, the DC WMATA Metro has identified their stations with the colors red, orange, blue and yellow circles to represent the metro lines available in Washington DC.

| Station      | Line  | 2005 | 2006 | 2007 |
|--------------|---|------|------|------|
| Metro Center |  | 1700 | 1800 | 2000 |
| Pentagon     |  | 600  | 700  | 1000 |
| Bethesda     |  | 255  | 270  | 3011 |

### Metro Table Showing Metro Lines Using Color Alone

The Legend below shows the words to indicate what each color graphic means. This ensures everyone knows the information that is being conveyed and it is accessible for users who are not able to see.

**Legend** - Graphics such as the colored circles represent the Metro lines available at each station.

-  Red Line · Glenmont to Shady Grove
-  Orange Line · New Carrollton to Vienna/Fairfax-GMU
-  Blue Line · Franconia-Springfield to Largo Town Center
-  Green Line · Branch Avenue to Greenbelt
-  Yellow Line · Huntington to Fort Totten

Each graphic requires alternative text to be added by right clicking on the image and selecting **Edit Alternative Text**. Please refer to the **“Adding Alternative Text” Resource for more guidance**.

## Accessible Fillable Forms

### Creating a Form

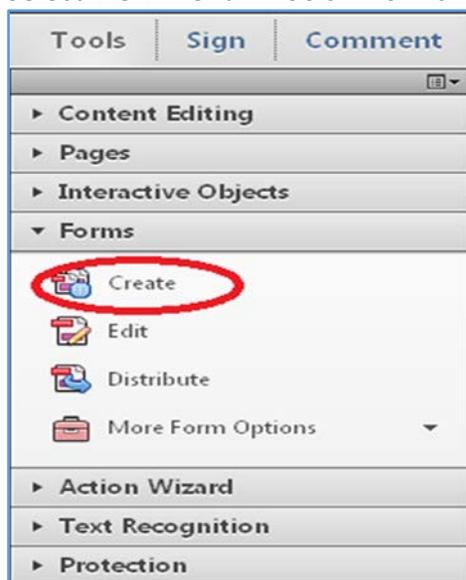
The Form Wizard in Adobe Acrobat XI Pro can be used to create interactive forms from an existing electronic document (for example a Word, PDF, or Excel document) or from a paper form that was placed in a scanner with the resulting image opened in Acrobat. Authors can also create forms manually in Acrobat, or individually add form fields to an existing document using the form tools.

Acrobat's automatic form field detection will attempt to locate any labels that are adjacent to the form field (text, check box, etc.) and use any labels it finds as the source for the accessible label (the form field tooltip in Acrobat).

A form element and form objects for each field will be created in the Tags pane as part of this process. Examine the document carefully to verify that Acrobat accurately detected the fields and labeled them properly. To make an electronic form fillable with the wizard:

1. Display the Forms Pane

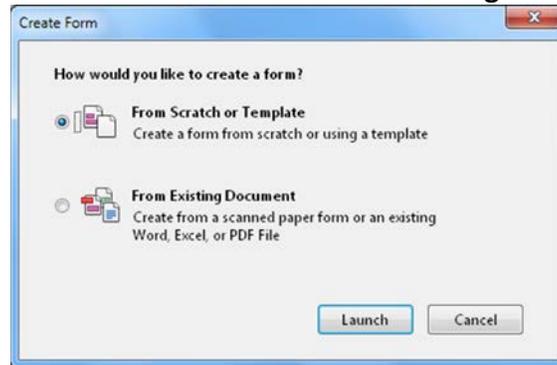
Select View Menu > Tools > Forms



Create Form Command in the Forms Task Pane

2. Select the Create command
3. The Create Form dialog is displayed

## Acrobat XI Pro Create Form Dialog



From the Create Form Dialog, select one of the following options and then follow the on-screen instructions:

### **Use an Existing File**

*This option converts an existing electronic document (for example Word or PDF) to an interactive PDF form. To use the document that is currently on display, select "Next" and the "Use the current document" option. Select "Next" again. Acrobat automatically searches for and creates any form fields it detects, and places the document in Form Editing Mode.*

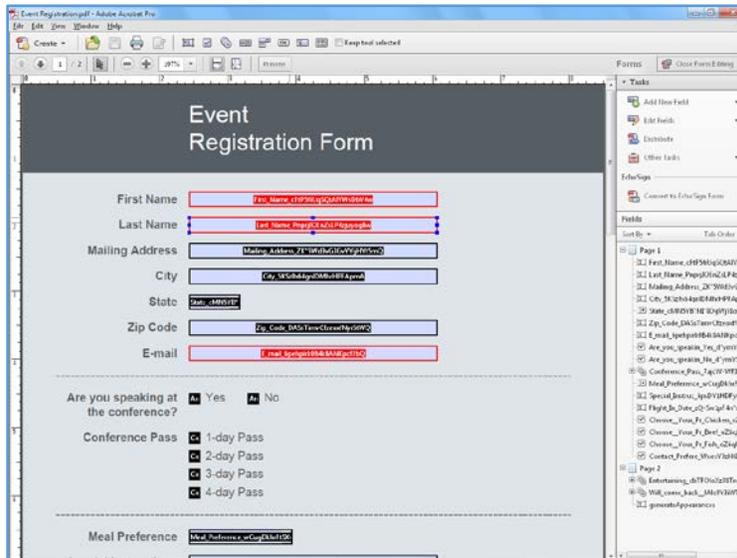
### **Scan a Paper Form**

*This scans a paper form and converts it to a PDF form. The form will be scanned, converted to PDF and Acrobat will search for and create any form fields it detects. The form is placed in Form Editing Mode*

### **Create a Form from Scratch or Using a Template**

*This creates an Online Form using Adobe FormsCentral. Adobe FormsCentral provides a simple interface to create interactive forms for collecting data online. FormsCentral is not addressed in this document.*

When either the "Use an Existing File" or "Scan a paper form" option is chosen, Acrobat XI Pro analyzes the document, adds any detected form fields, and puts the document in Forms Editing Mode. The document will look similar to what is shown below. From here, you can add, edit or delete the automatically created form fields.



Event Registration Form Image

### Acrobat XI Pro Forms Editing Mode

During form field detection, Acrobat may have missed some fields, or created unnecessary ones. It may also have created fields of the wrong type. Verify the fields and field names on the form. Add New Field on the Forms Editing toolbar can be used to add more fields. You can also right-click on the form to add, edit, or delete fields.

### Creating a Form without the Forms Wizard

Form Editing Mode can also be enabled without using the Form Creation Wizard.

1. Select View Menu > Tools > Forms and select the Edit command under the Forms Tool Pane. The Keyboard shortcut is Shift + Ctrl 7.
2. The Add or Edit Form Fields dialog is displayed if form fields have not been added to this document.



Acrobat XI Pro Add or Edit Form Fields Dialog

Answering “Yes” to the Add or Edit Form Fields dialog question “Do you want Acrobat to detect form fields for you?” causes the automatic detection of form fields prior to placing the document in Form Editing Mode. This is the same as running the Form Wizard.

Acrobat will analyze the document, add detected form fields and put the PDF form in Forms Editing Mode. From there, you can edit the automatically created fields or add new ones.

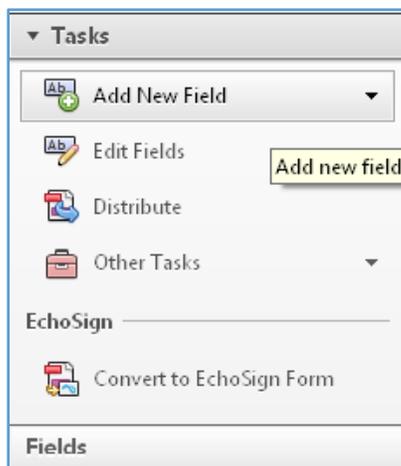
Answering “No” to the Add or Edit Form Fields dialog question “Do you want Acrobat to detect form fields for you?” also places the document in Form Editing mode, but does not create form fields automatically. Form fields will have to be added manually.

## Creating Form Fields Manually

If you answer “No” to “Do you want Acrobat to detect Form Fields for you?” the document enters Forms Editing Mode without automatically creating any fields.

To add new form fields to the PDF, select one of the options from the Add New Field drop-down menu that presents the eight possible Acrobat field types.

To add the fields to your form document:



- Select “Add New Field” under the task pane.
- Or click on the type of form field you want to add from the **Forms Toolbar**
- Bring your cursor to where on the document you want the field to appear
- Click to place the form field or drag to “draw” the field on your document
- Or
- When you are done a new **Field Name** dialog box opens

Each field needs to be named descriptively and uniquely. The field name pop up box allows you to name the field and **Show All Properties** if you want to add or change other field properties.

## Forms Editing Mode

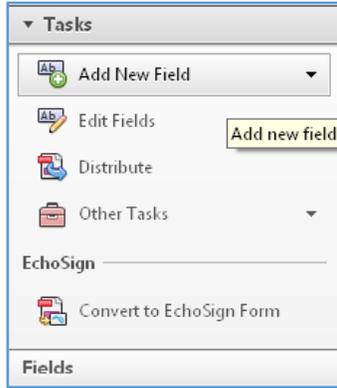
In Forms Editing Mode, you can add, edit or delete any existing form object. The Acrobat XI user interface changes when in Forms Editing Mode. The Forms Editing Toolbar appears and provides access to the Select Object tool, the Add New Field buttons for each field type, and the Form Preview button. On the right hand side of the Forms Editing Toolbar, beneath the Tasks pane, the Add New Field, Distribute, Track, and Other Tasks commands are displayed. The Fields pane shows any interactive fields that are currently part of the form. You can exit this mode by selecting the Close Forms Editing button above the Tasks pane.

## Selecting a New Form Field to Create

In Acrobat XI Pro, a form field can be created by choosing one of the form tools. For each field type, it is possible to set a variety of options through the form field Properties dialog box.

The forms tools can be accessed in one of three ways:

1. Select “Add New Field” under the task pane.



Acrobat XI Add New Field Command

2. Select one of the commands from the Forms toolbar that appears below the Acrobat XI Pro menu bar.



Forms Toolbar in Acrobat XI Pro Menu Bar

3. Right click over the form to add new fields.



Adobe Acrobat XI Right Click Forms Dialog

PDF form created with Adobe Acrobat XI Pro’s forms editing tools can contain the following types of fields:

| Field type                 | Description   |
|----------------------------|---|
| A. Text field              | Allows the user to type in text, such as name, address, or phone number.  |
| B. Check box               | Presents yes-or-no choices for individual items. If the form contains multiple check boxes, the user can typically select as many or few of these as needed.  |
| C. Radio button            | Presents a group of choices from which the user can select only one item from the group. All radio buttons with the same name work together as a group.   |
| D. List box                | Displays a list of options the user can select. List boxes have a field property that lets the user Shift-click or Control-click to select multiple items on the list.  |
| E. Combo box               | Allows the user either choose an item from a pop-up menu or type in a value.  |
| F. Button                  | Initiates a change on the user's computer, such as opening a file, playing a sound, or submitting data to a web server. These buttons can be customized with images, text, and visual changes triggered by mouse actions. Action buttons are different from radio buttons, which represent data choices made by the user. |
| G. Digital signature field | Allows the user to electronically sign a PDF document with a digital signature.   |
| H. Barcode                 | Encodes the input form selected fields and displays it as a visual pattern that can be interpreted by decoding software or hardware (available separately).   |
| I. Keep tool selected      | Allows you to create multiples of the same field type   |

### Positioning and Naming the New Form Field

Once a form tool has been selected, a crosshair cursor appears, and a blue region defines the outline of the form object selected for placement.

- On the page, click where the field is to be added. A field with a default size. To create a field using a custom size, drag a rectangle to set the dimensions of the field.
- In the Field Name box, type the name of the field. Select a name that is relevant and descriptive to make organizing and collecting the data easier. This name is not shown to users of the form.

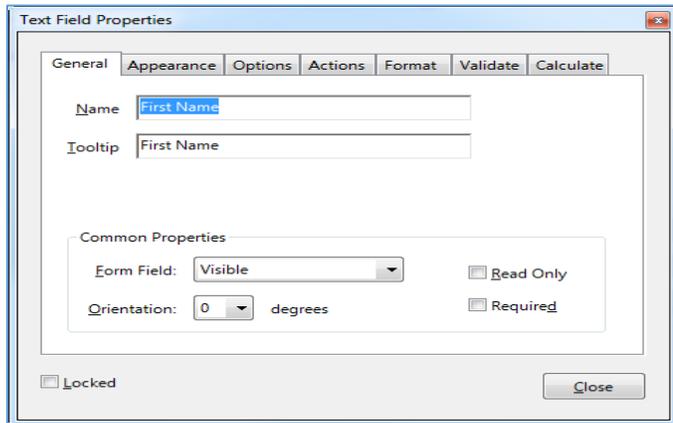
The image shows a form design interface with three fields: 'First Name', 'Last Name', and 'Mailing Address'. Each field has a yellow 'Field Name' box next to it. The 'First Name' field has a blue box containing the text 'First Name' and a red box containing a long alphanumeric string 'c1tP5iiUqSQaAYW4DbV4w'. The 'Last Name' field has a blue box containing 'Last Name' and a red box containing 'yog8w'. The 'Mailing Address' field has a blue box containing 'Mailing Address', a yellow box with a checked 'Required field' checkbox, a blue box with the text 'All Properties', and a red box containing 'YjH4T5mQ'.

Field Name Box

To test the form, select the Preview button at the top of the document window. Preview lets you view a form the way a form recipient would, and gives the author a chance to verify the appearance and behavior of the form. If a form is being previewed, click the Edit Layout button to return to Forms Editing Mode.

Next, set the accessible name for the field. This is how the field will be announced by assistive technology. Other properties such as required field notation can also be set here.

## Form Field Properties



The dialog boxes for the field properties are content sensitive, so different boxes will be available or offer different options depending on the field you have chosen to add. Field Properties box offers different tabs to choose from offering different design attributes.

How a form field behaves is determined by settings in the Properties dialog box for that individual field. Properties can be set that apply formatting, determine how the form field information relates to other form fields, and impose limitations on what the user can enter in the form field, trigger custom scripts, and so forth.

To modify a field's properties, right-click it (or select and then press the Application key).

A variety of properties can be set for an Acrobat form field, depending on the form field type. The properties for each type of form field are selected on a series of tabs. When a property is changed, it is applied as soon as another property is selected or when Enter is pressed.

All form field types have a General tab, Appearance tab, and an Actions tab. Other tabs appear only in specific types of form fields. The Options tab appears for most form field types, but the options available are unique to each type of form field. You can leave the Properties dialog box open if you want to change multiple fields at once.

## Setting Tooltips for Form Fields

The tooltip field on the General tab of the field properties dialog is the most important item for form fields. The content of the tooltip will be announced by screen readers as the accessible name of the field. This property provides the user with information and instructions about the field.

Tooltips should be short and descriptive and should not include the type of field or text such as “Click to enter”. For example, “First Name” would be a good tooltip for a first name field and “Sign-up Date (2 digit month / 2 digit day / 4 digit year) would be a good name for a “Sign up date” field that had a required field format. The City field for a group of shipping field would need to include the group name as well as the on-screen label, “Ship to City” or “Shipping Address City”.

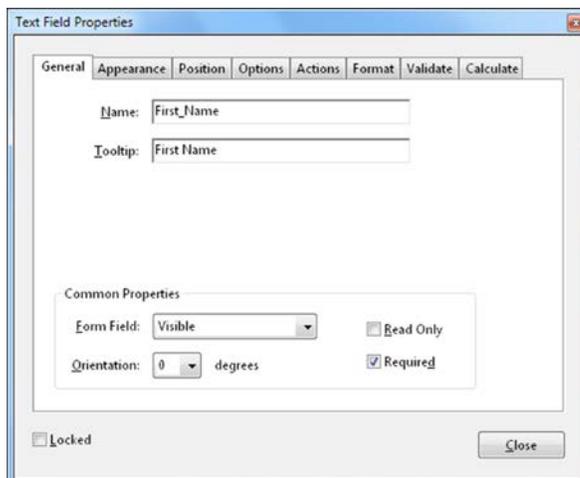
Note: The tooltip also displays text that users may find helpful in filling in the form field. Tooltips appear when the pointer hovers briefly over the form field.

To set the tooltip property of a form field:

1. Ensure Forms mode is active > **Activate Forms Tool > Edit**
2. Ensure that the Select Object tool is selected from the toolbar

Open the field properties dialog. Double-click a selected form field; or Right click or select and press the applications key and select properties; or Select the desired field and press the shortcut keystroke (Control + I).

Enter a short and concise label into the tooltip field. **The tooltip should provide any group label for a group of fields along with the field’s label (refer to the special instructions for radio button groups in the next section Tooltips for Radio Buttons).**



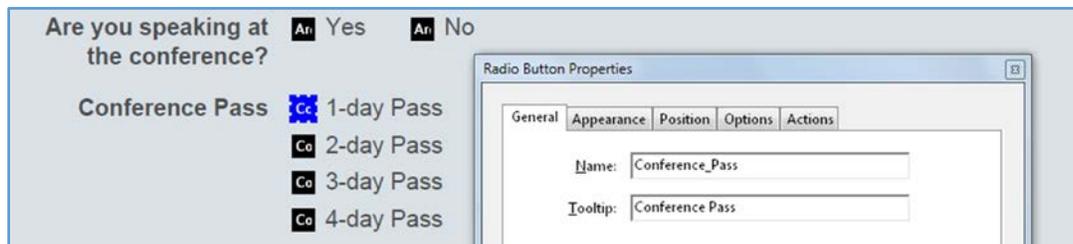
Adding a Tooltip to a Form Field

## Tooltips for Radio Buttons

To create a radio button group, where only one field can be selected at a time, assign each field the same name and the same tooltip, but provide different Button Choices (values). The radio button choice is a field in the Options tab of the Radio Button Properties dialog. The tooltip and button value will be announced to users of assistive technology for each radio button.

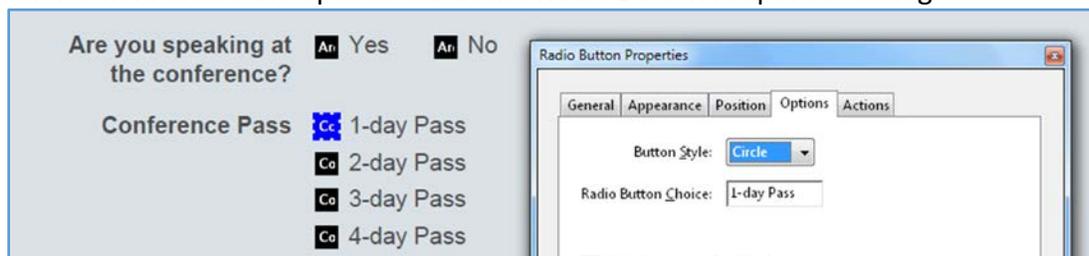
When the same radio button name is assigned to a radio button, the tooltip field should automatically be populated with the tooltip text from the other radio buttons in the group. (Refer to “Figure 10. Identical Name and Tool Tip Value for a Radio Button Group” on page 10).

For example, create a radio button group that asks the question, “Conference Pass”. Create four radio buttons. For each button, choose to give the button the identical name, “Conference Pass.” For each radio button, the identical text appears in the Tooltip field, such as “Conference Pass”.



## Setting Identical Name and Tool Tip Value for a Radio Button Group

For the button next to the label indicating “1-day Pass”, enter “1-day Pass” in the Radio Button Choice field under the options tab in the Radio Button Properties dialog.



## Editing or Modifying an Existing Form Field

Acrobat form field properties can only be accessed in editing mode (by choosing Forms > Add New Field or Edit Fields). Properties for multiple form fields can be set at once.

- To edit multiple form fields, select the fields to edit.

**Hold down control and click each field to select**

Right-click/Control-click one of the selected fields, and choose Properties.

**Change the properties on each of the available tabs, as needed.** The property is changed as soon as another property is selected or Enter is pressed.

Activate the Close button or press enter to close the Properties dialog box.

If form fields are selected that have different property values, some options in the Properties dialog box are not available. Otherwise, changes to the available options are applied to all selected form fields.

To avoid accidental changes to the form field, select Locked in the lower left corner of the Properties dialog box before it is closed. To unlock, click the check box again.

## Field Actions

There are many different actions that can be associated with a form field. These include actions based on mouse entry, mouse exit, mouse up, mouse down, on focus, and on blur. It is important to note that mouse-only actions will not be keyboard accessible. All functionality must be keyboard-accessible without requiring the use of a mouse. The “on focus” and “on blur” actions are triggered when the field receives or loses focus respectively. These actions should be used with caution. The “on focus” action must not move focus to another field unless the field is not to be used, and these actions must not be used to trap the keyboard focus within certain fields.

The user must be able to navigate past form fields without having the keyboard focus trapped. This is a requirement because many keyboard-only users, including users of assistive technology, use the <Tab> or <Shift + Tab> keystrokes to explore the fields of a form and discover what options are available. For the same reason, the option “Commit value immediately” should be avoided for the dropdown and list fields. Users of assistive technology often use the Up and Down arrows to explore or navigate to items in these fields, so changing values using these keystrokes can prevent them from using the form properly.

## Set the Tab Order

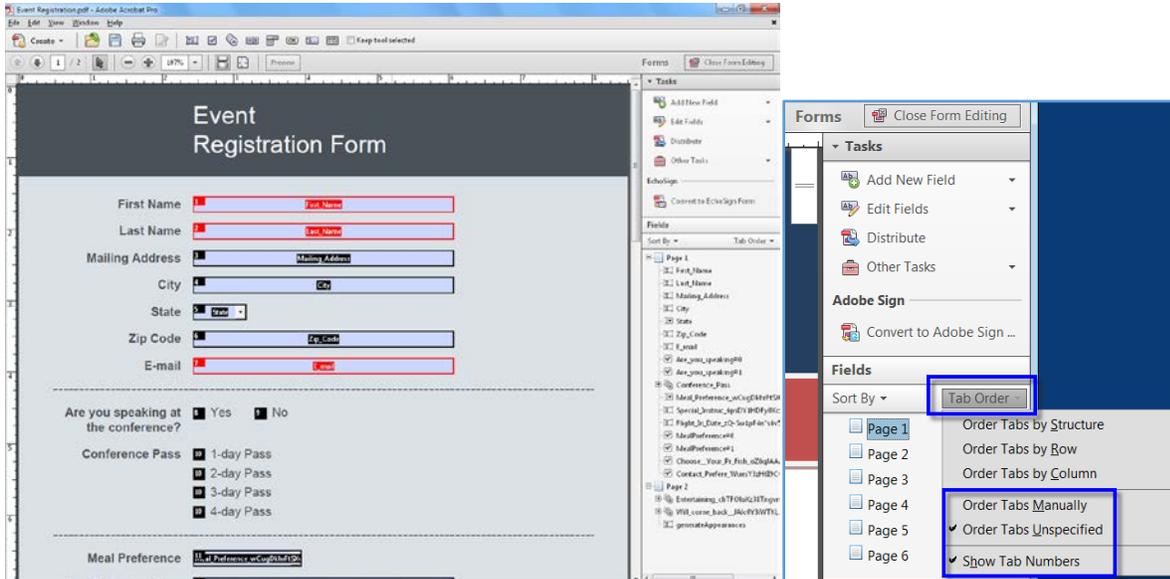
If a PDF document does not have a specified tab order, the default order is based on the document structure, unless the user has deselected the Tab Order option in the Accessibility preferences. The tab order can be changed after the form has been created. It has the following options:

If Forms Editing mode is active, the order can be set to document structure (default), row, or column.

- The order can also be set manually by dragging and dropping fields in the Fields pane.
- If Forms Editing mode is not active, the order can be set in page properties by row or column. However, the tab order cannot be set manually.

To change the tab order, first select “Order Tabs Manually” from the Tab Order button on the Fields pane. Then fields can be dragged and dropped where appropriate within the Fields pane to modify the tab order.

To assist in determining tab order, select “Show Tab Numbers” from the Tab Order button menu of the Fields pane. To see the relationship between items in the Fields pane and the Document pane. Note also the Order Tabs Manually and the Show Tab Numbers options are highlighted.



Rearranging Tab Order with the Fields Pane

### Provide Instructions and Onscreen Labels

It is important to ensure that all form fields have instructions or labels. Form instructions are typically be placed above the form, call out required fields, and provide additional information on completing and submitting the form. Individual form fields typically have labels above or to the left of the form field, with the exception of radio buttons and checkboxes, whose labels should appear to the right of each field. Labels should contain any formatting information, such as value length or date format.

## Table of Contents

Table of content (TOC) structures aid in intra-document navigation and content relation. TOCs have the same basic structure as a list; the main difference is that the tags are defined differently.

### Planning the Structure of TOCs

Table of contents items need to be structured with <TOCI> tags nested under a parent <TOC> tag. Beneath the <TOCI> tag the item description, leader and page number need to be present.

It is recommended that lengthy documents (20 or more pages) contain a linked table of contents. For linked TOCs, each table of content item (TOCI) needs to contain:

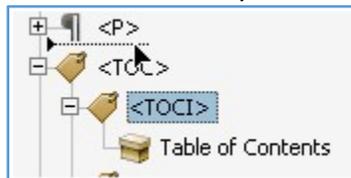
1. A <Reference> tag.
2. A <Link> tag needs to be placed as a child element under the <Reference> tag so that the item is associated to a content type.
3. Underneath the <Link> tag the item description, leader, page number.
4. Link - OBJR tag (which allows for keyboard accessibility) need to be present.

To organize the content in the Tag Tree, each segment of the <TOCI> should be separated into its own tag. The segments can be created by highlighting the desired text in the document and selecting Create Tag from Selection on the Context menu of the tag (right-click) in the Tags pane directly above where the tag is to be placed.

### Ensure Table of Contents Lists are Structured Properly

Creating a table of content structure is very similar to creating a list structure. For the purposes of this tutorial, focus will be on creating a linked table of contents. Below are the steps to create a TOC structure in the Tags pane.

1. If there is a heading, such as Table of Contents above the TOC items, select it in the main document.
  - In the Tags pane, activate (right-click) the Context menu of any tag and select Find Tag from Selection.
  - The heading may be contained within part of the TOC structure. If it is, it needs to be moved above the parent <TOC> tag and defined as a heading.

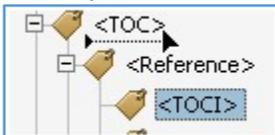


- Change the <TOCI> tag to a heading by activating (right-click) the Context menu of the tag and navigating to Properties. In the Type combo box on the Tag tab, select an appropriate heading level and then close the dialog.
2. If there is no heading above the content items, select the first list item that is part of the TOC in the main document.

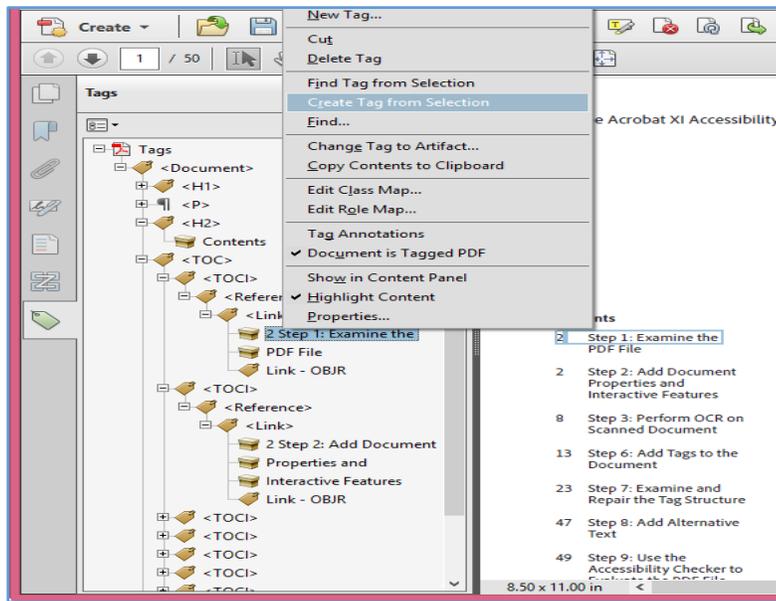
3. In the Tags pane, activate (right-click) the Context menu of any tag and select Find Tag from Selection.
4. Locate the highlighted tag in the Tags pane and identify whether the content is already encased in a TOC structure by locating a <TOC> tag with <TOCI> tags nested below it.

If a TOC structure is found, it will likely need some remediation efforts. For example, one possible structure found after conversion from an authoring tool presents a <TOC> tag with a nested <TOCI> tag, a further nested <Reference> tag, the item content, leader and page number contained as one item under the <Reference> tag, and finally a Link-OBJR tag as a sibling tag to the item content tag.

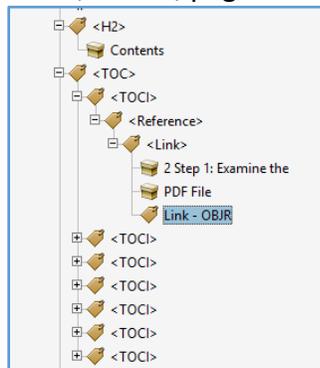
1. To remediate the structure for the first item in the TOC that already has a <TOCI> tag, ensure a <Reference> and <Link> tag are both present as children tags under the <TOCI> tag.
2. If either or both the <Reference> or <Link> tags do not exist, activate the Context menu of one of the tags nested beneath the <TOCI> tag (such as the content item tag) and select New Tag...
3. In the New Tag dialog, select <Reference> or <Link> from the Type combo box.
4. Navigate to and activate the OK button.
5. Repeat the above steps to add another tag if necessary.
6. Verify all the pieces are available to start organizing the structure of a content item. A <TOC>, <TOCI>, <Reference>, <Link>, content item, and Link-OBJR tags need to be present,
7. If necessary, highlight the <TOCI> and drag it to become a child of the <TOC> tag. An arrow pointing right with a horizontal line to the right side should appear to help identify at which level the tag is being placed.



8. If necessary, highlight the <Reference> tag and drag it to become a child of the <TOCI> tag.
9. If necessary, highlight the <Link> tag and drag it to become a child of the <Reference> tag.
10. If necessary, highlight and drag the content item, leader and page number tag(s) to be children of the <Link> tag.
  - If the content item, leader and page number are grouped as one tag, they need to be separated. To separate the pieces into three separate tags, select the content item in the main document.
  - Find the tag containing the content item in the Tags tree and activate the Context menu of the tag (right-click).
  - Select Create Tag from Selection on the Context menu (right-click).



- Verify the content item is contained in an individual tag.
  - It is likely easier to select the page number than the leader. Therefore, the next step is to select the page number in the main document.
  - The page number may not be visible as part of the tag in the tag structure, but find the tag near the content item that was just separated that contains the leader and activate (right-click) the Context menu of the tag. Select Create Tag from Selection on the Context menu.
  - Verify the page number is now contained by itself in a tag. The leader should now also be the only thing in its tag.
  - Arrange the tags in the following order: content item, leader and then page number as children tags under the <Link> tag. This sequence will ensure the content is in the proper reading order.
11. Ensure that the content item, leader and page number are above and a sibling to the Link-OBJR tag. The final structure of the TOCI item should be <TOC>, <TOCI> nested one level, <Reference> nested under TOCI, <Link> nested under <Reference>, and the content item, leader, page number, and Link-OBJR nested under the Link tag.



12. Repeat the steps above to structure the other TOCIs.
13. Verify that all the <TOCI> tags are at the same level (siblings) in the tag structure.

To properly structure a non-linked table of contents <Reference>, <Link> and Link-OBJR tags need to be omitted from the tag structure. The structure needs to be <TOC>, nested <TOCI> and beneath the <TOCI> nest the contents item as <TOCI\_Title>, leader (i.e "...") as an artifact, and page number as <TOCI\_Page> as individual tags.

The image shows a PDF tag structure on the left and its rendered contents table on the right. The tag structure is as follows:

- <Document>
  - <H1>
  - <P>
  - <H2>
    - Contents
      - <TOC>
        - <TOCI>
          - <TOCI\_Page>
            - 2
          - <TOCI\_Title>
            - Step 1: Examine the PDF File
        - <TOCI>
        - <TOCI>
        - <TOCI>
        - <TOCI>
        - <TOCI>

The rendered contents table on the right is:

| Contents |  |
|----------|--|
| 2        | <a href="#">Step 1: Examine the PDF File</a>                   |
| 2        | Step 2: Add Document Properties and Interactive Features       |
| 8        | Step 3: Perform OCR on Scanned Document                        |
| 13       | Step 6: Add Tags to the Document                               |
| 23       | Step 7: Examine and Repair the Tag Structure                   |
| 47       | Step 8: Add Alternative Text                                   |
| 49       | Step 9: Use the Accessibility Checker to Evaluate the PDF File |



## PDF Resources

- **FEMA Creating Accessible PDF Documents**
  - <https://intranet.fema.net/help/section508/Pages/Creating-Accessible-PDF-Documents.aspx>
- **Emergency Management Institute**
  - <https://training.fema.gov/devres/508.aspx>
- **Accessible Electronic Community of Practice YouTube Channel- Currently only MS Word Documents**
  - [https://www.youtube.com/channel/UC\\_rbJmvIT7j4OEqxF8UpBXA](https://www.youtube.com/channel/UC_rbJmvIT7j4OEqxF8UpBXA)
- **Adobe Accessibility Resource Center**
  - [www.adobe.com/accessibility](http://www.adobe.com/accessibility)
- **Adobe Accessibility Blog**
  - [Blogs.adobe.com/accessibility/](http://blogs.adobe.com/accessibility/)
- **WebAIM PDF Accessibility Page**
  - [www.webaim.org/techniques/acrobat](http://www.webaim.org/techniques/acrobat)
- **Ohio State University Web Accessibility Center's Accessibility and PDF**
  - [www.wac.ohio-state.edu/pdf/](http://www.wac.ohio-state.edu/pdf/)
- **Lynda.com**
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