Quick Reference Guide: Basic PDF Accessibility

Remediation Flow in PDF Documents

If you have access to the source document

1. **Optimize** the original source document for accessibility.
2. Convert the source document to **tagged PDF**.
3. Add **metadata**.
4. Add or touch up the **tags**.
5. Fine tune the **reading order and tab order**.
6. **Check** the accessibility of your efforts.

If you must start with a poorly tagged PDF

1. Add **metadata**.
2. Add or touch up the **tags**.
3. Fine tune the **reading order and tab order**.
4. **Check** the accessibility of your efforts.

If you must start with an untagged PDF

1. Add **metadata**.
2. If the document is very simple, you can **autogenerate tags** in Acrobat Pro.
3. Otherwise, **create the tags manually**.
4. **Touch up** the tags.
5. Fine tune the **reading order and tab order**.
6. **Check** the accessibility of your efforts.

If you must start with a paper or scanned document

1. If necessary, **scan** the document.
2. Apply **optical character recognition (OCR)** to create searchable text.
3. **Follow the steps above** for starting with an untagged PDF.

Before Converting to Tagged PDF

Real, Semantic Elements (in MS Word)

1. Headings should be **real headings** (not just big, bold text). In the Ribbon, go to Home > Styles group > select Heading style.
2. Lists should be **real lists** (not just items with an asterisk). In the Ribbon, go to Home > Paragraph group > select list style.
3. **Real table of contents based on heading structure** should be created. In the Ribbon, go to References > Table of Contents > select style of table.
4. **Real footnotes and endnotes** should be created using the Insertion tool. In the Ribbon, go to References > Insert Footnote or Insert Endnote.
5. **Real columns** should be created, rather than using the tab key. In the Ribbon, go to Layout > Columns > choose number of columns.
6. Tables should be **real tables**. In the Ribbon, go to Insert > Table > select the number of rows/columns needed. Do not use the Draw Table option (it creates accessibility barriers).

Headings

- Headings should be **real, semantic headings**.
- Headings should **start at level 1**.
- Headings should **not skip any levels**.
- Headings should provide a **good, logical outline** of the document's hierarchy.
- Headings should be **accurate, informative, and concise**.

Text

- Fonts should be **easily readable** (standard fonts like Times New Roman and Arial are good choices).
- **Line spacing** should be at least 1.5 within paragraphs.
- **Paragraph spacing** should be at least 1.5 times larger than the line spacing.
- Text should **not be fully justified** (fully justified text contains "rivers of white" space and is harder to read).

Alternate Text

- All meaningful images, graphs & charts, and other non-text content must have **alt text**. (Right click the image > Edit Alt Text > type in the description.)
- The alt text must be **meaningful** (accurately conveys the purpose of the image, graph, etc.) and **complete**.

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Before Converting to Tagged PDF (continued)

Alternate Text (continued)

- The alt text should be **concise**.
- All meaningful non-text content must have a **long description** when needed.

Color Contrast

Text, buttons, icons that convey information, graph and chart components, form field text boxes, and other elements must meet **minimum contrast ratio requirements**. Exceptions include flags, photography, heatmaps, and other situations where changing the colors changes the meaning.

Color Contrast Guidelines:

- **Small Text** against the background: **4.5 to 1** min ratio with the background (small text is under 18 point regular or 14 point bold).
- **Large Text** against the background: **3 to 1** min ratio with the background (large text is at least 18 point regular or 14 point bold).
- **User Interface Components and Graphical Objects**: **3 to 1** min ratio against adjacent colors

Links

- Links must be **correctly designated** (this occurs automatically in Word when you type a URL and hit Enter; the link becomes clickable and a blue color and underline appear).
- Links must be **visually distinguishable** from the surrounding text.
- Link text must be **meaningful** and not vague or generic.

Tables

- Tables must be **real tables**, and not created in some other way (such as using the tab key and styling data in a table shape).
- Tables must **not** be created using the Draw Table option.
- Tables must have **headings**.
- Tables should (ideally) be **simple tables**.
- **Blank cells** should be avoided or marked appropriately (such as "No Data").

Converting to Tagged PDF

Saving as Tagged PDF

To save as tagged PDF from Word in Windows:

1. Click on **File** > **Save as Adobe PDF**.
2. In the pop-up dialog, click **Options**.
3. In the next pop-up dialog, ensure the following option is checked: **Enable Accessibility and Reflow with tagged Adobe PDF**.
4. You should also leave selected the option **Convert Word Headings to Bookmarks**.

To save as tagged PDF from Word in Mac:

1. Go to **File** > **Save As**.
2. In the **File Format** drop-down menu, select **PDF**.
3. Select the **"Best for electronic distribution and accessibility"** radio button.
4. Click **Export**.

Automated Tagging

Automated Tagging Without Optimizing the Source File:

Go to **Tools** > **Accessibility** > **Autotag Document**. Acrobat will automatically insert tags and produce a Recognition Report, including a confidence rating of the generated tags and what you must perform manually, like adding alt text to images.

Manual Tags

Manual tags can be added within the tag tree or using the Reading Order Tool.

Beware Untagged PDF Conversions

- **Scanning** a document produces a single image with no real, searchable text.
- Using **Print** > **Save as PDF** on a web page or within an authoring software program produces real text but no tags.
- Various options within Acrobat produce untagged PDFs. Examples include **create PDF from Scanner**, **Screenshot**, **Web Page**, and **Clipboard**.

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Converting to Tagged PDF (continued)

OCR/Scanned PDFs

Acrobat Pro DC has a built-in **OCR Text Recognition tool**. Open the file and go to **Tools** > **Create & Edit** section > **Enhance Scans** > **Recognize Text** > **In This File**, and click the **Recognize Text** button.

After Converting to Tagged PDF

Acrobat Pro Is Required

Adobe Acrobat Pro is required for PDF remediation. It isn't required in order to create a tagged PDF, but it is required to fix accessibility issues/touch-up.

The Acrobat Pro Interface

- **The Navigation Pane**: Within the Navigation Pane are more sub-panes. If you don't see a particular pane already displayed, go to: **View** > **Show/Hide** > **Navigation Panes**, and select your choices. The most relevant ones for accessibility are: **Content Pane**, **Order Pane**, and **Tags Pane**.
- **The Document Pane**: The Document Pane is the main area in which the document is displayed. You can select text in this pane in order to tag it, or to highlight an object that was previously tagged in order to visualize it.
- **The Tasks Pane**: In the **Tasks Pane**, we're interested in the **Accessibility** section, which includes many tools such as the **Reading Order Tool** and the **Full Check** to identify accessibility issues.
- The **text reflow** option allows users to magnify the text within the constraints of the viewport, which minimizes the need to scroll back and forth from side to side.

Tools Used to Review/Assess PDF

- Popular automated tools include the **Accessibility Checker** within Acrobat and **PDF Accessibility Checker 2021 (PAC 2021)**.
- **Manual testing** is critical to fully check for accessibility. Automated tools have limitations.

- PDF remediation should never be considered complete until the document has been thoroughly tested using a screen reader. Recommended screen readers for testing are **NVDA** and **JAWS**.

Document Metadata

Adding a Document Title

1. Go to **File** > **Properties**.
2. In the pop-up dialog, go to the **Description** tab and type the title in the **Title** field.
3. Next, go to the **Initial View** tab.
4. Under the **Window Options** > **Show** section, select **Document Title** from the drop-down menu. This will ensure that the document title, rather than the file name, is displayed.

Setting the Document Language

1. Go to **File** > **Properties**.
2. In the pop-up dialog, select the **Advanced** tab.
3. In the **Reading Options** section, select the appropriate **Language** from the drop-down.

Accessibility Tools

Basic Procedure to Use PAC 2021
1. **Download** and open PAC 2021.
2. Click the **upload** button.
3. Select your file and click **Open**. The program will then run the check.
4. Examine the generated report and data.

Acrobat Pro DC Full Check
- Within Acrobat, go to **Tools** > **Accessibility** > **Full Check**.

Colour Contrast Analyser
- **The Colour Contrast Analyser (CCA)** is a free tool available for Windows and Mac, to help you determine if color contrast meets WCAG requirements. You can use the tool by directly typing in HEX, RGB, or HSL color values, or you can use an eyedropper selector tool by hovering over a particular color.

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Document Metadata (continued)

Reading Order

Ensure that reading order is **correct and logical**. Reading order refers to two very different (but equally important) things:

- **Screen reader reading order** — the order in which content will be read out loud by a screen reader. It's 100% managed by the order of tags in the Tags Pane and is perhaps the easiest to get right.
- **Content reflow reading order** —the order in which content will be presented once the document has been set to Reflow View (aka the visual stacking order). It's 100% managed by the order of the content in the Order Pane. This reading order is more difficult to get right on more complex documents, because moving items around in the Order Pane impacts the order of tags in the Tags Pane — often significantly.

Tab Order

When a PDF document has links or form fields, you must define the order in which a user tabs through them. To do this:

1. Open the **Page Thumbnails Pane**.
2. Select all the thumbnails in the navigation pane (Control + click).
3. Right-click one of the thumbnails and select **Page Properties**.
4. On the **Tab Order** tab, ensure this option is selected: **Use Document Structure** (this is the default), and click **OK**.

Cleanup

Checking for Unmarked Content
1. Open the **Tags Pane**.
2. Open the **Options Menu**.
3. Select **Find**.
4. From the drop-down menu, select **Unmarked Content**.
5. Select the option for **Search Document** (or **Search Page** if you want to do this page by page).

6. Click **Find**.

Delete Empty Tags
1. Open the **Options Menu** in the **Tags Pane**.
2. Select **Delete Empty Tags**.

Manual Tagging and Advanced Techniques

An Overview of Tagging

You can add tags manually directly in the tag tree or using the Reading Order Tool.

Working with the Tag Tree

Check for Tags in a Document
To check if a document is tagged, open the **Tags pane**. You'll either see a **tag tree** or the words **No Tags available**.

Add a Tags Root to an Untagged PDF
1. Open the **Options drop-down menu** in the **Tags navigation pane**.
2. Select **Create Tags Root**.

Add Empty Tags
1. Right-click the **Tags Root**.
2. Select **New Tag**.
3. Select the **Type** from the drop-down.
4. Add an optional **Title**.
5. Click **OK**.
6. This will create an empty tag. You'll need to associate content with it.

Edit Tags/Change Tag Type
You can do this in two methods:
1. Double-click the tag and **type in** the new tag directly.
2. Right-click the tag and select **Properties**. In the **Tag** tab, select the **Type** from the drop-down menu.

Move Tags
To move a tag, simply **drag and drop** it within the tag tree.

Delete Tags
You can delete tags by selecting them, then pressing the delete key on the keyboard. You can also right-click a tag and select **Delete Tag**.

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Manual Tagging and Advanced Techniques (continued)

Working with the Tag Tree (continued)

Associate Content with an Existing Tag
1. Click the **Selection Tool**.
2. Select the content in the Document Pane.
3. Right-click the tag.
4. Select **Create Tag** from Selection.
5. Now a container with the content will be created inside that tag.

Create a Tag and Associate Content Simultaneously
1. Click the **Selection tool**.
2. Select the content.
3. Click the **Options menu**.
4. Select **Create Tag from Selection**.
5. Select the **Type** of tag from the drop-down menu and click **OK**.

Find Tagged Content from the Tag Tree
To locate content in the document pane from a tag in the tag tree, simply **click the tag in the tag tree**, and a bright pink outline will appear around the content item in the **Document Pane**.

Find Tagged Content from the Document Pane
1. Click the **Selection Tool**.
2. Highlight/select the item with your cursor.
3. Open the **Options Menu** in the **Tags Pane**.
4. Select **Find Tag from Selection**.
5. The tag will be highlighted/selected in the tag tree.

Using the Reading Order Tool

To open the Reading Order Tool:
1. Go to **Tools** > **Accessibility**.
2. From the drop-down, select **Add Shortcut**.
3. You'll then see it appear as a purple icon in the right-side **Tools Pane**.
4. If you've previously created this Accessibility shortcut, you can just access it directly from the Tools Pane.
5. Select **Reading Order**.

Container Tags

Container elements are the highest level of element and provide hierarchical grouping for other block-level elements. They do not contain semantic meaning and are used more for the benefit of the document author than the end user.

These tags are: **<Document>**, **<Part>**, **<Div>**, **<Art>**, **<Sect>**.

Artifacts

If you want screen readers to ignore certain content, such as decorative images, you must mark those items as **Artifacts**. Leaving them untagged altogether is not the right way to mark content to be ignored.

Paragraphs

All regular text that is not a heading and that can't be tagged with other tags should be tagged as a **paragraph**.

Images/Figures

Images that convey meaning/information should be tagged with the **Figure** tag and given **alternate text**. Decorative images should be marked as **Artifacts** so screen readers can ignore them.

Headers, Footers, and Page Numbers

There is no special tag for Document Header or Footer. These content items should be tagged as either **Paragraphs** or **Artifacts**, depending on the situation.
- Tag **meaningful** information as **Paragraphs**.
- Tag **redundant** information as **Artifacts**.

Lists

Lists are comprised of three or sometimes four tag types:
- List: **<L>**
- List Item: **<LI>**
- List Body: **<Lbody>**
- Label: **<Lbl>**

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Manual Tagging and Advanced Techniques (continued)

Links

An accessible link tag has 2 parts:
- Link tag: **<Link>**
- Link-OBJR annotation: **<Link-OBJR>**

Language of Parts

If your document contains any language changes (for example, a sentence or passage in a different language than the document language), you must specify this. To do this, you'll use the **Object Properties dialog** in the **Tags Pane**.

Tables

Table tagging includes these tags:
- Table: **<Table>**
- Table row: **<TR>**
- Table header cell: **<TH>**
- Table data cell: **<TD>**

Simple tables have only one header row and/or one header column. A **complex table** has nested levels of headers (merged cells).

References, Footnotes, and Endnotes

Footnotes and endnotes consist of two linked parts — the **note reference mark** (the small number in superscript text) and the **corresponding note text**.

To tag notes, you'll use these tags:
- **<Reference>**
- **<Note>**

If you want to create a hyperlink to the note so a user can jump to it, you'll also use these **link tags** to create a link inside the Reference tag:
- **<Link>**
- **Link - OBJR Annotation**

Table of Contents

To tag a table of contents, you'll use these tags:
- **<TOC>** - Table of Contents
- **<TOCI>** - Table of Contents Item
- **<Link>** and **<Link - OBJR>** - To create links within the TOC that are recognizable to screen readers.
- **<P>** - Paragraph, to enclose the link tags
- **<H1>** - Heading level 1, for the Table of Contents (or Contents) text itself.

Headings

Headings are tagged with **<H1>** through **<H6>** tags (6 levels available, just like in MS Word). There is also a general heading tag, **<H>**.

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