

The Basics of PDF Accessibility

Who am I?

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Compliance

1. American with Disabilities Act (ADA)
 - Equal Access for People with Disabilities
2. Web Content Accessibility Guidelines (WCAG)
 - Referenced in Section 508
 - Worldwide Web Consortium (W3C) and ISO standard for Web Content
 - Current standard for compliance is WCAG 2.1 AA
3. PDF/UA – ISO 14289 (PDF/Universal Access)
 - Referenced in WCAG
 - Subset of ISO 32000 (PDF standard) providing additional guidance on creating accessible PDFs

1. City of Portland

- ADA Titles I (employees) and II (public)- Requires Nondiscrimination and Effective Communication

Compliance is just the start of accessibility – ultimately it is about the User Experience! Equal parts Art and Science.

The most basic requirements for an accessible PDF are Actual Text and Tags.

Let's Talk About PDF/UA – ISO 14289-1

PDF/UA (ISO 14289-1) (in process of revising) is a subset of and references ISO 32000 (International Organization for Standardization)

- Provides the text, structure, and organization of the content to assistive technologies.

Let's Talk About PDFs

Do you need to use PDF?

- PDF is most useful when the exact layout needs to be preserved.

What is a PDF? 3 layers

- Visual/Print layer- which is the physical representation of text and graphics
- Content Layer- the layer of the PDF where the actual document content resides
- Tags Structure Tree - establishes the PDF content structure and logical reading order for assistive technology. This is where accessibility lives. Tags provide a logical structure that governs how the content of the PDF is presented to assistive technology. Some assistive technology uses the Reading Order pane.
 - Tags add behind the scenes coding to a PDF. Tags in a PDF document are similar to HTML code.

The Source Document is Supreme

Things to consider when creating the source document:

1. Does the authoring tool of the source document allow the author to create an accessible document.
 - For Example: Word has an Accessibility Checker to help the author make the document more accessible.
2. Does the author know how to create an accessible document
 - For Example: In Word, are Styles used to apply Headings or are headings “created” by changing the font size and making the font bold?
3. It is almost always easier to remediate the source document than the converted PDF document.

Converting to a PDF from a Source Document

Multiple Methods

1. Acrobat Plug-in
2. Application Save As (Microsoft)
3. Export
4. Print to PDF (untagged)
5. Other conversion tools or plug-ins

Varying Results

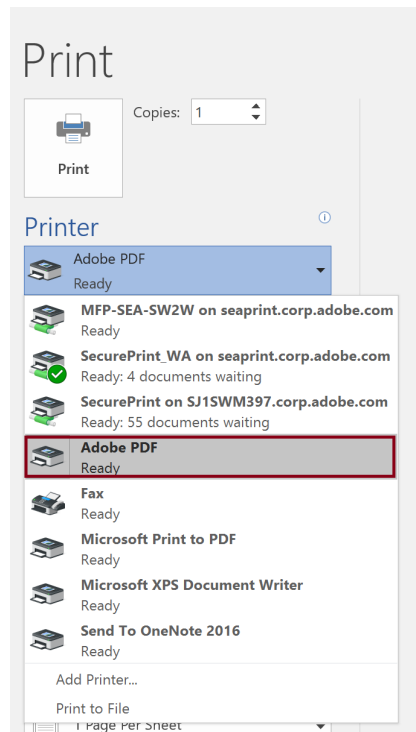
1. Tables and Lists may be inaccurately tagged
2. Resulting PDF may be untagged
3. Custom tags may be created

PDF Conversion from Word – Adobe Process

1. Acrobat Plug-in (Office Ribbon)

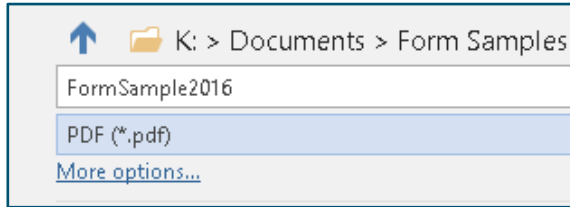


2. Print to PDF results in an Untagged PDF. Do not do this.

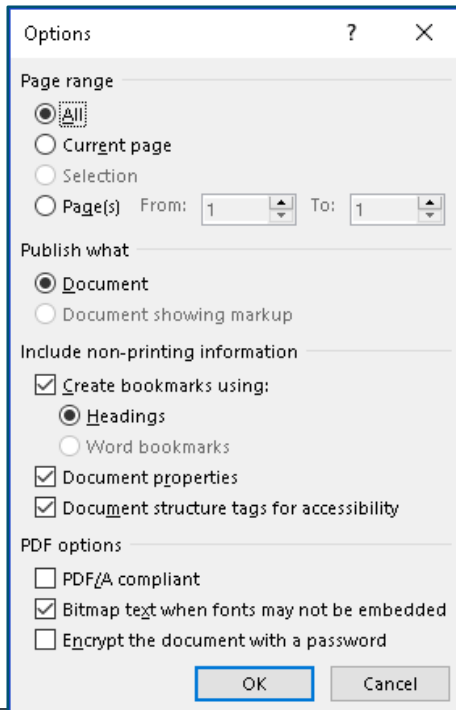


PDF Conversion from Word – Microsoft Office Process

1. Office Save As



2. Under More Options, open Options and make sure Headings are used for Bookmarks and Structure tags for accessibility are checked.



Reading an Accessible PDF

Variables

1. Quality of the tagging of the PDF document (how accessible is the document)
2. Assistive Technology (e.g. Screen Reader) support for PDF tags
3. PDF "Reader" support for PDF tags

Best Results

1. PDF/UA tagged document
2. JAWS, or NVDA screen reader from NV Access (free screen reader)
3. Acrobat DC Reader/Pro (desktop)

Passing the Adobe Accessibility Checker is a good start but may not result in a completely accessible document.

Document Structure and Tags

- Tagging is essential for PDF accessibility. Tags establish logical reading order and provide a means for indicating structure and type, adding alternative text descriptions to non text elements, and substitute text (referred to as actual text) for elements in the PDF document.
- A PDF is accessible only when it has tags, the tags are correct for the type of content, and the tags are in the correct reading order.
- Before you can determine if the right tags have been applied to your document, you need to know what each tag means and its proper use. Here is a list of the most common tags:

Heading Tags

- `<H1>` = Heading 1. This is the title of your document and major sections.
- `<H2>` = Heading 2. This is the next highest-level sub-headings in a document.
- `<H3>` = Heading 3. This is a third level heading.
- `<H4>` = Heading 4. This is a fourth level heading.
- `<H5>` = Heading 5. This is a fifth level heading.
- `<H6>` = Heading 6. This is a sixth level heading.

- Note: Like in an Outline, you should never skip heading levels.

General Tags

- `<P>` = Paragraph. This is used to tag paragraphs.
- `<Figure>` = A figure or image.
- `<Caption>` = Caption. When an image is tagged as a figure, the caption tag tags the caption for it.
- `<L>` = A list. All tags within this tag are part of a list.
 - `` = List item. This tag should always be embedded within an `<L>` tag.
 - `<Lbl>` = Label tag. Embedded within an `` tag, this contains the bullet or list number.
 - `<LBody>` = List Body. This is where the list item content goes.
- `<Link>` = A hyperlink. A correctly tagged link has the `<Link>` tag, text associated with the link, and a `Link – OBJR` tag (the order of the last two is irrelevant.)
- `<Form>` = A form control. This contains an OBJR.

Container Tags

- `<Document>` = Tag that contains all the content in the Document.
- `<Art>` = Article tag.
- `<Part>` = Part tag. Describes a part of the document.
- `<Sect>` = Describes a section of the document.

Table Tags

- `<Table>` = A table. All tags within this tag are part of a table.
- `<TR>` = Table row. You should have one of these tags for each row in your table.
- `<TH>` = Table Heading. This is used to tag table heading cells.
- `<TD>` = Table data. This is used to tag data cells in a table.

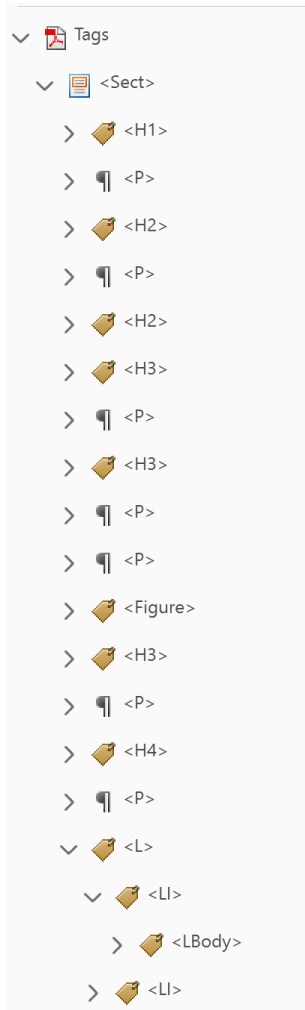
Table of Content Tags

- `<TOC>` = Table of contents element is an element that contains a structured list of items and labels identifying those items; has its own discrete hierarchy.
- `<TOCI>` = Table of contents item element is an item contained in a list associated with a table of contents element.

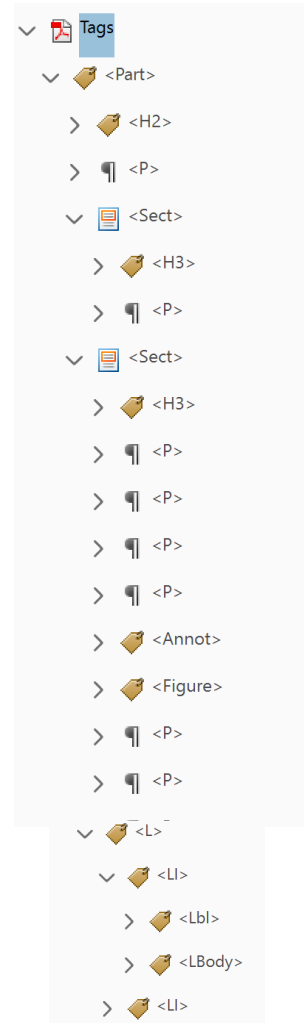
PDF Maker vs. Make Accessible (Autotagging)

- Adobe PDF Maker uses the semantic information of the source document to tag the PDF
- Make Accessible attempts to imply the structure of the document

PDF Maker >



< Make Accessible (Autotag)



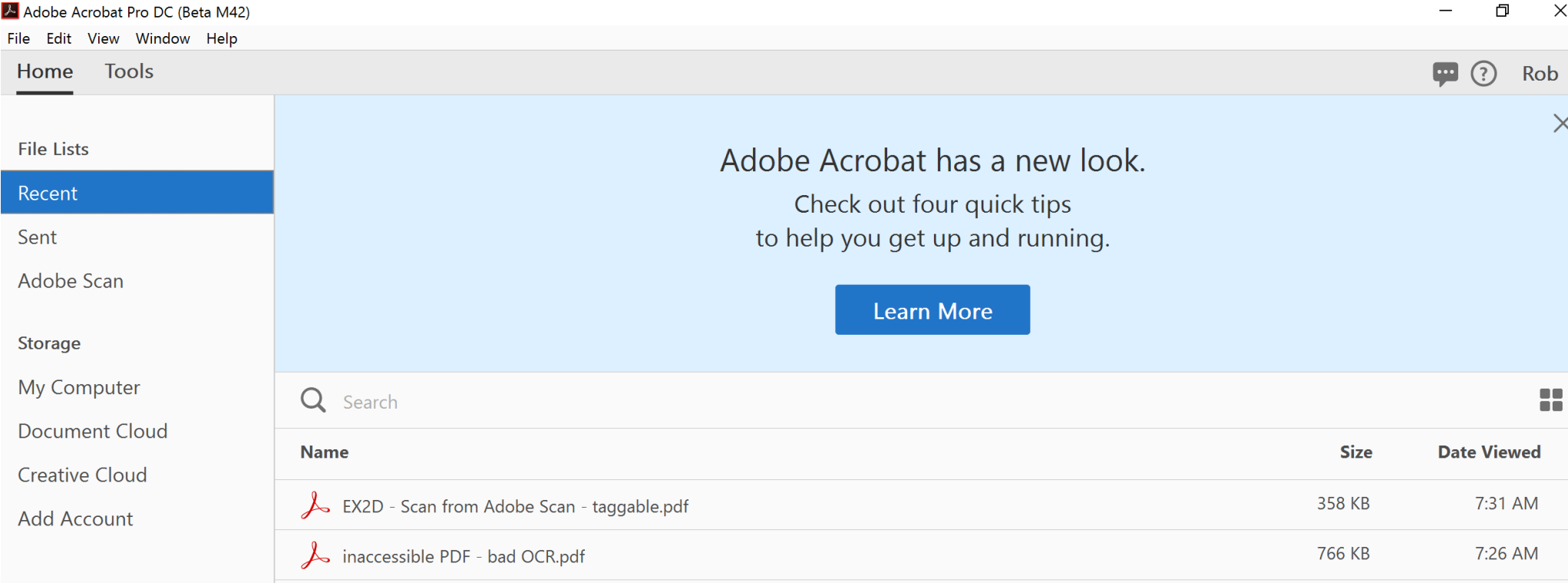
Autotagging

- PDF Autotagging will remove your structure and ALT text and guess at tag structure. This can be useful if you have a short document with a number of untagged items like form fields or links.

Getting Ready in Acrobat Pro

Intro to Adobe Acrobat Pro – New UI Layout

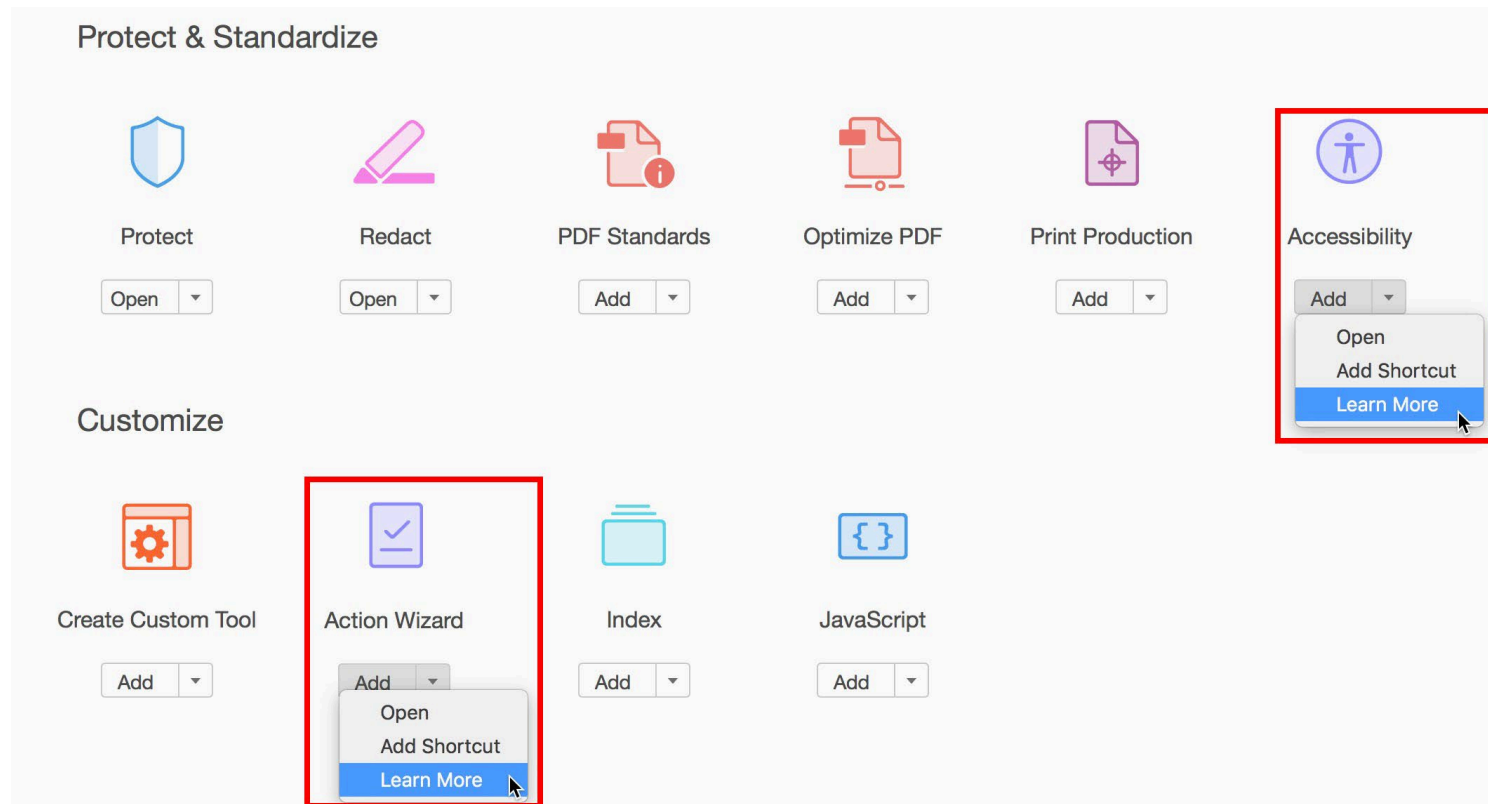
New UI Layout



Acrobat Accessibility Setup – Tools Pane

Tools Tab > Select Add Tool > Organize Tools Pane. Add

- Action Wizard
- Accessibility



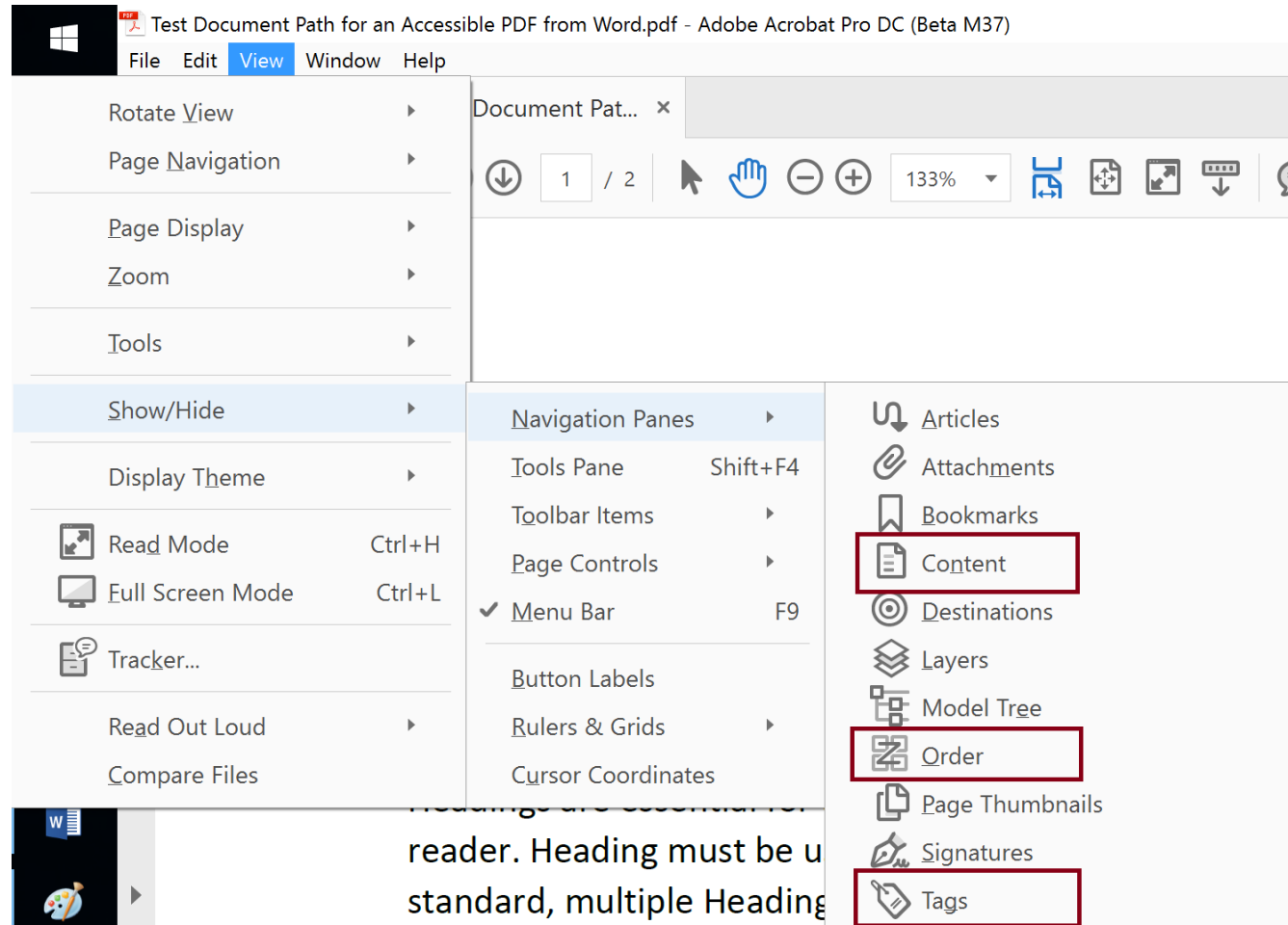
Acrobat Pro Tools for Creating Accessible PDF Documents and Forms

1. Accessibility
 - Autotag Document
 - Full Check (Accessibility Checker)
 - Set Alternate Text
2. Action Wizard
 - Make Accessible (automatic process)
3. Edit PDF
 - Links
4. Enhance Scans
 - Enhance Scanned Document
 - Recognize Text
5. Prepare Form
 - Create and Edit Form Fields
6. Organize Pages

Acrobat Accessibility Setup – Navigation Pane

View > Show/Hide > Navigation Panes

- Tags Panel
- Content Panel
- Order Panel



reader. Heading must be u
standard, multiple Heading

Reading Order/Tagging Tool

(Formerly known as the TURO or Touch Up Reading Order)

1. Access via Order Panel or Tag Tree or Accessibility
2. Set up Display
3. Editing Tags in Reading Order tool

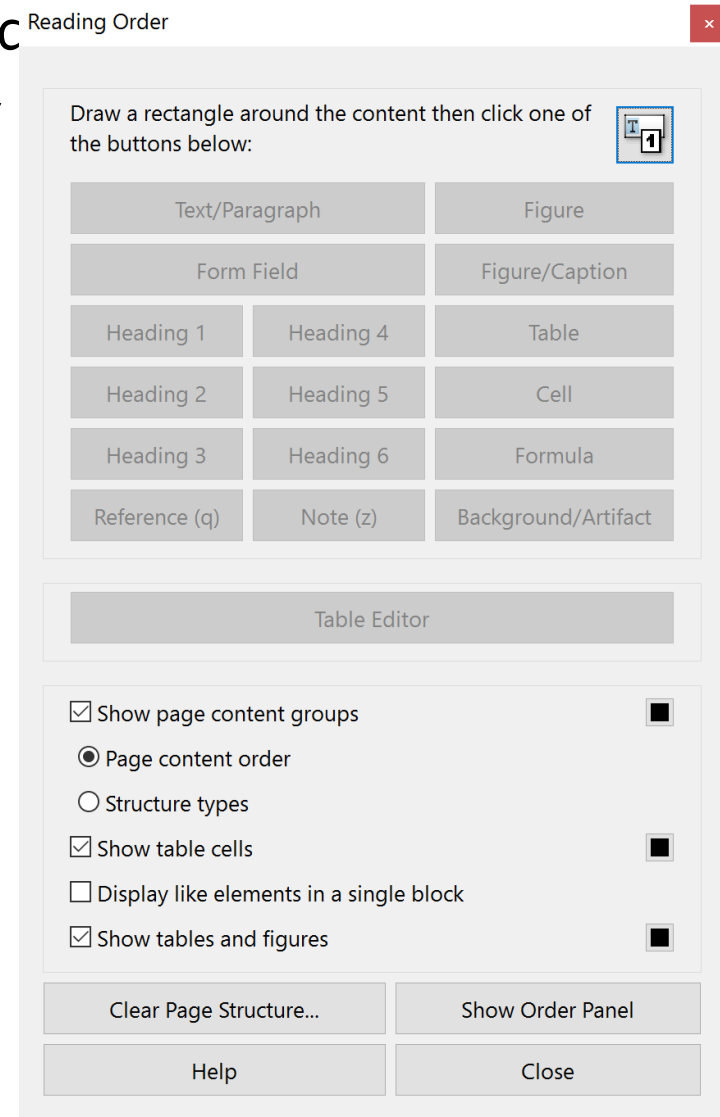


Table Editor

1. Set up Table Editor
 - Access via Tag Tree or Reading Order tool
 - Set display
2. Enhancements
 - Click anywhere
 - Select cell

TH	me	TH	Title	TH	Roles & Responsibilities	
TH	Andrew Kirkpatrick	TD	Group Product Manager	TD	Standards & Accessibility	
TH	tt May	TD	Senior Product Manager	TD	Corporate Accessibility	
TH	y Chen	TD	Product Manager	TD	Marketing Cloud Accessibility	
TH	o Haverty	TD	Senior Product Manager	TD	Document Cloud Accessibility	
TH	k Nicolai	TD	Product Manager	TD	Creative Cloud Accessibility	

Table Editor Options ✕

Color Options

Border color ■

Header cell color ■

Data cell color ■

Selection color ■

Show cells that span multiple rows or columns ■

Show cells with missing header ■

Label Option

Show cell type (TH or TD)

OK Cancel

Document Properties (Ctrl + D)

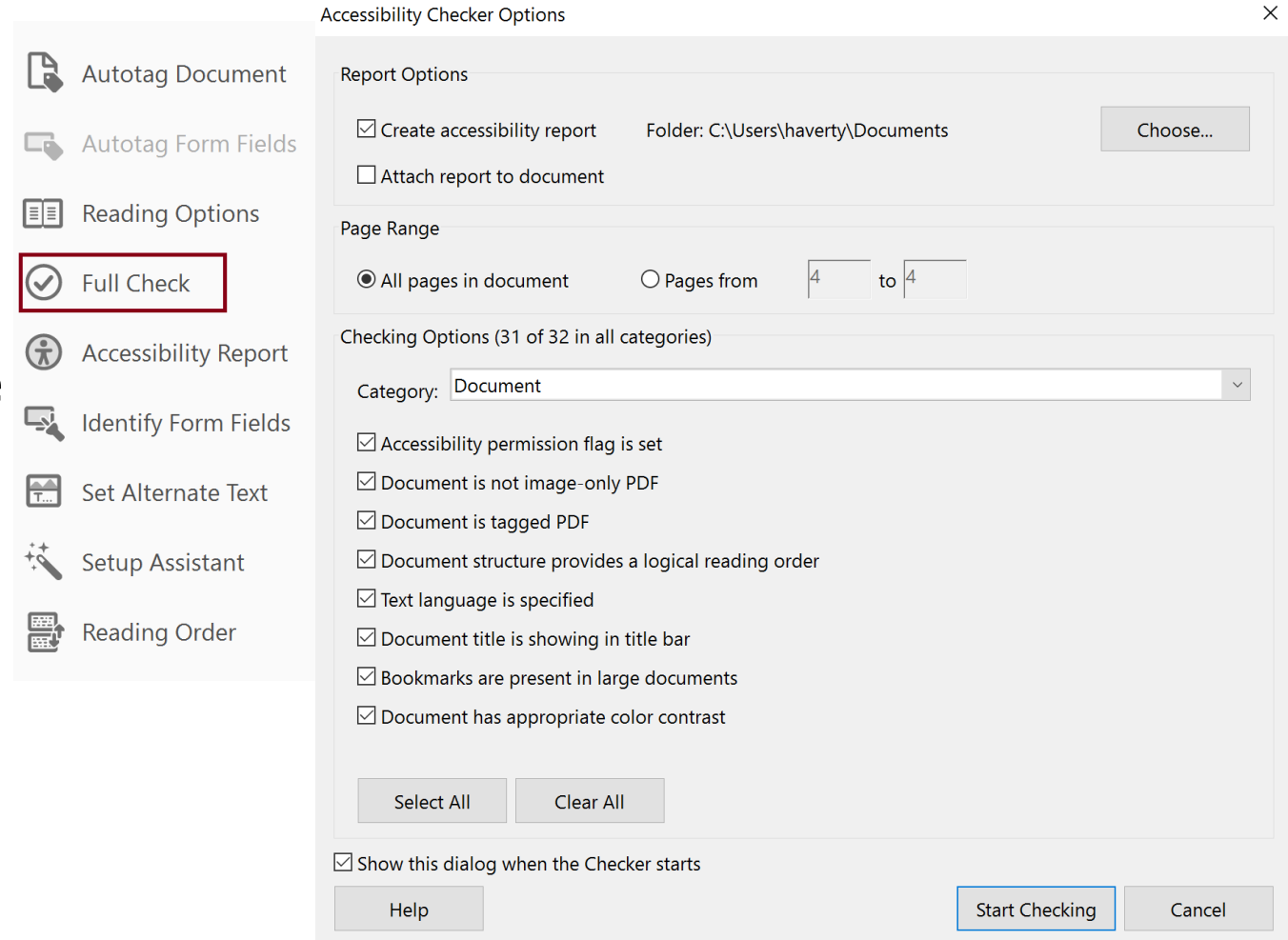
- Add a descriptive Document Title, Author, and any other metadata.
- Select Document Title in the Initial View tab.

Accessibility Compliance Testing

- **Acrobat Accessibility Checker**
 - Does not verify full WCAG conformance
 - Does not verify full PDF/UA conformance
- CommonLook PDF (paid) and CommonLook Validator (free) plug-ins can check WCAG and PDF/UA
- PAC2021 free accessibility checker for PDF/UA.

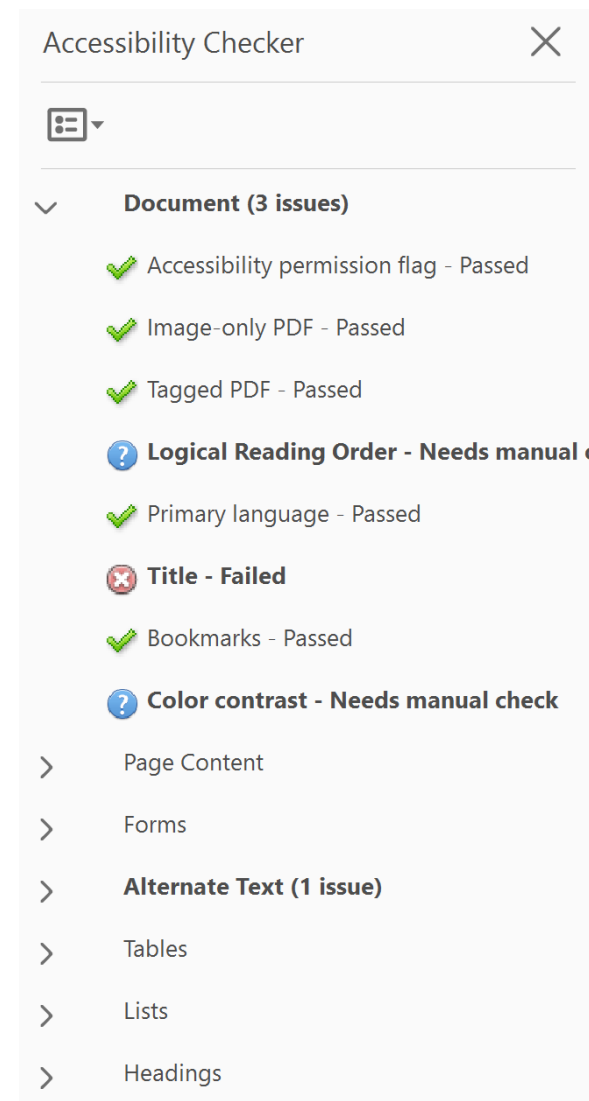
Acrobat Accessibility Checker

- Found in the Accessibility Tool
 - Select Full Check
 - Leave default settings (check all check boxes in "Options")
 - Select Start Checking.
 - View Results in the Navigation Pane



Acrobat Accessibility Checker - Results

- Document will typically have issues.
- Logical Reading Order and Color Contrast will **always** require manual check.
- Some of the results cover WCAG.
- Some additional manual testing will be required.
- Mostly accessible PDF but not fully WCAG or PDF/UA compliant.

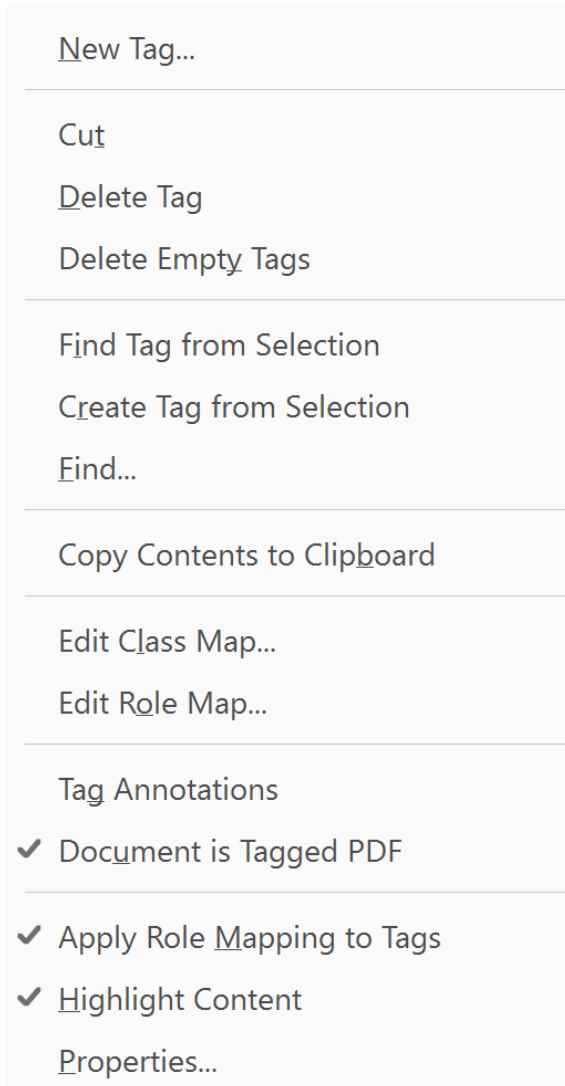


Fixing Tags

- Content Shall be Tagged correctly and in the Logical Reading Order. Modern Screen Readers use the Tag Tree for reading order, not the Reading Order Pane.
- Common areas for review:
 1. Tables
 2. Figures
 3. Artifacts
 4. Lists
- Unique considerations depending on the source document and means of conversion:
 1. Scanned Document
 2. Links
 3. Form Fields

Editing in the Tag Tree – The Basics

1. Move Tags
 - “Drag and Drop” or “Cut and Paste”
2. Change Tag
 - F2

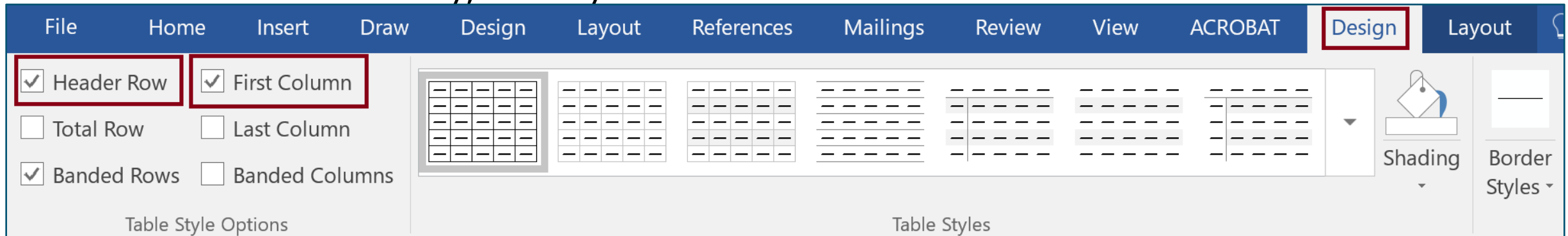


Fixing Tags – List Basics (Single level)

According to the PDF/UA ISO standard, a list must have the List `<L>` tag and List Item `` tags. They may also have the Label `<Lbl>` and List Body `<Lbody>` tags.

Table Header Cells - Office

- Word
 - Header Row (Column Headers)
 - First Column (Row Headers)
- In Layout Tab, Select "Repeat Header Rows"
- Tables are for Data only, not layout unless unavoidable



Fixing Tags in PDF– Basic Table

Column and Row Headers need to be tagged with the `<TH>` tag and data cells with the `<TD>` tag. Scope should be specified for `<TH>` cells. Span needs to be specified for merged cells.

Table Header Cells - Acrobat

- Select Header Cell radio button for a <TH> tag
 - Row Headers should have a scope of "Row"
 - Complex tables and merged Headers need both Scope and Span (Span for number or rows or columns)

Table Cell Properties...

Table Editor Options...

Auto Generate Header Cell IDs

The screenshot shows the 'Table Cell Properties' dialog box. Under the 'Type' section, the 'Header Cell' radio button is selected. The 'Scope' dropdown menu is set to 'None'. In the 'Attributes' section, 'Row Span' and 'Column Span' are both set to '1'. The 'ID' field is empty, and the 'Associated Header Cell IDs' list is also empty. A warning icon and text at the bottom indicate 'Conflicting values for the selected cells'. The 'OK' and 'Cancel' buttons are visible at the bottom right.

This screenshot is identical to the previous one, but the 'Scope' dropdown menu is open, showing a list of options: 'Row', 'Column', 'Both', and 'None'. The 'Row' option is highlighted in blue, indicating it is the selected value. The rest of the dialog box, including the 'Attributes' section and the warning message, remains the same.

Artifacts

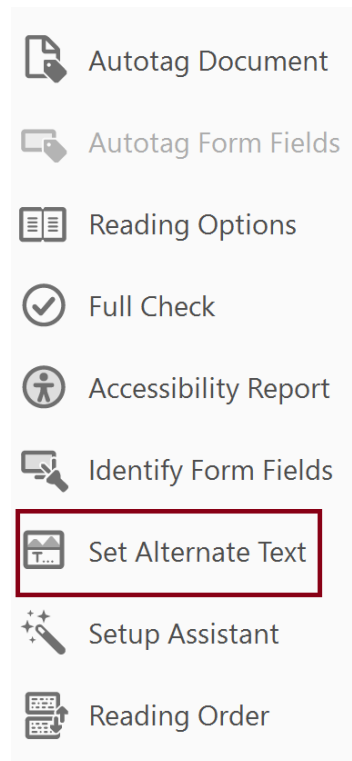
An artifact is content that does not provide meaningful information such as decorative images or line spaces. Artifacts should not be present in the Tag Tree.

1. Open document in Acrobat
2. Open the Tag Tree (this step is not necessary but for illustration only)
3. Access the Reading Order tool from the Tag Panel or Order Panel
 - Tag Panel select Reading Order
 - Order Panel select "Show reading order panel"
4. Select item number for content to be artifacted
5. Select "Background/Artifact" from the Reading Order tool
6. Alternatively, select "Change tag to Artifact" in the Tag tree
7. Use "Delete Empty Tags" command

Images

1. Alternative Text

- Select the Accessibility Tool



Adobe Acrobat



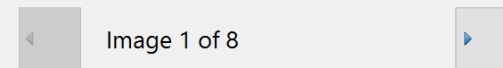
Acrobat will detect all figures in this document and display associated alternate text.

Do not show this message again

OK

Cancel

Set Alternate Text



Alternate text: Decorative figure

Save & Close

Cancel

Scanned Document

1. Completely Inaccessible
2. Run the Make Accessible Wizard or
3. Enhance Scans tool- Enhance-> Scanned document-> Enhance
4. Check for OCR Suspects
5. Go to Edit PDF
6. Add the links
7. ID form fields if applicable
8. THEN, autotag document
9. Run accessibility checker.
10. Check Results
11. Check Tags

Acrobat Pro Helpful Links and Resources

[Create and verify PDF accessibility, Acrobat Pro \(adobe.com\)](#)

[Accessibility features in PDFs \(adobe.com\)](#)

[Acrobat DC and Reader DC Accessibility Blogs](#) (search for PDF or Accessibility)

[Creating accessible PDFs in Adobe Acrobat](#)