



Guidelines to Accessible Word and PDF documents

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1 Introduction

The purpose of a document is to convey its content to the reader as simple as possible regardless of readers abilities or disabilities. Therefore, it is important is to make sure the document can be read and understood by an audience as wide as possible. This is the essence of accessibility, and for electronic documents (e-documents),¹ this means make the content of the document accessible to assistive technologies such as screen readers, braille reader, magnifiers etc.

There are several relevant standards as well as national and international regulations on accessible Information and Communication Technologies (ICT) services, solutions, and digital documents. As national regulations may differ from international regulations, the Strategic Advisory Group on Accessibility (SAGA) does however encourage to also refer national regulations.

Furthermore, to develop an accessible PDF document, it is important that the parent document that is supposed to be converted into PDF document is accessible. Most documents published as PDFs are first developed in an authoring application such as MS Word. The converted PDF then inherits the formatting, labels, and tags etc from the authoring application. As MS Word is the most common authoring application, the documentation also contains guidelines on how to develop an accessible MS Word documents which can lead to an accessible PDF document.

1.1 Scope

Many of the same instructions and guidelines apply to different formats of documents, but the scope of this documentation does not allow us to provide guidelines to other document formats, such as PowerPoint and InDesign.

In this guideline documentation, we will focus on e-documents, more specifically making accessible Microsoft Word (MS Word) and Portable Document Format (PDF) documents. The chapter 10 – non-web documents of EN 301 549, to which EU’s Web Accessibility Directive refers to, is used as a source for accessibility requirements. These requirements refer to W3C Web Content Accessibility Guidelines (WCAG) 2.1 success criteria on level A and AA. Moreover, the documentation also includes some guidelines based on best practices and recommendations.

¹ EN 301 549 V3.2.1 (2021-03) defines “document” as a “logically distinct assembly of content (such as a file, set of files, or streamed media) that functions as a single entity rather than a collection, that is not part of software and that does not include its own user agent”.

This definition covers e-documents and “office file documents”, which EU’s Web Accessibility Directive (WAD) regulates and defines as “documents that are not intended primarily for use on the web and that are included in web pages, such as Adobe Portable Document Format (PDF), Microsoft Office documents or their (open source) equivalents”

This documentation focuses on how the base document should be developed in order to make sure it can be transformed to an accessible PDF. The editing of a PDF document in an authoring application can be detailed and therefore such guidelines are not considered in the scope of this documentation. SAGA recommends to rather make the parent document accessible before converting it into a new PDF. Chapter 6 of this documentation provides more information about editing PDFs in Adobe Acrobat Pro.

NOTE:

The shortcut keys used in this documentation are based on Microsoft default keyboard shortcuts in Word.² It is possible that the different keyboard layout and display language of the Word application have different shortcut keys than the ones documented in this documentation.

1.2 Why Accessible e-documents

As e-documents contain and convey important information, accessibility of these documents is essential to secure equal access, participation, and independency. Some documents can be essential to take part in a democratic discussion, some to understand your rights and obligations, and others to just take part in the everyday life.

Accessible documents are necessary for many groups of users, such as people with motor, cognitive and visual disabilities. Moreover, accessible documents can be useful for others, such as people with temporary reduced abilities, users without disabilities, and users of assistive technologies. Making an e-document accessible is therefore the right thing to do so that as many users as possible can benefit the document regardless of their abilities or disabilities. This is in accordance with best practice, as equal access to information is crucial in a democratic society.

In addition to best practice, accessibility of ICT, including e-documents, have also been object for legal regulations. EU's WAD regulates for example "office file formats" and obliges public sector bodies to make these documents accessible when they are available on public sector websites and mobile applications. Moreover, many countries have also introduced national regulations on ICT accessibility, including e-documents, for both public and private sector. These regulations have taken as best practice into a regulatory framework, which again has made accessibility to an obligation.

² Microsoft Keyboard shortcuts in Word, retrieved on 20.10.2021 - <https://support.microsoft.com/en-us/topic/keyboard-shortcuts-in-word-95ef89dd-7142-4b50-afb2-f762f663ceb2>

2 Things to remember for accessibility of documents

In order to make it easier to review whether a document meets the accessibility requirements or not, we have made an overall stepwise checklist that can be useful to make e-documents accessible:

- Step 1: Prepare the structured document with image descriptions in Microsoft Word.
- Step 2: Use the Accessibility Checker and fix errors if any.
- Step 3: Use at least one assistive technology such as NVDA to test the reading experience and identify any remaining accessibility barriers.
- Step 4: When your accessible Word document is ready, save it as PDF if required.
- Step 5: Test the reading order of PDF and ensure the correct tag structure in Adobe.

3 Creating accessible Microsoft Word documents

To create an accessible PDF from a Word document, it is important that the Word document itself is accessible. If not, the converted file will not be accessible either. Editing a PDF later on is much more complex than preparing an accessible Word file, which underlines the importance of being thorough on the base document.

In order to make the MS Word document accessible, it is important to create a logical reading order and structure, with the correct use of elements such as headings, lists and tables. Moreover, illustrations and images must have a sufficient alternative text etc. In the following, we will guide you through the most relevant features, settings etc. necessary to make the MS Word document accessible.

This document contains stepwise guidelines for mouse navigation, as well as keyboard shortcuts, on each requirement. As mentioned above, the shortcut keys are based on Microsoft default keyboard shortcuts in MS Word and may vary different versions of keyboard layout and display language.

Here is an example of a shortcut – Press **Alt + f, i, i**, then select Check Accessibility and press **Enter**.

Pluss (+) requires the user to press and hold the keys before and after simultaneously, while comma (,) requires the user to press the following key(s) one by one in the given sequence. In other words, the shortcut key above must be applied like this:

1. Press and hold **Alt** and **f** simultaneously,
2. Release **Alt** and **f**, and press sequentially **i** twice,
3. Choose Check Accessibility from the list, and
4. Press **Enter**

3.1 Structure and formatting

A good start is to make sure the document has both a title and a file name that describe the purpose of the document. In addition, clear and plain language should be used to write a document. Therefore, it is very important to select the correct language of the page, this will also help to develop an accessible PDF document when it will be converted from Word to a PDF format.

3.1.1 WCAG success criteria

- 1.3.1 Info and relationship (Level A)
- 1.3.2 Meaningful sequence (Level A)
- 1.4.4 Resize text (Level A)
- 2.4.2 Page title (Level A)
- 3.1.1 Language of page (Level A)
- 3.1.2 Language of parts (Level AA)

3.1.2 Functional performance statements

Users with following ability impairments can/may be affected:

- Usage without vision
- Usage with low vision
- Usage without vocal capability
- Usage with limited cognition
- Usage with limited manipulation or strength

3.1.3 Stepwise guidelines

The title of a document is very important for all types of users. The title of a document is easily available to the assistive technologies such as screen reader, which describe the purpose of the document without requiring users to read or interpret the contents of the document. File name can be provided while creating a document or can also be renamed afterwards. However, it is also recommended to provide title in the properties of the document in addition to file name, it will later help in the accessibility of PDF.

For providing the title to a document in Word, use the following steps.

Keyboard (title):

1. Press the **Alt + f, i, s, 1** key to add or edit title of a document.

Mouse (title):

1. Select **File** tab > **Info** > Under **Properties** > use **Title** box to add or edit title of a document.

3.1.3.1 Language

Easily understandable language is important for all type of documents. Assistive technologies such as screen readers use the language label to select the correct speech synthesis. Therefore, it is also important that the document is marked with its correct language. In addition, if a document has parts of it such as quotes in another language than the default language of the page, then this should also be marked up with actual language of the text.

For providing correct language info to a document or part of it in Word, use the following steps.

Keyboard (language):

1. Press the **Ctrl + a** key to select the whole content of a document.
 - a. If you want to select language for a part of a document such as a quote which is in another language than the main language of the document. Use **Ctrl + Arrow keys** to select that specific part.
2. Press **Alt + r, u, l** key and choose the actual language to mark the language of a document or part of it.

Mouse (language):

1. Select **Review** tab > under Language > select Language > click on **Set Proofing Language** and choose the actual language to mark the language of a document or part of it.

3.1.3.2 Font and font size

Font styles are an important aspect of a document which reflect the presentation of contents in a document to users. There are no hard and fixed rules about what the best fonts for a document are. However, it is important that the given font is easy to read for all users regardless of their abilities.

Text size of 12 point or higher is recommend, as it will benefit most of the users. The users with sight problems generally find larger text size easier to read.

For providing font and font size info to the contents of a document or part of it in Word, use the following steps.

Keyboard (font and font size):

1. Press the **Ctrl + d** key to open the font dialog box. Other shortcut keys:
 - a. For selecting font, use **Ctrl + Shift + F**
 - b. For selecting font, use **Ctrl + Shift + P**
2. Select actual font, font style, and/or font size.

Mouse (font and font size):

1. Select **Home** tab > under Font > use **Font** box to select font and font size.

3.1.3.3 *Moving objects*

The structure of a document also includes movable objects, such as a non-text object such as an image or a text object such as a text box. If these objects are not structured correctly then the reading order of the document can be affected especially for users of assistive technologies such as screen reader users. Select “Top and Bottom” or “In Line with Text” for the text for text wrapping around objects. This will make it easy for screen reader users to follow the structure of document through the correct reading order.

For changing text wrapping around movable objects in a document in Word, use the following steps.

Keyboard (wrap text):

1. Mark the actual object and press **Shift + F10**.
2. Select **Wrap Text**, then select either **In Line with Text** or **Top and Bottom**.

Mouse (wrap text):

1. Right click on the actual object, select **Wrap Text**, then click on either **In Line with Text** or **Top and Bottom**.

3.1.3.4 *Use of Style*

Pre-defined Styles make it easier to define the structure of your document. Structure involves defining the different types of content in your document, such as headings, lists, quotes, tables, and columns, while making sure that the formatting is consistent, and the document is accessible.

A style is set of formatting properties that determines how the content will look, for example font type, text size, colour, or shading etc. Applying pre-defined styles gives your document a consistent look while providing important information about the content of the document, beyond the visible formatting. This information makes a document accessible for assistive technologies, such as screen readers and others who can use styles to navigate through the document if it is formatted using a small set of pre-defines styles.

Style(s) can also be edited, and then all the elements in a document marked with this style will undergo the same changes. For example, if a style Heading 1 is defined with a font type Arial, text size 16, and colour blue then all Heading 1 in the document will have the same formatting.

In Word, there are following different types of styles:

- Character and paragraph styles: Determine the appearance of the text in a document.
- List styles: Determine the appearance of lists.
- Table styles: Determine the appearance of tables.

For applying a style in a document in Word, use the following steps.

Keyboard (styles):

1. Place the insertion point in the actual paragraph (paragraph style) or mark text to be formatted (character style).
2. Press **Ctrl + Shift + s** to open/display the **Task Pane for Styles**.
3. Select a **style** from the list and press Enter.
4. **F6** key can be used for moving between document, Status bar, Ribbon, and Task pane.

Mouse (styles):

1. Place the insertion point in the actual paragraph (paragraph style) or mark text to be formatted (character style).
2. Select **Home** tab > **Styles** > use **Styles**.

3.2 Headings

Headings break up text and make content easier to read. When defining a heading, it is important that you apply a heading style. Always use heading styles in a logical order and do not skip levels. For example, Heading 1 will always be followed by Heading 2 and Heading 2 will be followed by Heading 3 or another Heading 2 etc.

If this is not done, the document will not pass the Accessibility Checker tests. The reason is simple: headings are very important especially for the keyboard users and screen readers users as they use headings to navigate the page by jumping from heading to heading. Without headings, it would be almost impossible for these users to navigate a page and to understand the content of the document.

Correct use of heading styles also allows you to create an automatically generated table of contents which makes it possible to jump to the right place in document.

As mentioned above, headings should have different levels and those levels must be correctly nested. Nesting means using different heading levels in a logical order, in order to indicate which information is most important and which block is a subset of another block.

Further, screen reader users may think they have missed a heading, or they may get confused by the order. And remember, when you are writing headings, keep them short, specific to the information that follows them, and clear to someone new to the topic.

If you don't apply heading styles and instead only change the formatting of the text itself, the heading won't be technically defined as a heading. The appearance may provide a consistent structure visually, but the heading will not appear in the navigation or in the table of contents. It will also not be interpreted as a heading by assistive technology software.

3.2.1 WCAG success criteria

- 1.3.1 Info and Relationships (Level A)
- 2.4.6 Headings and labels (Level AA)
- 4.1.2 Name, Role, Value (Level A)

3.2.2 Functional performance statements

- Users without vision
- Users with limited vision
- Users with deaf blindness
- Users with limited manipulation or strength
- Users with limited cognition

3.2.3 Stepwise guidelines

It is recommended to keep the Navigation Pane open when a user is applying headings or is reading a document. It will help you to confirm the correct heading level, the nesting of different headings, and navigation back and forth through the headings.

To view the Navigation pane:

Keyboard (navigation pane): Press **Alt + w, k** to open or close Navigation pane.

Mouse (navigation pane): Select **View** tab > Show > use **Navigation Pane**.

Remember that for a normal paragraph text use the “Normal” from the Styles list in Word. For selecting and applying correct heading level on a paragraph use following steps.

Keyboard (headings):

1. Place the keyboard on a sentence or word that you want to mark as heading.
2. Press **Ctrl + Alt + 1** for Heading level 1.
3. Press **Ctrl + Alt + 2** for Heading level 2.
4. Press **Ctrl + Alt + 3** for Heading level 3.
5. Press **Ctrl + Alt + 4** for Heading level 4.
6. Press **Ctrl + Alt + 5** for Heading level 5.
7. Press **Ctrl + Alt + 6** for Heading level 6.
8. Press **Ctrl + Shift + n** to mark the text as a normal paragraph.

Mouse (headings):

1. Select **Home** > Styles > use correct **heading level or style**

3.3 Page breaks and text splitting

Most people consciously or unconsciously use the space bar for a large spacing instead of **Tabs**. Several people use **Enter** instead of page break etc. White spaces must be avoided as much as possible in a document. The reason is that they will be read out as 'blank blank blank...' to someone who uses assistive technologies such as screen reader. Instead, use the Word built-in features such as indentations, line spacing, and Styles to achieve the desired visual presentation.

3.3.1 WCAG success criteria

- 1.3.2 Meaningful Sequence (Level A)

3.3.2 Functional performance statements

Users with following ability impairments can/may be affected:

- Usage without vision
- Usage with low vision
- Usage with limited cognition

3.3.3 Stepwise guidelines

3.3.3.1 *Indentations and inline spacing*

Avoid use of multiple **space** key for a large spacing in a line or indentation. Use Word's built-in feature "**indent**" for this purpose.

Note that indentation and spacing in a line or paragraph are two different ways of spacing. An indent or indentation is a space at the beginning of a paragraph. However, a spacing can be at the beginning of a paragraph or inside a paragraph or line.

A quick way for a large spacing at beginning, inside a line or paragraph is to use the **Tab** key which create an indent of 1/2 inches or 9 spaces at font size 12 points if no specific tab positions have been set. Press the **Shift + Tab** key to decrease spacing.

Keyboard (indentation):

1. Place the insertion point at the right place of the paragraph you want to indent or add a large spacing.
2. Press the **Ctrl + m** key to increase indent or spacing at the beginning of a paragraph.
3. Press the **Ctrl + Shift + m** key to decrease indent or spacing at the beginning of a paragraph.

Mouse (indentation):

1. Select **Home** tab > Paragraph > Use **Increase Indent** or **Decrease Indent**.

3.3.3.2 *Line and paragraph spacing*

Avoid use of **Enter** key many times to add spacing between lines and paragraphs. Instead, use Word's built-in feature "**Line and Paragraph Spacing**" for this purpose.

Keyboard (line and paragraph spacing):

1. Place the insertion point at the line or paragraph
2. Select **Home** tab, "**Line and Paragraph Spacing**" from Paragraph, and then "**Add Space Before Paragraph**" if you want to add space before a paragraph. Shortcut keys:
 - a. Add or remove 12 points of space before a paragraph: **Ctrl + 0 (Zero)** or **Alt + h, k, select a spacing**.
 - b. Add Single-spacing: **Ctrl + 1**
 - c. Add 1.5-line spacing: **Ctrl + 5**
 - d. Add Double-spacing: **Ctrl + 2**
3. Select **Home** tab, "**Line and Paragraph Spacing**" from Paragraph, and then "**Add Space After Paragraph**" if you want to add space before a paragraph. Shortcut keys:
 - a. **Alt + h, k, a**.

Mouse (line and paragraph spacing):

1. Select **Home** tab > Paragraph > "**Line and Paragraph Spacing**" > Use **Add Space Before Paragraph** or **Add Space Before Paragraph**. Vice versa if you want to remove spacing before or after a paragraph.

3.3.3.3 *Page break*

Avoid use of **Enter** key many times to force a page shift. Use Word's built-in feature "**Page Break**" for this purpose.

Keyboard (page break):

1. Place the insertion point at the line or paragraph you want page shift or page break.
2. Select **Insert** tab and then select "**Page Break**" from Pages to add page break. Shortcut keys:
 - a. **Ctrl + Enter**.

Mouse (page break):

1. Select **Insert** tab > Pages > use **Page Break**

3.3.3.4 *Column shift*

For many users, documents formatted with columns are difficult to read, however some layout schemes require this type of formatting. Therefore, it is important that a document formatted with columns is accessibly designed in Word so that when the document is converted into PDF format, then the PDF is accessible for the users, especially for screen reader users. It is a best practice to avoid using column split.

Avoid using **Enter** key many times to force a column shift to the beginning of next column on page. Use Word's built-in feature "**Column Break**" for this purpose.

Keyboard (column shift):

1. Place the insertion point at the line or paragraph you want column shift or column break.
2. Select **Layout** tab, click "**Breaks**" from Page Setup, and then select "**Column**" to insert a column break. Shortcut key:
 - a. **Ctrl + Shift + Enter**
3. A column break is inserted.
4. Tip: Click **Home** > **Show/Hide (Paragraph mark)** to see it. Shortcut key:
 - a. **Ctrl + (**

Mouse (column shift):

1. Select **Layout** tab > Page Setup > click **Breaks** > choose **Column**.

3.4 Lists

Use the List function to create bulleted and numbered lists. Most screen readers offer functionality for navigating directly inside lists. The reader will also know how many items are in the list. In addition to that, a screen reader also provides information regarding where the lists start and ends, and what list item the user is on. If the proper list function is not used, then it would be hard for the screen reader to properly read the lists. Therefore, it is important to use Word's built-in list feature in Home tab.

3.4.1 WCAG success criteria

- 1.3.1 Info and relationships (Level A)
- 4.1.2 Name, Role, Value (Level AA)

3.4.2 Functional performance statements

Users with following ability impairments can/may be affected:

- Usage without vision
- Usage with low vision
- Usage with limited cognition

3.4.3 Stepwise guidelines

Keyboard (list):

1. Select the text you want to mark as a list
2. Press **Alt + h** to go to the home tab:
 - a. For a bulleted list – **u**.
 - b. For a numbered list – **n**.

- c. For a multilevel list – **m**.
3. Select appropriate list style from the list.

Mouse (list):

Select **Home** > Paragraph > choose **bullet**, **numbered**, or **multilevel** list.

3.5 Images and illustrations (non-text content)

Images and illustrations are very important for many user groups. However, images that convey a meaning must have an alternative text that describes the purpose of the image. This allows users who cannot see the image in the document to comprehend its content, nonetheless.

Decorative Images: Images that do not convey any meaning or content are decorative images. These images should NOT have an alternative text.

Linked Image/Functional image: Images used to provide important functions such as navigations are linked or functional images. Functional Images should have the alternative text as to describe the function of the image.

Complex images: Complex images are images that convey a large amount of information that can't be structured into a short and concise **alt text**. Complex images should have an alternative text that describes the data and a **longdesc** or a longer alternative that describes the complex image in detail.

Image of text: Image of text is as the name suggests an image of text. This should be avoided if possible but if used, the alternative text should contain whatever is written on the image.

Advanced Images: Form Image buttons: A form image button is a visual representation inside a form. The alternative text should describe what the button will do when selected.

Image maps: An image map is a map of images that together make up a greater picture. In these cases, the container of images should have an alt attribute which describes the whole image and every image inside the map should have a descriptive alt attribute.

Logos: Logos are a company's branding on a web page or document. Logos should have an alternative text that identifies the company, for example the company name.

3.5.1 WCAG success criteria

- 1.1.1 Non-text Content (Level A)
- 1.4.5 Image of Text (Level AA)
- 1.4.1 Use of colour (Level A)
- 1.4.3 Contrast (Level AA)

3.5.2 Functional performance statements

Users with following ability impairments can/may be affected:

- Usage without vision
- Usage with low vision
- Usage with limited cognition

3.5.3 Stepwise guidelines

Keyboard (non-text content):

1. Select the image you want to provide alternative text
2. Press **Shift+F10**
3. Choose **Edit Alt Text**.
4. Add appropriate alt-text that describe the purpose of the content of the image.
 - a. If the image is a decorative image – Check the checkbox **Mark as decorative**.

Mouse (non-text content):

1. Select the image you want to provide an alternative text to
2. Right click on it and choose **Edit Alt Text**.
3. Add appropriate alt-text that describe the purpose of the content of the image.
 - a. If the image is a decorative image – Check the checkbox **Mark as decorative**.

3.6 Use of Colour

Colours can be a good tool for conveying meaning, and it is a good idea to use colours to give the reader a better overview. At the same time, you cannot use colour as the **only** information bearer, because the abilities to perceive colour vary from person to person.

In diagrams, different colours are often used to convey different information. For all sighted users to understand the link between colour and information, other elements must also help convey the meaning. For example, different patterns may be used in addition to colour.

3.6.1 WCAG success criteria

- 1.4.1 Use of colour (Level A)

3.6.2 Functional performance statements

Users with following ability impairments can/may be affected:

- Usage without vision
- Usage with low vision

3.6.3 Stepwise guidelines

- If the author uses colour to convey information, it is important to make sure that the information is also accompanied by a text alternative. However, the best practice is to avoid using colour alone as a mean to convey information.
- For links it is a WCAG requirement to NOT use colour alone.
-

3.7 Colour Contrast (Minimum)

To ensure good readability, text must have sufficient contrast against the background. This also applies to images of text. Regular text should have a contrast of at least 4.5:1 (smaller than 14p bold or 24p non-bold). Large text (larger than 14p bold or 24p non-bold) should have a contrast of at least 3.0:1.

3.7.1 WCAG success criteria

- 1.4.3 Colour Contrast (Level AA)

3.7.2 Functional performance statements

Users with following ability impairments can/may be affected:

- Usage with low vision
- Usage with limited perception of colors

3.7.3 Stepwise guidelines

Keyboard (colour contrast):

1. Press **Alt + h** to get to the home tab
2. Press **fc**, then **m** to get into the more colour's menu.
3. Navigate to custom colours using the arrows keys
4. Copy the HEX value
5. Paste the HEX value into a colour contrast analyser tool such as [Color Contrast Checker - TPGi](#)
6. If your colour contrast ratio is less than 3.0:1 then it fails the contrast check, then provide an appropriate HEX value that passes.

Mouse (colour contrast):

1. Select the text or object you want to check the colour contrast
2. Select **Home > Font colours > More colours > the Custom tab**
3. Copy the colour HEX value
4. Paste the HEX colour value into a colour contrast analyser tool such as [Color Contrast Checker - TPGi](#)

If your colour contrast ratio is less than 3.1:1 then it fails the contrast check, then provide an appropriate HEX value that passes.

3.8 Links

Links should have a descriptive link text, so that it is easy to understand the destination of the links included in the document. Either the link text alone, or the link text together with the text around it, must clearly describe the purpose and/or destination of the link. Many users rely on link text alone. The link text should therefore be understandable out of context. For example:

- Like this: ICT accessibility can be complex. You can find more guidance and examples on [W3C's page on PDF techniques for WCAG 2.0](#).
- Not like this: ICT accessibility can be complex. For more guidance and examples [click here](#).

It should also be easy for the user to see the links in the document. This means that links must be marked using more than just colour. For example, the link text can be underlined, or an icon can be associated with the link - but often in combination with colour.

3.8.1 WCAG success criteria

- 1.4.1 Use of Colour
- 2.4.4 Link Purpose (in Context) (Level A)

3.8.2 Functional performance statements

Users with following ability impairments can/may be affected:

- Usage without vision
- Usage with low vision
- Usage with deaf blindness
- Usage with limited cognition
- Usage with limited manipulation or strength

3.8.3 Stepwise guidelines

Keyboard (Links):

1. Select the link text or linked image you want to make a link
2. Press **Ctrl + k**
3. Write a link-address in the Address text field.
4. Write a descriptive link text in the Text to Display text field, then press Ok button.

Mouse (Links)

1. Select the link text or linked image you want to make a link
2. Right click, click on option Link, and then Insert Link
3. Write a link-address in the Address text field.
4. Write a descriptive link text in the Text to Display text field, then click on Ok button

3.9 Tables

Tables can be challenging for the people who use assistive technology such as screen reader users. Proper use of tables is crucial for the information to be interpreted correctly by assistive technology's users. The more complex the table is, for example, a table with merged or split cells and nested tables, empty rows and columns, the harder it is to make it accessible. Therefore, you should always consider first if it is necessary to present the information as a table. If the answer to that question is yes, you must make sure the table is created in the correct way and seek to make the table as simple as possible.

It is recommended to use Word built-in table feature in the insert tab in order to create a table in your work. Moreover, following information must be provided appropriately:

- Table title
- Table header cells

3.9.1 WCAG success criteria

- 1.3.1 Info and relationship (Level A)
- 4.1.1 Parsing (Level A)
- 4.1.2 Name, Role, Value (Level A)

3.9.2 Functional performance statements

Users with following ability impairments can/may be affected:

- Usage without vision
- Usage with low vision
- Usage with cognitive limitations
- Usage with deaf blindness
- Usage with limited manipulation or strength

3.9.3 Stepwise guidelines

Keyboard (Tables)

1. Press **Alt + n, t** to insert table
2. Select number of rows and column and press enter.
3. Press **Alt + jt, a** to check header row.
4. Press **Alt + jl, o** to open table properties.
5. Navigate to **Alt Text tab** and add a descriptive title in the **Title** text field.

Mouse (Tables)

1. Select **Insert > Tables > use Table**
2. Select number of rows and column and press enter.
3. Select **Table Design > Table Style Option > check Header Row**
6. Right click on table, select **Table Properties**, and then navigate to **Alt Text tab** and add a descriptive title in the **Title** text field.

3.10 Interactive forms

Interactive forms are most commonly used to provide interaction on both websites, mobile applications, and documents. Most of the users prefer to use simple and short forms. Mostly the form documents are developed in a way that it is only possible to edit in the form fields. Such a type of a form document is not optimal and accessible for users that use assistive technologies such as screen readers. It can be difficult for them to read the text before, after, or between the form fields. Forms developed in HTML or PDF-format words are better than in Word if they are designed in an accessible way. In this documentation, guidelines are presented to create the most commonly used form elements accessible in Word which later can be converted into accessible PDF format.

Following things are important to remember when creating interactive forms:

- Every field needs a descriptive tooltip (same as <label> in html).
- You need to check the tab order in your form.
- Plan for clear form error messages.
- Check that all tags are correct.

It is ideally better to create such documents in formats other than Word and PDF for better accessibility

It is important to remember here that an interactive form developed in Word does not mean that this is a completely accessible interactive form. Therefore, the author should test and correct the tags of form elements in PDF authoring tools such as Adobe Acrobat Pro. More information about editing a PDF document in Adobe Acrobat Pro is described in Chapter 5.

3.10.1 WCAG success criteria

- 1.3.1 Info and relationship (Level A)
- 2.4.6 Headings and Labels (Level AA)
- 3.3.2 Label or Instructions (Level A)
- 4.1.2 Name, Role, Value (Level A)

3.10.2 Functional performance statements

Users with following ability impairments can/may be affected:

- Usage without vision
- Usage with low vision
- Usage without vocal capability
- Usage with limited cognition
- Usage with limited manipulation or strength

3.10.3 Stepwise guidelines

3.10.3.1 *Add Developer Tab to Word ribbon*

The Develop tab is used in order to create forms in Word, therefore it needs to be added to the ribbon.

Keyboard (developer tab):

1. Press **Alt + f, t** to Word **Options**.
2. Select **Customize Ribbon**
3. Check the **Developer** checkbox from the list Main Tabs

Mouse (developer tab):

1. Select **File** tab > **Options** > use **Customize Ribbon** > Check the **Developer** checkbox from the list Main Tabs.

3.10.3.2 *Add Form Elements*

To develop an accessible interactive form, Word provides several built-in form elements. To add a form element to a form, use following instructions:

Keyboard (form elements):

1. Press **Alt + I, n** to open Legacy Tools pane, then:
 - a. Text Form Field: Press **e**.
 - i. It is important to provide a clear description so that a screen reader can read it: In order to add title, select the field press **Alt + I, e**.
 - b. Checkbox Form Field: Press **h**.
 - i. Write a good bookmark name under Field setting.
 - ii. Click on button Add Help Text, then add a text in the tab Status Bar. It shall be available to be read out by screen readers.
 - c. Label Control: Press **a**.

- d. Option Button (Radio button) (Design Mode must be activated): Press **o**.
 - i. When all Radio Buttons are placed on the form, it is important to edit them by **right clicking** then choose **OptionButton Object > Edit**.
 - ii. Provide a GroupName according to the question.
 - iii. Deactivate the Design Mode in order to make buttons active.

Mouse (form elements):

1. Select **Developer** tab > Control > use **Legacy Tools**.
2. Select a form element such as Text Form Field, Checkbox Form Field, Label Control, or Option Button) etc.

3.10.3.3 Restrict Editing

Word's built-in feature Restrict Editing permits the Word Form to work with assistive technology and prevent further changing in the form for an unauthorised person. It will also be useful when the form will be converted into a PDF format.

Keyboard (navigation pane):

1. Press **Alt + I, PE** to open or close Restrict Editing pane.
2. For **Forming Restrictions**, check the **Limit forming to a selection of styles** checkbox.
3. For **Editing Restrictions**, check the **Allow only this type of editing in the document** checkbox, then:
 - a. Select **No changes (Read only)** in the list
4. Finally, click on button **Yes, Start Enforcing Protection**.
5. Enter a **Password**.

Mouse (navigation pane):

1. Click **Restrict Editing** > check checkbox under, **Format Restrictions** and **Editing Restrictions** > Select **No changes (Read only) in the list** > Click **Yes, Start Enforcing Protection** > Enter a **Password**.

3.11 Accessibility Check for Word

Microsoft provides an Accessibility Checker tool in Word which is an essential tool for ensuring the accessibility of a document. The Accessibility Checker does not check all for all problem, but it can help the author with discovering accessibility issues that should be fixed. Hence, it is recommended running the Accessibility Checker and fix the issues (if any).

The Accessibility Checker distinguishes between three types of feedback. Microsoft defined them as Accessibility Checker rules³ and describes them as follows:

Errors: Content that makes the document difficult or impossible to read and understand for people with disabilities.

Warning: Content that in most (but not all) cases makes the document difficult to understand for people with disabilities.

Tips: Content that people with disabilities can understand but that could be presented in a different way to improve the user's experience.

3.11.1 Stepwise guidelines to run the Accessibility Checker

To run the accessibility Checker, use the following steps:

Keyboard (Accessibility Checker):

1. Press **Alt + f, i, i**, then select Check Accessibility and press **Enter**.
2. The Accessibility Checker pane will open, and results will display in task pane **Accessibility**.
3. Select an issue to display additional information and the instruction to correct the issue.

Mouse (Accessibility Checker):

1. Select **Accessibility** from the Status Bar; or
2. Select **File** table > **Info** > select **Check for Issues** > use **Check Accessibility**
3. The Accessibility Checker pane will open, and results will display in task pane **Accessibility**.
4. Select an issue to display additional information and instruction to correct the error.

³ Microsoft Rules for the Accessibility Checker, retrieved on 21.10.2021 – <https://support.microsoft.com/en-us/office/rules-for-the-accessibility-checker-651e08f2-0fc3-4e10-aaca-74b4a67101c1>

4 Converting from Word to PDF

In this chapter, the accessible PDF file creation process starting from a Word file is described.

In order to create an accessible PDF file:

1. Prepare a well-structured document with image descriptions in Microsoft Word.
2. Use the Accessibility Checker and fix errors if any
3. Use at least one assistive technology such as the open-source screen reader NVDA to test the reading order and identify any remaining accessibility barriers
4. When your accessible Word document is ready, save it as PDF.

To convert documents from Word to PDF, be sure to use the correct settings. There are several ways to maintain these settings. Adobe PDFMaker and Word's built-in "Save As" are examples of methods that work correctly. If you use Word's "Save As" feature, it is important that the conversion preserves the properties of the original document.

To make sure Word converts correctly:

- select "Save As"
- select PDF file format
- click the "Options" button
- select the "Create bookmarks using headings" option
- select "Document structure tags for accessibility"
- Uncheck "Convert Comments" if you do not want to keep comments in the PDF file.

When you create the PDF correctly, all content objects are assigned a so-called "tag" that defines - either alone or together with a role assignment - how screen readers will interpret the objects in the document. This allows screen reader users to perceive headings or find their way around a table.

You can also use the 'print to pdf' command. However, this doesn't preserve the accessibility as well. It is therefore recommended to avoid this function.

4.1 Accessibility checks for PDF

Depending on how you created the document and which programmes you used before converting it to PDF format, some corrections may be necessary. It may be necessary to make certain corrections in the base document itself after you discover errors when checking the accessibility of the PDF version in Acrobat Pro. Other corrections can be made directly in Acrobat Pro.

There are several tools and tutorials for checking accessibility. Here are two examples that can help you discover the most common errors:

- [Checking the accessibility of the PFDs by Adobe Acrobat Pro](#)
- [Checking the accessibility by European Internet Inclusion Initiative \(EIII\)](#)

Just because the document is approved by this type of automatic check does not guarantee that the document is accessible. There may still be problems that the tool is unable to identify. However, this type of tools can be very helpful for finding some common problems and correcting them.

4.2 Test with screen reader

Testing with screen reader can be done to test the compatibility with assistive technology for your accessible PDF documents.

How to use screen reader

1. Download the screen reader of your choice. Good alternatives are Jaws, Narrator and/or NVDA.
2. Install the software on your computer.
3. Start the program, a noticeable prompt will be heard when the program is ready to be used.
4. Minimize the program windows and open the PDF document to test
5. Turn off your computer screen
6. Navigate using the shortcuts in and test the criteria in “How to reach the minimum requirements”

4.3 NVDA Shortcuts keys

4.3.1 General

You must use the NVDA-modifier key in combination with other keys for some keyboard shortcuts. The modification key can be configured. If you are using a laptop, it is most likely set to 'CAPS LOCK'.

Start NVDA: You can start running the program by holding **Ctrl + Alt + N** keys.

Stop NVDA: To close NVDA, press **NVDA + Q** keys.

4.3.2 For reading

- Start reading at the current position: Press **NVDA + Down Arrow** keys
- Stop NVDA speech: Press **Ctrl** key
- Read the current line again: Press **NVDA + Arrow up** keys
- Previous or next word: Press **Ctrl + back arrow or forward arrow** keys
- Go forward through each page line: **Down Arrow** key
- Go backwards through each page line: **Arrow up** key

4.3.3 For navigation

- Navigate forward through the headings: Press **'H'** key
- Navigate backwards through the headings: Press **SHIFT + 'H'** keys
- Navigate forward through heading levels: Press **1 - 6** key
- Navigate backwards through heading levels: Press **SHIFT + 1 - 6** key
- Navigate forward through links / form elements: Press **TAB** key
- Navigate backwards through links / form elements: Press **SHIFT + TAB** keys
- Form element: Press **'F'** key
- Tables: Press **'T'** key
- Buttons: Press **'B'** key
- Links: Press **'K'** key
- Lists: Press **'L'** key
- Items in list: Press **'I'** key
- To activate a link: Press **'Enter'** key
- To activate a button: Press **'Enter'** or **'Space bar'** key
- Navigate forward through landmarks: Press **'D'** key
- Navigate backwards through landmarks: Press **SHIFT + 'D'** keys
- Switch screen setup mode on / off: Press **NVDA + 'V'** keys
- Open items list - lists page links, headings, and landmarks: Press **NVDA + 'F7'** keys
- Top of page: Press **Ctrl + 'Home'** keys
- Bottom of page: Press **Ctrl + 'End'** keys
- Browser address bar: Press **Ctrl + 'L'** keys

5 Scanning paper documents to PDF

Scanned documents initially consist only of a large image. An image of text is not readable for those who use assistive technology like screen readers, magnifiers, or tools supporting reading and understanding. For all users to read the content, the text must be converted from image into regular text.

Another thing to consider is that scanned documents are often blurry. Perhaps the document is tilted, or it has been scanned and copied several times, making it difficult for all users to read. If it is in the form of an image, it will also be impossible to search and copy parts of the content.

5.1 Converting from image to text

You can convert from image to text using a separate Optical Character Recognition (OCR) application that often comes with your scanner, or with the OCR functionality in a program such as Adobe Acrobat Pro. Note that regardless of whether you are using Acrobat Pro or another application with OCR capability, you will need a PDF editor to make the document technically accessible.

The quality of optical character recognition depends on many factors, including image quality and font. Therefore, after using the OCR function, you must first check that the result is correct.

5.2 Structure

It is important to make sure your content gets the right structure. For example, headings must be presented as headings so that users who use assistive technology can navigate and read the text. You create the right structure by using tags to provide the correct reading order. There are various guides and tools such as [Adobe Acrobat Pro](#) to help you create a good tag structure.

6 Make or Edit a PDF in Adobe Acrobat Pro

To edit in a PDF, you must have Adobe Acrobat Pro. The free Acrobat Reader is not sufficient. There are also other programmes that can edit PDF documents, but we have not yet found other programmes that can be used to make them accessible.

It usually requires some extra work after the conversion for the PDFs to be accessible. The amount of work required depends on the type of content in your document and the starting point of the base document.

For some documents, it may be enough to check the order, set the correct language, and define how the title should be displayed. To determine exactly what you need to do, you may want to check the document.

The scope of this document does not include the editing of PDF in Adobe Acrobat Pro. As it requires extra skills to edit such documents in this program, therefore, we only provide information about the useful resource that can be used to edit a PDF document in Adobe Acrobat Pro.

Adobe provides a comprehensive and easy to follow guided workflow required to make a PDF accessible – [How to create and verify accessible PDFs by Adobe](#).

Another solution is to convert the scanned document into Word and use the instructions of the current document to turn it into an accessible document.

7 Extra resources

Following are the useful resources that can be useful for making accessible Word and PDF documents:

- [How to make your Microsoft Word document accessible by Microsoft](#)
- [How to create and verify accessible PDFs by Adobe](#)
- [WebAim Document checklist](#)

8 References

- Web Content Accessibility Guidelines (WCAG) 2.1 – <https://www.w3.org/TR/WCAG21/>
- PDF Techniques for WCAG 2.0 – <https://www.w3.org/TR/WCAG20-TECHS/pdf>
- WebAim (PDF and Word Articles) – <https://webaim.org/articles/>
- Gode dokumenter – Universelt utformet by Morten Tollefsen – <https://www.universitetsforlaget.no/gode-dokumenter-1>
- Microsoft Making and Checking the accessibility of your documents – <https://support.microsoft.com/en-us/office/make-your-word-documents-accessible-to-people-with-disabilities-d9bf3683-87ac-47ea-b91a-78dcacb3c66d>
- Make PDFs accessible (Acrobat Pro) – <https://helpx.adobe.com/acrobat/using/create-verify-pdf-accessibility.html>
- Ability.net – Creating Accessible Documents Factsheet – <https://abilitynet.org.uk/factsheets/creating-accessible-documents-0>

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