



axesWord[®]
QuickStart-Guide
V05.2024





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1 What is axesWord®?

1.1 Create a PDF/UA document with one click

axesWord® is an add-in for Microsoft Word to create accessible PDF documents according DIN-/ISO-Standard PDF/UA-1:2012 easily, quickly and reliably.

With axesWord® every Word user is able to create PDF/UA documents. Reworking is no longer necessary. The time-consuming quality control is omitted.

The formula for success is the use of templates and styles which are optimized for accessibility. All other tasks are done by axesWord®.

1.2 Optional: create also an archivable PDF according PDF/A

axesWord® offers additionally the possibility to create a PDF/A document.

1.2.1 What is PDF/A?

PDF/A is a file format for long term archiving of digital documents. This format was standardized by the International Organization for Standardization (ISO) as a subset of the Portable Document Format (PDF).

1.2.2 What is the use of PDF/A?

PDF/A ensures that digital documents are readable, presentable and useable in the long run.

1.2.3 What is the relationship between PDF/A and PDF/UA?

PDF/A is available in several conformity levels: level a (accessible), b (basic), u (unicode). Level a is the highest level. It contains the other levels and requires the availability of tags.

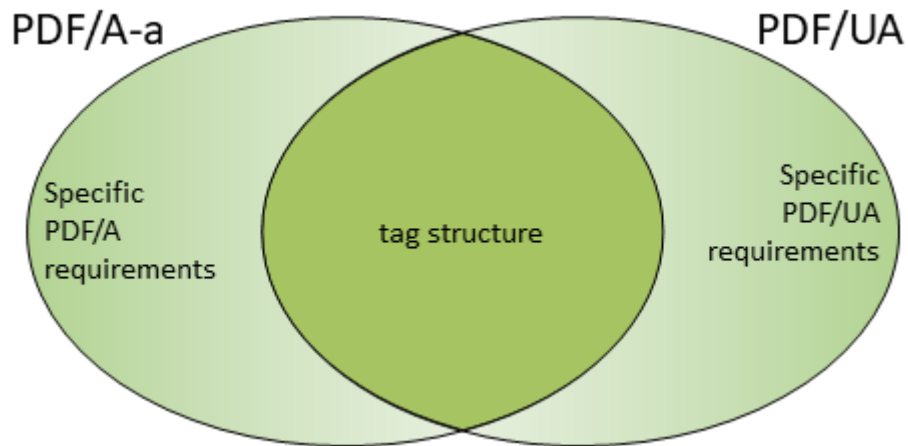


Figure 1: Relationship between PDF/A-a (a = accessible) and PDF/UA. PDF/A-b and PDF/A-u do not require a tag structure.

axesWord® creates a document that conforms to PDF/A-2a. Only if there are characters available which are not mappable to unicode then axesWord® creates a document that conforms to PDF/A-2b, which nevertheless contains the complete logical structure tree.

The number «2» in PDF/A-2a or PDF/A-2b stands for PDF-Version 1.7.



2 Understanding the concept

2.1 How axesWord® works

axesWord® is not only a tool to create PDF documents. The maximum benefit occurs if the Word documents are already prepared for accessibility and working with axesWord®.

It is reasonable to save essential settings and converting rules in the template so that the author has only the following tasks to do:

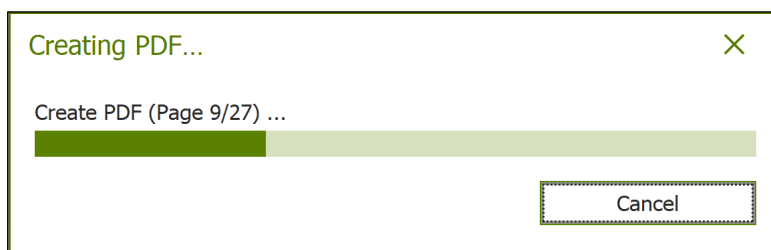
Author tasks

- Use appropriate paragraph styles
- Use corresponding Word functions for specific elements (for example creating captions, footnotes, table of contents, links, references or hyphenation)
- If necessary: add further information to the used roles – for example alternative texts for figures or formulas
- If necessary: change the standard role in case of specific elements

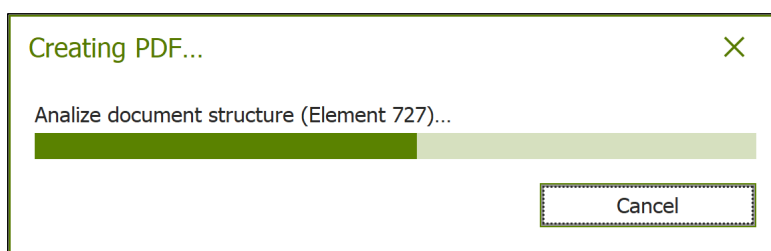
2.2 What does axesWord® do when converting a document?

axesWord® executes a multi-level process when converting a document. The process contains the following 3 levels:

1. Creating a PDF document on the basis of an own conversion

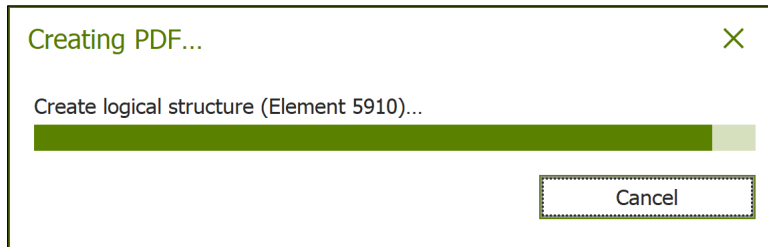


2. Analyzing the Word document





3. Creating a logical structure in the PDF (PDF structure tree) on the basis of Word functions styles and role mapping



This process may take some time in case of big documents.

2.3 Role mapping

To get the best result in terms of accessibility each element of the Word document must have the correct role mapping.

All **Paragraph styles** provided from Word are mapped to a specific role **as default**. In nearly all cases this standard role is fitting. If necessary, you can change the role.

There is also a **default** role mapping for elements created with **Word Functions**. This is the case for captions, footnotes, table of contents, links, references or hyphenation.

For all **Document Elements** a role is already assigned **as default**. axesWord® recognizes automatically the natural semantics of the elements and assigns the corresponding role.

However, in case of **Figures, Tables** and **Text boxes** the role is adjustable. Their standard roles need only to be changed if the natural semantics is not appropriate. This is the matter for **Layout-Tables, Definition lists, Artifacts** and **Formulas**. There is a context-sensitive task pane to adjust the role mapping:

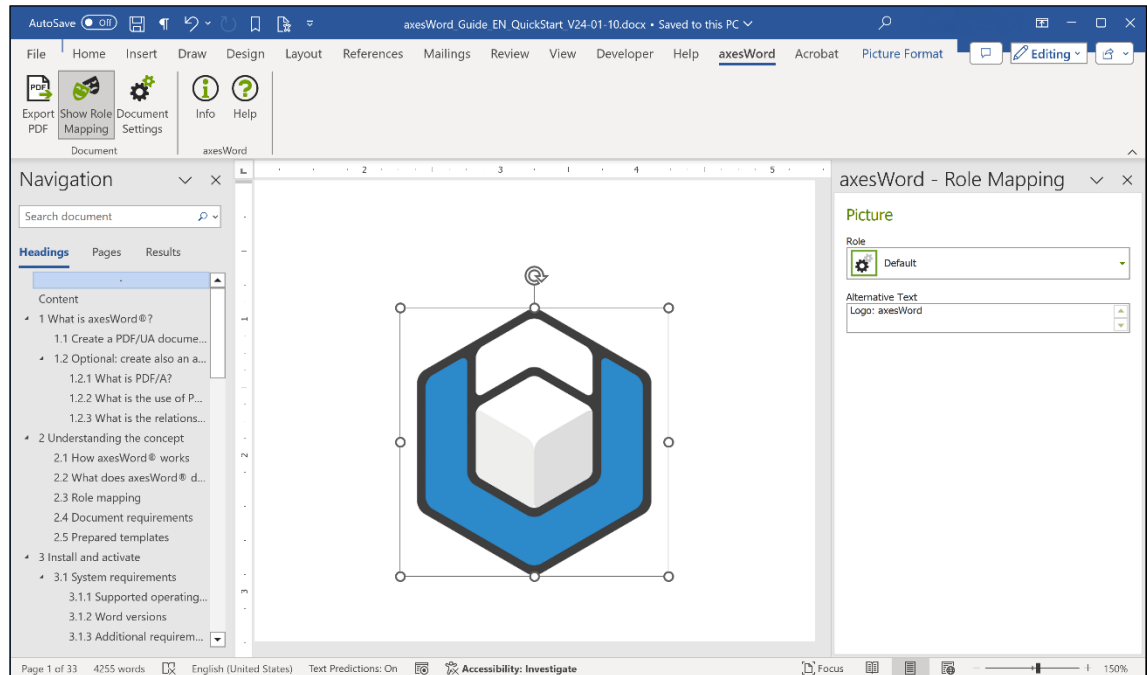


Figure 2: The context-sensitive task pane "axesWord - Role Mapping"

In general, the standard role **Default** is appropriate. An element owns then the role that corresponds to its natural semantics. In the figure above for example the picture has automatically the role **Figure**.

Note

Only in case of figures, tables or text boxes, which do not correspond to their natural semantics the author has to adjust the role mapping.

2.4 Document requirements

A Word document has to fulfill several requirements so that axesWord® can create a PDF/UA conform document:

- Each element has an appropriate **Role mapping**.
- Each element has a defined position in the logical order of the document structure (simply said this corresponds to the **Reading order**).
- Figures have an **Alternative text** or are marked as decorative elements. Latter is called **Artifact** in technical language.
- Formulas have an **Alternative text**, which is normally the linearized form of the formula.
- **Tables** are data tables and not pictures.
- **Column** and **row headers** in tables are marked accordingly.



2.5 Prepared templates

You can use axesWord® with each Word document, also those based on the Word standard template (Normal.dotx). However, you will get the best result if you work with prepared templates.

Such templates make the work for authors much easier when creating accessible documents, as they just have to use appropriate paragraph styles or quick parts.

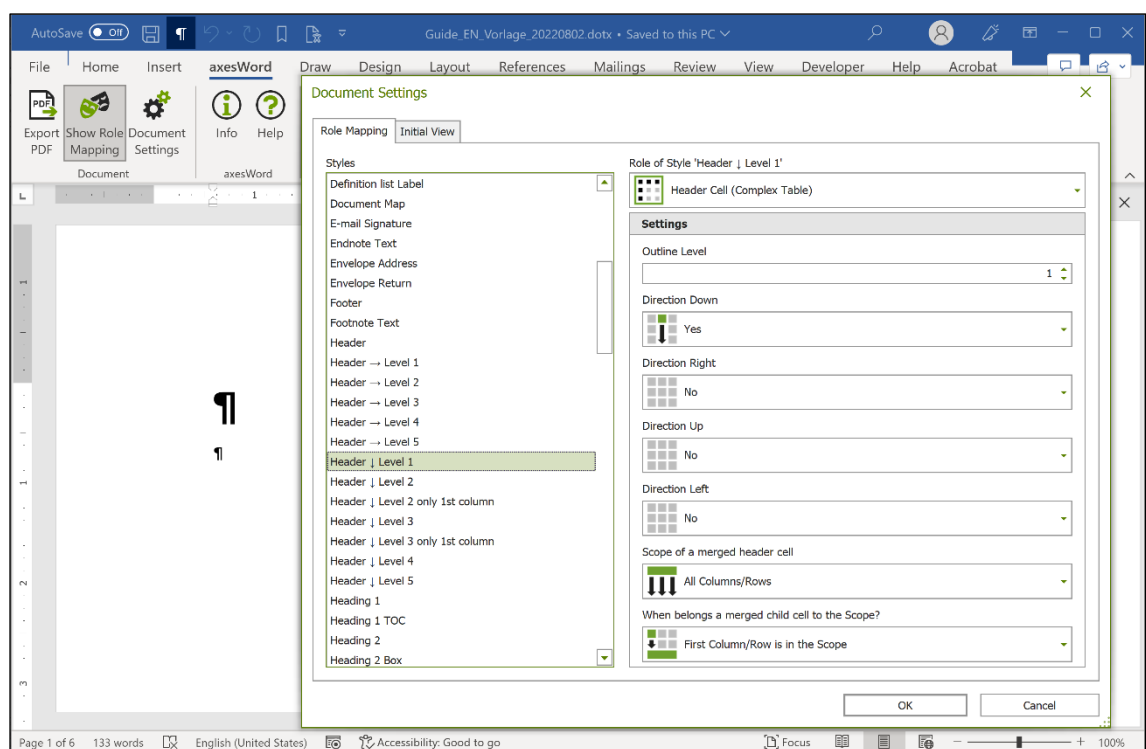


Figure 3: Example of a prepared template to work with axesWord®



3 Install and activate

For installing and activating axesWord® please refer to the articles in our help center: <https://support.axes4.com/hc/en-us/sections/7371764232466--Installing-activating-upgrading->



4 The user interface

4.1 The ribbon tab "axesWord"

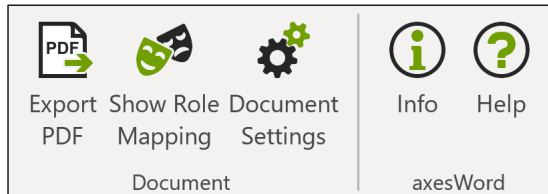


Figure 4: Ribbon tab "axesWord"

4.2 Command group "Document"

4.2.1 Button "Export PDF"

Opens a Dialogue box with several settings to create an accessible PDF document.

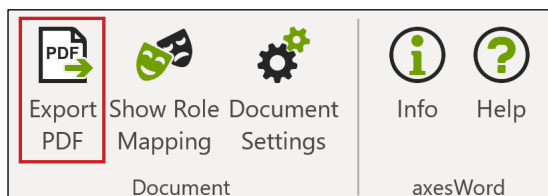


Figure 5: Button "Export PDF"

4.2.2 Button "Show Role Mapping"

Opens a context-sensitive task pane where options are available to change the role mapping of figures, tables, text boxes and header/footer.

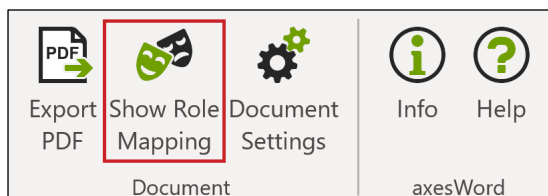


Figure 6: Button "Show Role Mapping"

4.2.3 Button "Document Settings"

Opens a dialogue box with options to assign roles to the available paragraph styles and to set up the initial view of the PDF document.

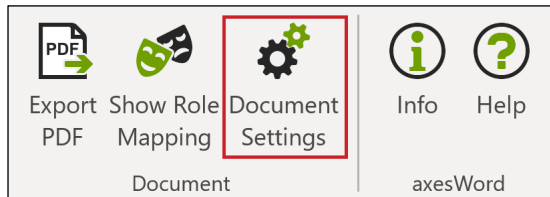


Figure 7: Button "Document Settings"

4.3 Command group "axesWord"

4.3.1 Button "Info"

Shows you information about software version and license activation.

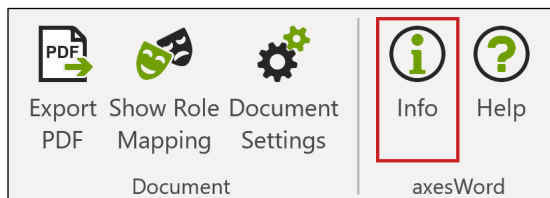


Figure 8: Button "Info"

4.3.2 Button "Help"

Link to [axesWord® Online-Help](#)

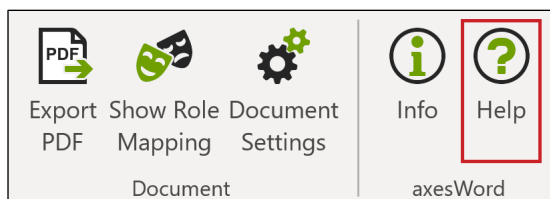


Figure 9: Button "Help"



5 Tools

5.1 Tools for role mapping

We distinguish between 2 tools to adjust the role mapping:

1. The button **Show Role Mapping** which opens the context-sensitive task pane **axesWord - Role Mapping**:

These settings are on element respective object level — for example for figures or text boxes. A manual role mapping is only necessary if the natural semantics of the elements is not appropriate. These changes of the role mapping have to be done by the author.

2. The button **Document Settings** which open the Dialogue box **Document Settings** which contains the ribbon tab **Role Mapping**:

These settings are on document level. Normally this was done by the creator of the template as there is expert knowledge required about accessibility.

5.2 Task pane "axesWord – Role Mapping"

5.2.1 Change role mapping for special elements like figures, formulas, tables or text boxes

You can change the standard role mapping for the following elements in your document if necessary:

- Figures (automatically recognized role **Figure**)
- Tables (automatically recognized role **Table**)
- Text boxes (automatically recognized role **Textbox**)
- Header or footer (automatically recognized role **Artifact**)

Proceed the following steps:

1. Click on the ribbon tab **axesWord**
2. Click on the button **Show Role Mapping** to open the context-sensitive task pane **axesWord - Role Mapping**
3. Click in the document on a **Figure**, **Table** or **Text box** and assign the corresponding role
4. Add an **Alternative text** to all elements which require one (figures, graphs, formulas)

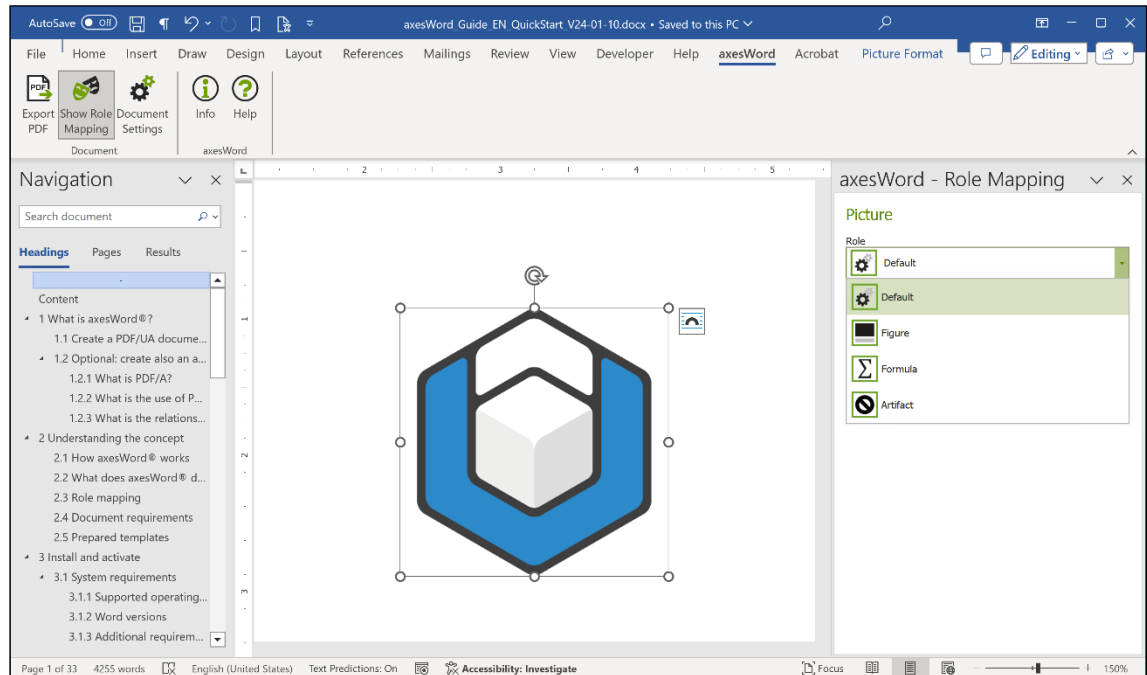


Figure 10: Context-sensitive task pane "axesWord - Role Mapping"

5.2.2 Figures

Pictures, shapes, SmartArt, diagrams and WordArt can be assigned to the following roles:

- **Default**

This setting means that the concerned element is handled according to the information delivered by Word. In case of a figure this is normally the role **Figure**. Do not forget to add an alternative text.

- **Figure**

Select this setting if you want to assign the role **Figure** to the element. Do not forget to add an alternative text.

- **Formula**

Select this setting if you want to assign the role **Formula** to the element. Do not forget to add an alternative text.

- **Artifact**

Select this setting if you want to assign the role **Artifact** to the element. No alternative text is necessary.

**Note**

If you have a figure which consists of several single graphics you should group them to one figure at first or you should create one single figure and insert that instead. Then you can change the role of the figure and/or add an alternative text in a second step.

5.2.3 Tables

You can assign following roles to tables:

- **Default**

This setting means that the concerned element is handled according to the information delivered by Word. In case of a table this is normally the role **Table**.

- **Table**

Select this setting if you want to assign the role **Table** to the element.

- **Layout Table**

Select this setting if you want to assign the role **Layout Table** to the element. Do not forget to define the correct reading order ("Direction") for the rows and columns. In the PDF document no table structure will appear anymore. The elements of the table will be taken into the logical structure tree according to the set direction.

- **Definition list**

Select this setting if you want to assign the role **Definition List** to a table – for example a glossary or a list of abbreviations. The left-hand column becomes a label (structure element "Lb1"), the column(s) to the right of it the corresponding list entry (structure element "LBody").

5.2.4 Text box

You can assign following roles to text boxes:

- **Default**

This setting means that the concerned element is handled according to the information delivered by Word. In case of a text box this is normally the role **Textbox**.

- **Figure**



Select this setting if you want to assign the role **Figure** to the element. Do not forget to add an alternative text.

- **Formula**

Select this setting if you want to assign the role **Formula** to the element. Do not forget to add an alternative text.

- **Textbox**

Select this setting if you want to assign the role **Textbox** to the element.

- **Artifact**

Select this setting if you want to assign the role **Artifact** to the element. No alternative text is necessary.

5.2.5 Header and footer

You can assign following roles to headers and footers:

- **Default**

This setting means that the concerned element is handled according to the information delivered by Word. In case of a header or footer this is normally the role **Artifact**.

- **Section Header**

Select this setting if you want to take the content of a header or footer at the beginning of a section into the logical structure tree.

- **Section Trailer**

Select this setting if you want to take the content of a header or footer at the end of a section into the logical structure tree.

- **Artifact**

Select this setting if you want to assign the role **Artifact** to the element.

Note

You can define the role for headers and footers separately for each section.

5.3 Dialogue box "Document Settings"

Use the Dialogue box **Document Settings** to:

1. assign a specific role to a paragraph style.



2. specify how the PDF should be opened in a viewer, see chapter 8.
3. change advanced settings (define the position of footnotes/endnotes), see chapter x.

5.3.1 Assign a role to a paragraph style

Use the Dialogue box **Document Settings** to assign a specific role to a paragraph style. We distinguish between:

1. Paragraph styles already available in Word:
They are already assigned to corresponding roles. Normally no changes are necessary.
2. User-defined paragraph styles:
You have to assign appropriate roles to those styles. Normally this was done by the creator of the template as there is expert knowledge about accessibility required.

5.3.2 Automatic role assignment

axesWord® assigns roles to paragraph styles automatically when no other assignments are available – for example:

- Headings of level 1-9 (based on outline levels)
- Captions (based on the Word function **Insert Caption**)
- Tables of contents (if they were created by the corresponding Word function)
- Lists (if they were created with the buttons **Bullets**, **Numbering** or **Multilevel List** in Word or if they were assigned to special user-defined paragraph styles)

5.3.3 User defined role assignment

According to the semantic of your user defined style, you have to assign the appropriate role. By default, this is the role **Default**. This role is based on the natural semantics of the element. In most cases this is the role paragraph (i. e. the structure element "P" will be created for the corresponding paragraph).

This automatic assignment can be changed to the following roles:

- Paragraph
- Heading (outline level 1- x)
- List continue (outline level 1-10)
- Caption
- Blockquote
- Table header (complex table)



- Table header (simple table)
- Artifact

Typical examples for user-defined paragraph styles are column or row headers in tables.

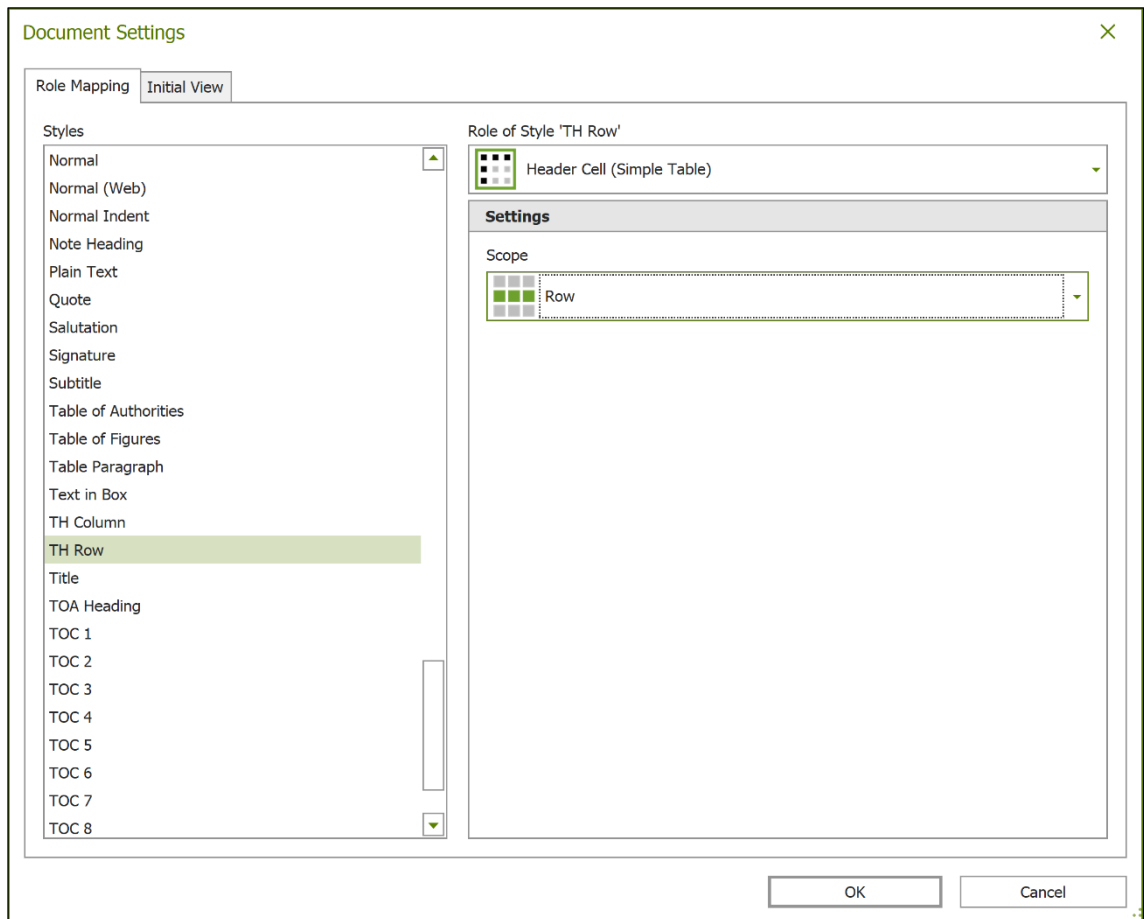


Figure 11: Dialogue box "Document Settings"



6 How to use axesWord® effectively

6.1 Use styles

Use the styles already available in Word or use your user-defined styles for which you have assigned a role with the Dialogue box **Document Settings**.

6.1.1 Get started

Check which styles are available.

6.1.2 Headings and other paragraph styles

Ideally you use the styles displayed in the ribbon tab **Home**. Define with them the appearance of your paragraphs, headings, lists and indentations and spacings.

The styles are already prepared in a way so that your text looks good and will help you to communicate your ideas.

Note

Take care of the outline level if you use heading styles.

6.1.3 Character styles

Additionally, you can use character styles to emphasize single elements. They have only an optical impact and no impact on the logical structure tree.

6.2 Figures

Decide whether your figures are relevant content or just decorative elements.

6.2.1 Relevant content

- Anchor your figures if they do not have the layout option **In Line with Text**
- Add an alternative text in the task pane **axesWord - Role Mapping**

6.2.2 Decorative elements

- Change the role in the context sensitive task pane **axesWord - Role Mapping** to **Artifact**.



6.3 Tables

Decide whether your table is a data table, a layout table or a definition list and assign the corresponding role.

The screenshot shows the axesWord interface with a document titled 'axesWord_Guide_EN_Create-accessible-tables_2022-10-25.docx'. The 'axesWord' ribbon is active, showing options like 'Export PDF', 'Show Role Mapping', 'Document Settings', 'Info', and 'Help'. The main document area contains a table with the following data:

Date	Max. Temperature	Min. Temperature	Weather
29.04.2020	23 °C	13 °C	cloudy
30.04.2020	20 °C	11 °C	light rain
01.05.2020	19 °C	8 °C	cloudy
02.05.2020	21 °C	13 °C	slight rain
03.05.2020	20 °C	11 °C	slight rain

The 'axesWord - Role Mapping' task pane is open on the right, showing a 'Table' role selected. The document content also includes a section titled '4.1.1 → What styles are used with which role mapping?' with a smaller table below it:

Date	Max. Temperature	Min. Temperature	Weather
29.04.2020	23 °C	13 °C	cloudy
30.04.2020	20 °C	11 °C	light rain

A callout box points to the 'Max. Temperature' header cell in the second table, indicating the style 'Header Column'.

Figure 12: Role mapping for table

6.3.1 Data tables

- Mark the column and row headers by using the corresponding user-defined paragraph styles.

6.3.2 Layout tables

- Change the role in the context-sensitive task pane **axesWord - Role Mapping** to **Layout Table** and define the **Direction**.

6.3.3 Definition lists

- Change the role of a table in the context-sensitive task pane **axesWord - Role Mapping** to **Definition List**.



6.4 Text boxes

Text boxes have the role **Textbox** as default. You can change this setting in the context-sensitive task pane **axesWord - Role Mapping**:

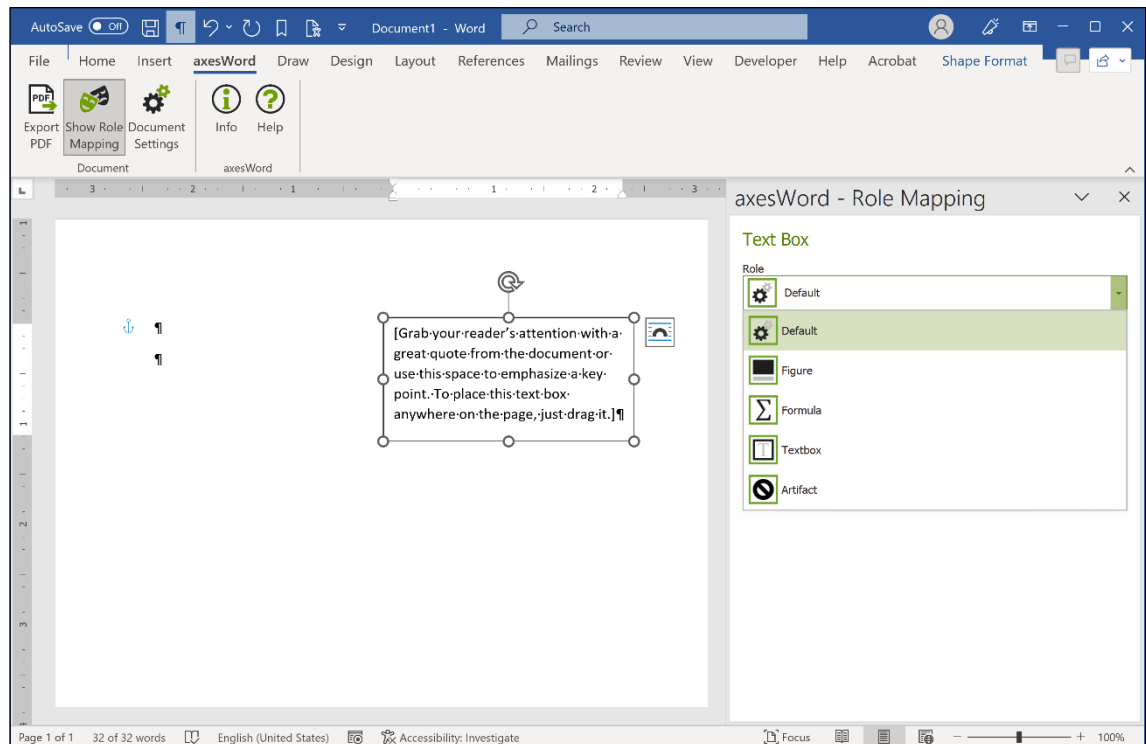


Figure 13: Role mapping for text box

Normally you will use text boxes to position textual information somewhere on a page. Assign them the role **Textbox**. Additionally, anchor the text boxes to define their position in the reading order.

6.4.1 Adopt Text Frame Link

In Word, you can set a link on the text box as a whole. To do this, right-click on the text box to open the context menu.

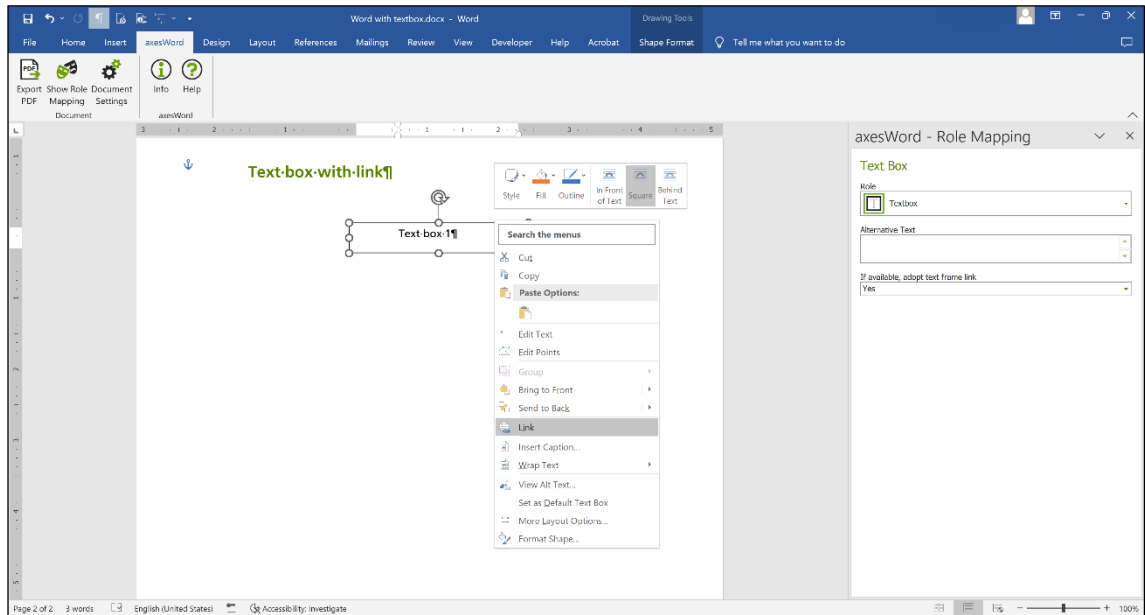


Figure 14: Text box with context menu

Click **Link** on the context menu, and then enter the link as usual in the subsequent Dialogue box.

For these text box links, you can use axesWord® to specify whether the link should be included in the PDF. To do this, select **Yes** from the drop-down list box **If available, adopt text frame link**.

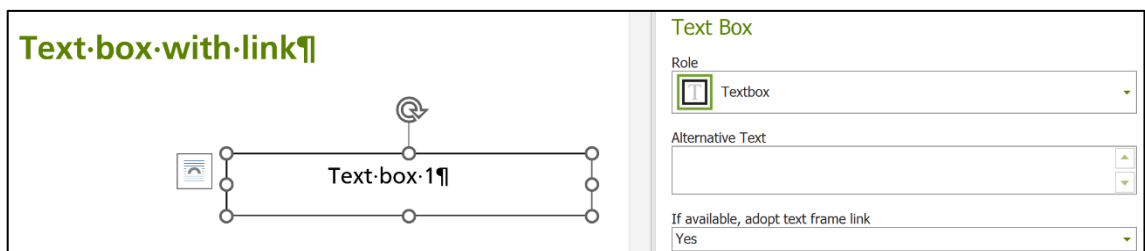


Figure 15: axesWord® settings for text box links

In the following figure, you can see the result in the logical structure tree in the PDF. The content of the text box is in a "Div" structure element, which in turn is within a "Link" structure element.



Figure 16: Logical structure tree for text box with link

6.5 Links

- Create active links to jump within your document or to call web sites.
- Test their function already in the Word document.

6.6 Enumerations and lists

Simple lists with only one level will be converted correctly.

However, for the following elements you need user-defined paragraph styles:

- Multilevel lists
- List Continue

6.7 Define the language

Define the language of your contents: select the content and check respective assign the language with the Word function.



Figure 17: Bottom line in Word with language information

To change the language, click on the language in the bottom line of Word. In the Dialogue box **Language**, you can select the correct language.

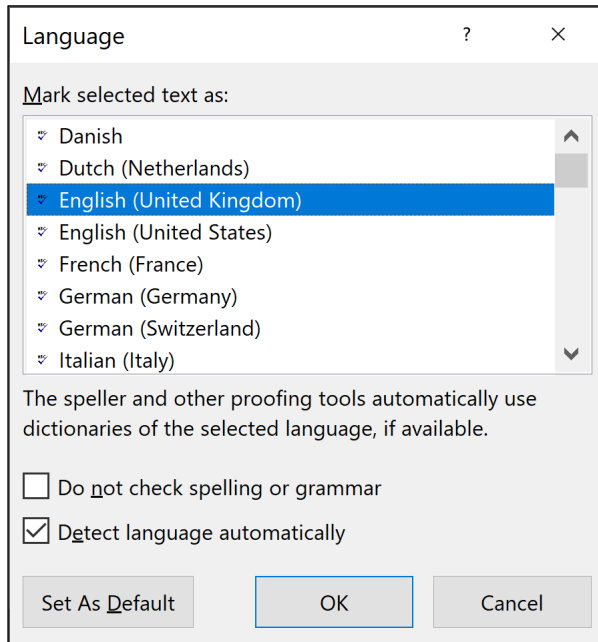


Figure 18: Dialogue box: Language

6.8 Document title

Ideally you define a document title before converting your document within the Word document properties.

Click in Word on the ribbon tab **File**. In the text box **Title**, you can edit the document title.

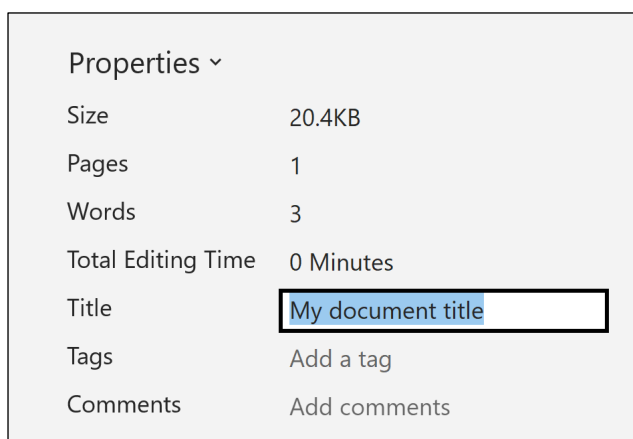


Figure 19: Word document properties: Text box "Title"



6.9 Headers and footers

Headers or footers are assigned to the role **Default** as default. That means that headers and footers do not appear in the structure tree of the PDF document. You can change this setting in the context-sensitive task pane **axesWord - Role Mapping**:

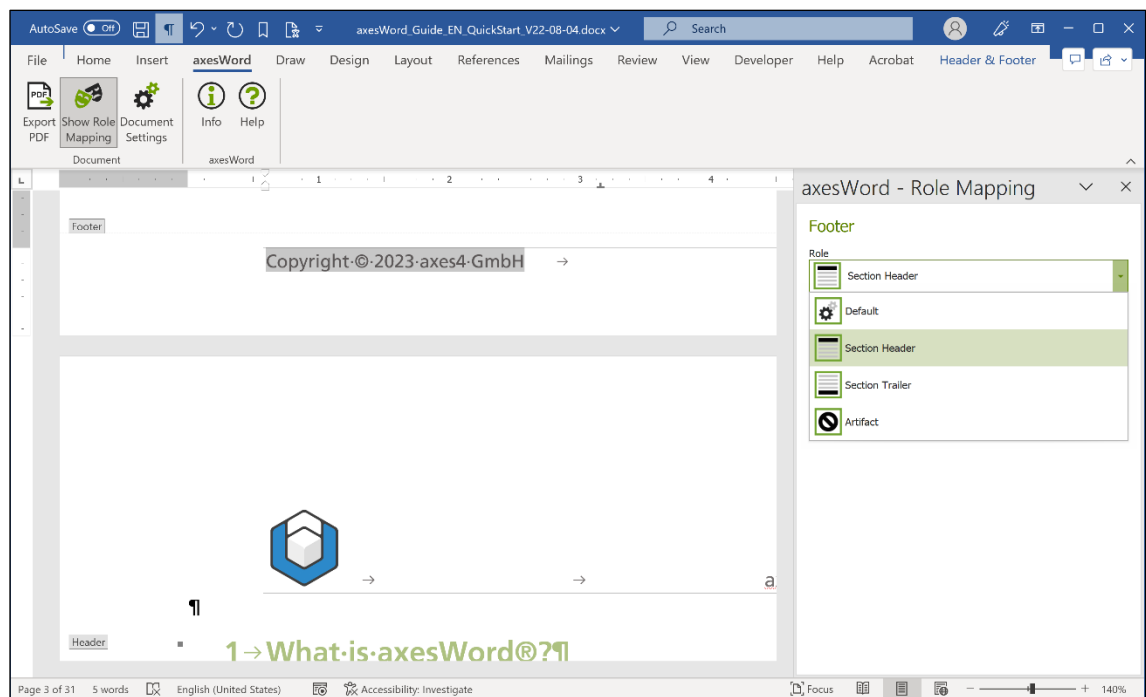


Figure 20: Role mapping for header or footer

Select the role **Section Header** when the header or footer shall appear at the beginning of the logical structure tree in the corresponding section.

Select the role **Section Trailer** when the header or footer shall appear at the end of the logical structure tree in the corresponding section.

Select the role **Artifact** to mark headers and footers as decorative elements.

Note

The role mapping can be done separately for each section in your Word document.



7 Create an accessible PDF

1. Click in the ribbon tab **axesWord** on the button **Export PDF**
2. In the text box **PDF Filename** you can define the filename and memory location. As default the name and memory location of the Word document is used.
3. Check if there is a document title in the text box **Document Title**. Change or add one if necessary.
4. Check if in the drop-down list box **Main Document Language** an appropriate language is set. Change it if necessary.
5. Activate the check box **Open PDF Document in Default Viewer** so that your PDF document will be shown in the default viewer after conversion has finished.
6. Activate the check box **PDF/A** to create a PDF document in PDF/A format.
7. Click on the button **Create** to start the analyzing and conversion procedure.

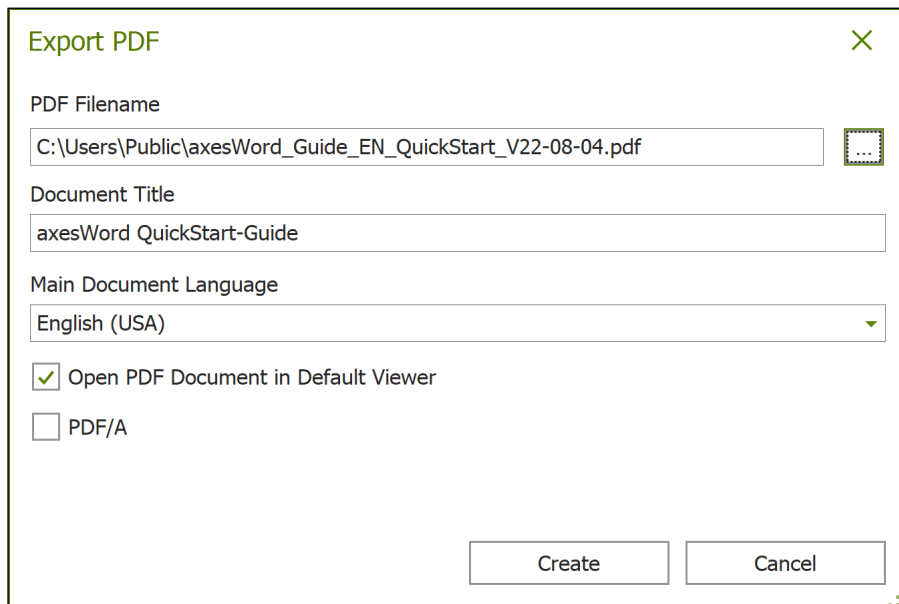


Figure 21: Dialogue box "Export PDF"



8 Settings for initial view after opening the PDF

You can use axesWord® to specify how the PDF should be opened in a viewer. To do this, click the button **Document Settings** and then click on tab **Initial View**.

All recommended default settings are already set there.

If necessary, you can adjust them according to your wishes.

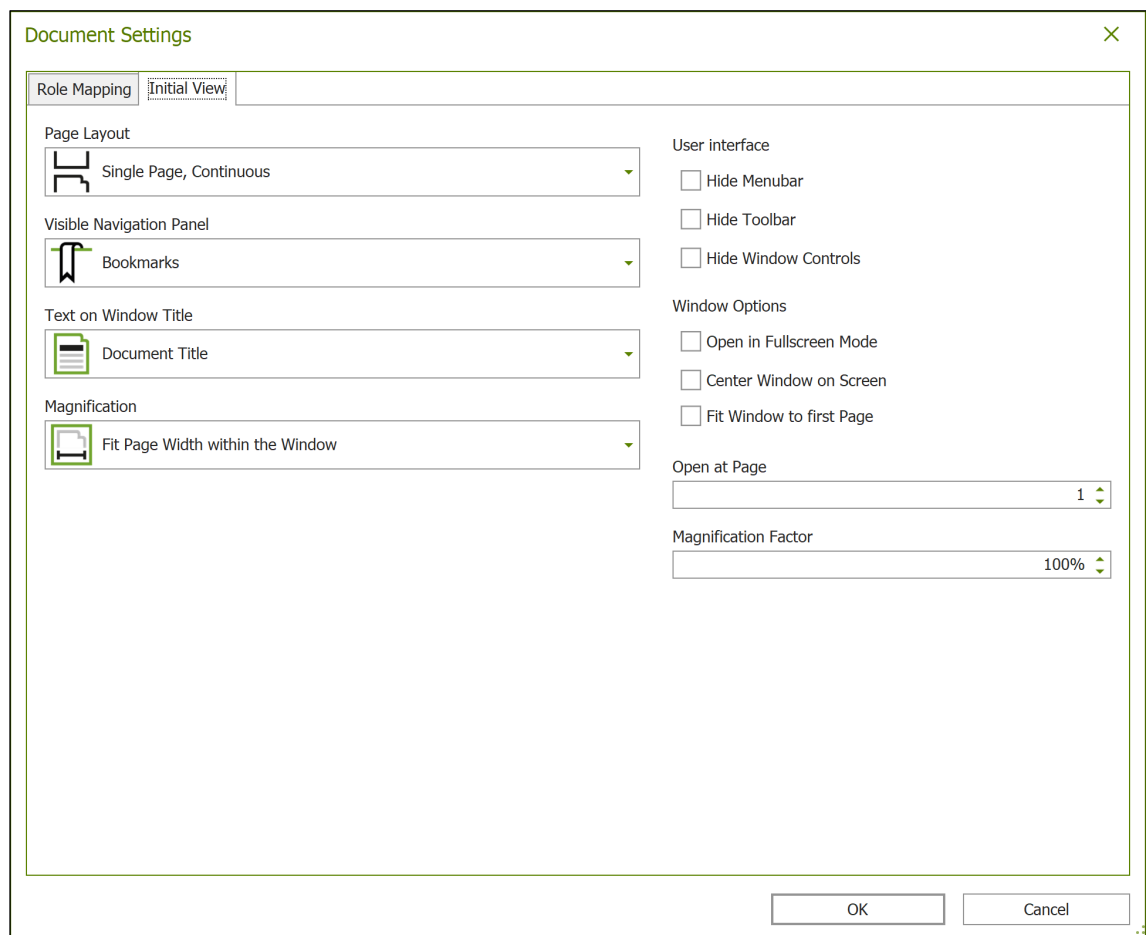


Figure 22: Dialogue box “Document Settings” with “Initial View” tab



9 Advanced settings

You can use axesWord® to specify where footnotes/endnotes should be positioned in the logical structure tree. To do this, click on the **Document Settings** button and then on the **Advanced** tab in the dialog box.

The default setting is that all footnotes/endnotes (i. e. all "Note" structure elements) are listed at the very end of the logical structure tree (menu option **After the document**).

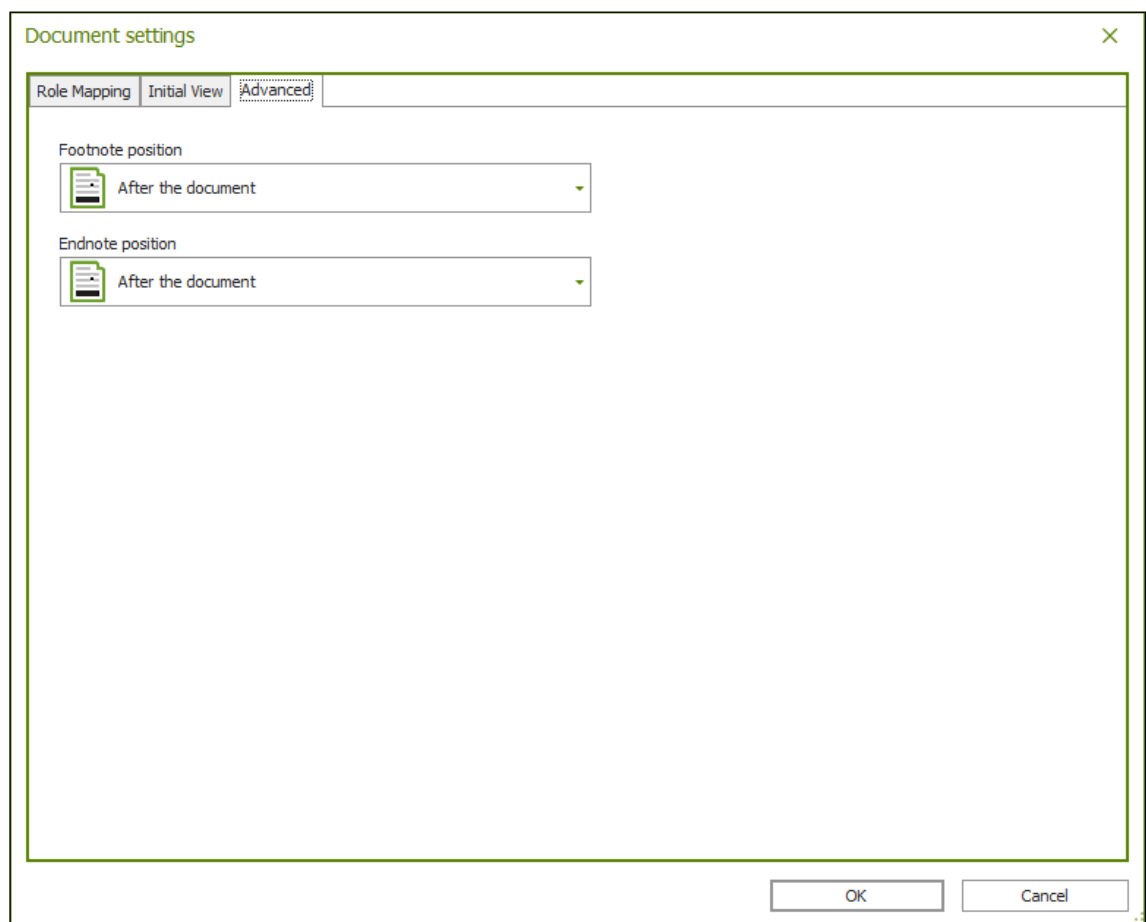


Figure 23: Dialogue box "Document Settings" with "Advanced" tab

If desired, you can change this setting - separately for footnotes and endnotes - so that the footnotes or endnotes are listed directly after the respective paragraph (select the menu option **After the paragraph** from the drop-down list box).

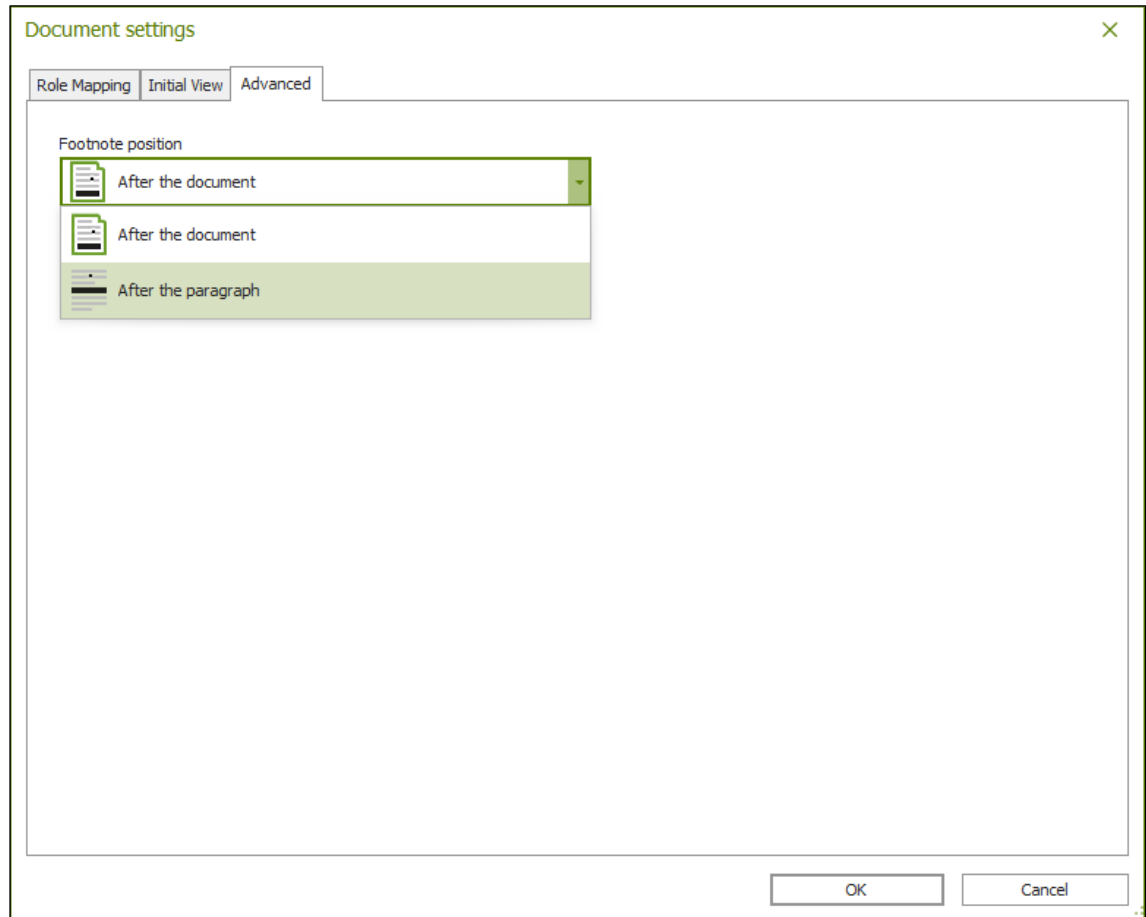


Figure 24: : Dialogue box "Document Settings" – drop-down list box "Footnote position"



10 Check accessibility of your PDF document

Check the quality of your final PDF document with a checking tool which executes a PDF/UA check, for example the free **PDF Accessibility Checker (PAC)** or the free trial version of **axesPDF®**.

10.1 Download checking tools

10.1.1 PDF Accessibility Checker (PAC)

<https://pac.pdf-accessibility.org/en>

10.1.2 axesPDF®

<https://www.axes4.com/en/products-services/axespdf/download>

10.2 Evaluate the results

If you have worked with Word properly, **axesWord®** will create an accessible PDF document. The document will pass an automatic PDF/UA check, which checks all requirements that can be checked by a machine.



PAC 2024 - PDF Accessibility Checker

PAC

Open document

Title: **axesWord QuickStart-Guide**

Filename: **axesWord_Guide_EN_QuickStart_V24-01-10.pdf**

Language: **en-US**

Pages: **33**

Tags: **821**

Size: **1 MB**

PDF/UA ✓ WCAG ✓ Quality ✓

The PDF/UA requirements checked by PAC are fulfilled.

Checkpoint	Passed	Warned	Failed
✓ PDF Syntax (ISO 32000-1)	891	0	0
✓ Fonts	11	0	0
✓ Content	63334	0	0
⊗ Embedded Files	0	0	0
✓ Natural language	30759	0	0
✓ Structure Elements	217	0	0
✓ Structure tree	821	0	0
✓ Role mapping	836	0	0
✓ Alternative Descriptions	1642	0	0
✓ Metadata	3	0	0

Results in detail PDF report

Figure 25: PDF/UA Check with PDF Accessibility Checker (PAC)



11 Glossary

Anchor	Assignment of a figure or a text box (which are not used inline) to a paragraph of the main content. The anchoring defines the position in the logical structure tree.
Artifacts	All elements in a document, which have decorative character and/or are not relevant content. Examples are background pictures, printer's imprints, page numbers or texts from headers and footers which appear repeatedly on several pages. Artifacts are not part of the structure tree and are not processed from assistive technologies.
Assistive Technologies (AT)	Technical aids, which enable disabled persons to adapt digital contents according to their needs. Examples are screenreaders for blind persons or a Braille line.
Button	Interactive element, with which specific functions can be executed or tools can be started.
Caption	A caption is a description text for a table or a figure and is positioned below or above the corresponding element. Captions are often numbered. In Word it is possible to create tables of content on the basis of these captions.
Context-sensitive	Means a representation or function, which is differently depending on the context
Data table	A grid or matrix used for presentation of data.
Definition list	Special form of a list with individual labels: The label can be an expression or an abbreviation, the related list entry contains the corresponding explanation.
Dialogue box	Element of the user interface which appears after starting a function; requires an interaction like an input, confirmation etc. A typical Dialogue box is the window for creating an accessible PDF document in axesWord®.
Element	Generic term for all possible objects in a document: paragraphs, figures, formulas, etc.



Figure	Generic term for all pictographic objects in Microsoft Word
Glossary (see also Definition List)	List of expressions with corresponding explanations
Layout-Table	A table, which is used for layout purposes and not for the presentation of data.
Linearized view	View of contents which are ordered one after another
Link	Link between a source element (text or figure) and a destination element (foot-/endnote, reference, website, email address)
List continue	Further paragraphs within one list item
Logical document structure	<p>All tags sequenced in a hierarchical structure build up the logical document structure. So this structure does not necessarily correspond with the appearance of a document, but with the division in meaningful units and elements. Therefore there is a logical information flow from one unit to another.</p> <p>The logical document structure is the basis for a machine-readable document. And so it is also a precondition for an accessible document. A PDF-document, which has a logical structure, is called a "Tagged PDF".</p>
Logical order	<p>Logical order is the unambiguous linearized order of all content elements so that there is a logical information flow.</p> <p>The logical order results from the logical structure tree. It is independent from the positioning of an object on the respective page, even though logical order and visual positioning should be identical ideally – at least in documents with a simple layout.</p> <p>You can check the logical order by viewing the structure tree. The sequential arrangement of the tags determines the logical order. Simplified speaking, the logical order corresponds to the reading order (e.g. in case of assistive technologies).</p>



Multilevel list	A list with more than one outline level. Also referred to nested list.
Table header	Heading of a data cell, column or row. A data cell is only understandable if you know the corresponding header cells. This can be column headings or row headings.
Task pane	A task pane delivers a specific perspective on a document and provides options for analysis and evaluation, often also options to change settings or for editing.
Text box	A container for text which can be positioned freely.
Tool group	You find tool groups within the ribbon tabs. Each group contains tools which belong thematically together (e.g. the tool group Document).