
Amgraf's

**OneForm Designer Plus
Accessibility Tagging Options**



Reference Manual

OneForm™ Designer Plus

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CHAPTER 1

Introduction

This document describes the OneForm Designer Plus (OFDP) software features and operator procedures required to create Accessible PDF forms for visually impaired individuals.

Visually handicapped persons can now use accessibility technology such as screen reading software to help them navigate through documents and pages on their computers. However, documents vary in complexity depending on their purpose. The screen reading software often needs to have additional structure beyond the pure graphical elements of the pages in order to assist in the user's understanding and navigation.

Many forms are "complex" documents that have directions, sections, tables, questions, response fields, checkboxes, logos, and other information that must be navigated in a logical order (as opposed to reading order). Although sighted persons can quickly browse through the form to gain a comprehension of its size, organization, and scope, visually impaired persons need to have this overview verbalized.

Electronic form details can also cause difficulties, for example, captions for fill-in fields can be above, under, or to the left of the fill-in fields. Some answers are yes/no, and some require a paragraph of explanation. Electronic forms also have the requirement to key accurate data into fill-in fields in order to submit information.

With the OneForm Designer Plus Accessibility Tagging options, the production of Section 508 compliant electronic forms is simplified. The accessible PDF forms produced with OFDP are compatible with both Adobe Acrobat Pro and Reader, and directly usable with the JAWS for Windows screen reading software from Freedom Scientific.

OneForm Designer Plus delivers the following benefits:

- Form designs can be imported from almost any desktop publishing or forms drawing system.
- The look and feel of the paper form is preserved. This reduces design and training costs and allows users to gracefully migrate to the Internet with fillable PDF forms as needed.
- When needed, a paper form can be printed on-demand.
- OneForm e-forms are compatible with all popular browsers, including Microsoft Edge, Chrome, and Firefox.
- No filler-license software or license fees are ever required to use electronic forms created with Amgraf's OneForm Designer Plus.

Accessible Form Creation Overview

Accessible PDF forms are similar to standard PDF forms. The primary difference is the addition of an elemental tagging structure within the form file to control the screen reading software's behavior. These tags hold descriptive information for the content and the fill-in fields on the form, and navigational pointers to help the user move through sections of the form in the correct sequences.

OneForm Designer Plus has many features and functions to simplify the design and development of PDF forms.

- Language Selection
- Auto Tagging Function (Accessibility Feature)
- Set Content Reading Order (Accessibility Feature)
- Edit Accessibility Tags (Accessibility Feature)
- Save As PDF
- Open and Save PDF File within Adobe Acrobat Pro
- Run PDF through Adobe's Accessibility Checker
- Test Screen Reading of PDF Form in JAWS for Windows

The following chapters contain detailed descriptions and simulations of screens and menus showing the accessibility options within Amgraf's OneForm Designer Plus software.

Setup Requirements for the Accessibility Tagging

To use the Accessibility Tagging options and test the accessible PDF forms produced, you will need to obtain and install the following software:

- OneForm Designer Plus Version 8.0 and higher, set to use the "EForms" OneForm Profile.
- OneForm Designer Plus PDF Generator Module and Accessibility Module
- Acrobat Pro 8.0 or higher
- JAWS for Windows (16 or higher) screen reading software from Freedom Scientific. More information on JAWS can be obtained at:

<http://www.FreedomScientific.com>

Glossary of Terms Used

Accessible Element Tags – Through the Accessibility Auto Tag feature of OFDP, the accessible components of a form (Text, Fields, Images, and Barcodes) are assigned GUID numbers which turns them into accessible element tags for identifying each accessible component which can contain Spoken Text. All new components created will need GUID's assigned through the Auto Tag feature.

Artifacts – Graphical items on the document that are not defined for accessibility. For example, graphical lines on a form.

Artifact Text – Repeated text on a form that would be confusing to read every time, is considered an "Artifact" element. The text is on the form, but when tagged as an artifact, is not spoken. For example, repeated text such as (Date Format mm/dd/yyyy) appears under the date fields on the form. But the format is also described in the field itself. Removing the element from the reading list marks it as an "Artifact" and stops it from being read. This makes the form easier to understand as the user moves through the items of the form. "Artifact" text is noted in the reading list and the element's reading order number changes from white to red.

GUID (Globally Unique Identifier) – A number assigned to uniquely identify each component tagged for accessibility. These numbers are generated by the program and are never repeated or reused. The components hold its number in the pop-up menu. All new components created will need GUID's assigned through the Auto Tag feature.

OFDP – OneForm Designer Plus Software by Amgraf, Inc.

PDF (Portable Document Format) – Adobe Acrobat (PDF) Portable Document Format. OneForm's "Save As PDF" tool saves to a PDF file.

Reading Order – The reading order is the route JAWS takes when reading the accessible elements. Auto Tag will automatically "Sort Elements into Reading Order" to get a reading number assigned to each element. This is the minimum requirement.

Section – Section (Focus) Fields are no longer necessary with this version but must be honored within older files for legacy purposes. They are a container of multiple accessibility tagged elements made up of Text and Fields. Section (Focus) fields help navigation of reading order by arranging each section consecutively. With the new reading order enhancements, this is automatically taken care of through "sort by reading order".

Spoken Text – This is what is actually read by JAWS. By default, all text elements are read. In some cases, this may not be enough explanation. Each accessible element can have its spoken text changed to suit your needs through the Edit Tag Dialog. The Adobe Acrobat Pro Accessibility Checker also requires that images and fields have spoken text.

CHAPTER 2

The Accessibility Tagging Options

The Accessibility Options are found under the Accessibility Tool and the Options menu. These options create, sort, and edit the accessible element tags.

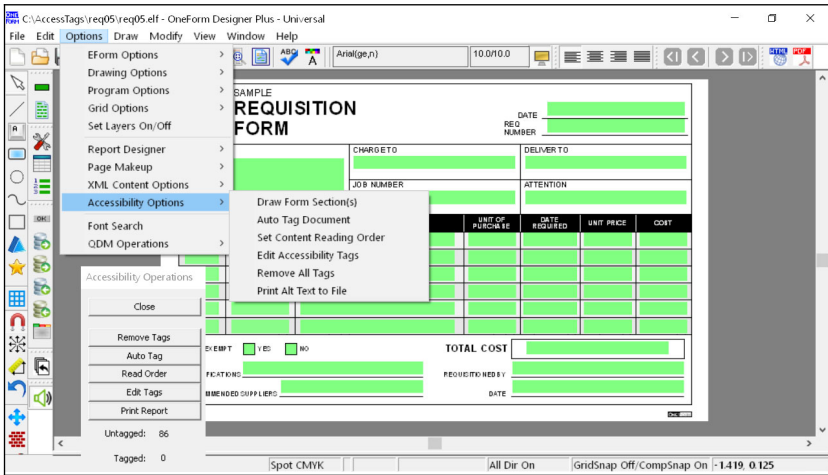


Figure 2-1: Accessibility Tool Panel and Menus

Following is a complete list of the accessibility options:

Menu Options

- Draw Form Section(s)
- Auto Tag Document
- Set Content Reading Order
 - Save Reading Order
 - Sort Elements into Reading Order (LRTB)
 - Restart Reading Order
 - Set Reading Order Number
 - Set Very First Reading Item
 - Start Removing From Reading Order
 - Depth Order Items in Reading Order
 - Start Restoring To Reading Order
- Edit Accessibility Tags
- Remove All Tags
- Print Alt Text to File

Tool Panel

- Auto Tag
- Reading Order
- Edit Tags
- Remove Tags
- Print Report

Auto Tag Document

Also available are several accessible element viewing options:

- View, EForm Fields, Focus (Section) Fields Only Toggle
- View, EForm Fields, Normal and Focus (Section) Fields Toggle
- View, Form Reading Order Toggle
- View, Form Access Dialog (Edit Accessibility Tags)

Draw Form Sections

Section Focus fields are no longer required for the navigation of the reading order. But if they have been used in older files, they will be honored. With version 9.3.0.0, sections are only required for spoken text using accessibility table tags and is discussed in *Chapter 5*.

Auto Tag Document

Selecting **Auto Tag** from the Accessibility Tool or Menu analyzes the form and its components. It marks all fields, text components, barcodes, and raster components (images) as access elements and reports how many elements it found.

If you are modifying an existing accessible form, always run **Auto Tag** to get the new components marked as an element. It will report how many elements have been tagged.

Untagged items reported are usually hidden fields.

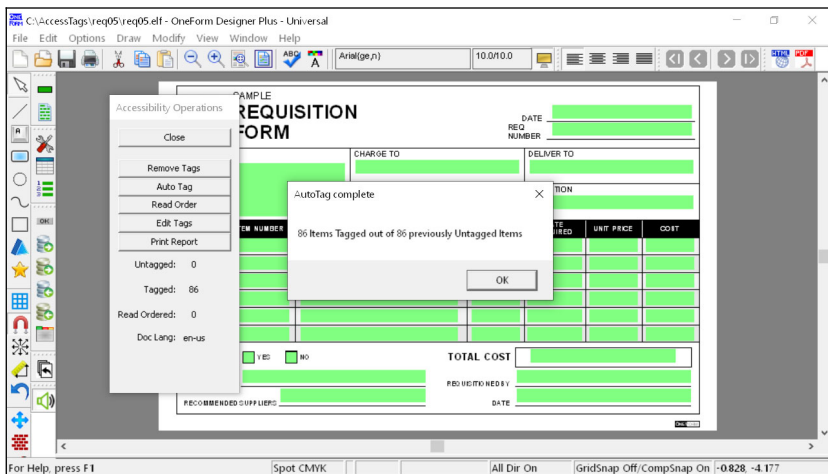


Figure 2-2: Auto Tag Your File

Before Auto Tagging decide what type of accessible form you need as your "Output Intent":

- **Paper Form with No Fillable Fields (Fields have No Spoken Text) or**
- **A Fillable Form with the Field Help Text as Spoken Text**

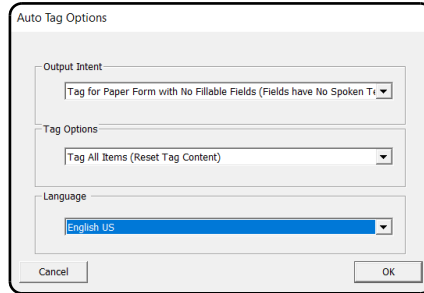


Figure 2-3: AutoTag Options Dialog

Then you have a choice of "Tagging Options": All, Untagged, or the Component Picked.

- **Tag All Items (Reset Tag Content)** – This is for tagging a new form or wanting to start over with an existing accessible form. If you use this on an existing form, it removes the existing tags with their current enhanced text and retags everything fresh.
- **Tag Only Untagged Items** – This is used to update an existing accessible form. It will locate all untagged items and tag them.
- **Tag Only Current (picked) Item** – This new feature lets you tag a selected component through the right-mouse pop-up menu. *Example:* Pick the newly added component with your cursor and right-mouse to get the pop-up menu. Select Autotag and Okay. It will autotag just that one component.

Set Content Reading Order

The reading order is the route JAWS takes when reading the accessible elements. The minimum requirement is to "Sort Elements into Reading Order" through the Set Content Reading Order menu. This is done automatically the first time Reading Order is opened (after Auto Tag) to get a reading number assigned to each element.

When in this option, Reading Order numbers appear representing the reading order. These numbers are centered within each element. White reading order numbers are the default, meaning the element will be read by JAWS. Text elements can have Red numbers meaning the text has been marked as an "Artifact" and will not be read by JAWS. If you see Yellow, it means that element has lost its tag. Run Auto Tag again.

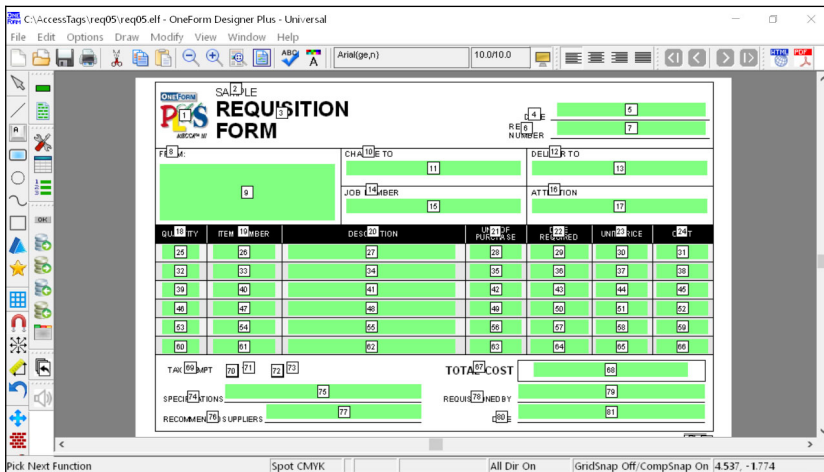


Figure 2-4: Reading Order Number Appear

Below are descriptions of each menu. The first four listed are the most commonly used.

Save Reading Order – This will save your content reading order settings.

Sort Elts into Reading Order – This will always be the first step in setting a reading order. This sorts the elements and assigns all of the reading order numbers, and depth orders the elements into their manageable order. This is automatically done after Auto Tag and you MUST Save the Reading Order immediately before making any other changes. Just right-click to get the pop-up menu and select Save Reading Order. You can go back and make other modifications afterwards.

Restart Reading Order – You can reset the reading order by selecting this option and picking on the preceding element number to the one you want to change. In other words, you want to pick the first correct element number, then start picking the ones that are to change after it. You will be picking the

component for that number, so adjust your Zoom accordingly. Note: This works similar to Tabbing Order for fields.

At anytime you can right-mouse and restart, by picking a good element number and continuing from there.

Start Removing From Reading Order – Click on the item that you want NOT read and the number will turn red, representing an "Artifact". Text, Barcodes, and Images and can be "Removed from the Reading Order". Fields cannot be ignored by JAWS because the cursor will always locate them. Note: If you do not want the cursor to go to the field, make its properties read-only or hidden.

Set Very First Reading Item – This sets the element to be reading order number 1. Use this option to choose a different beginning reading order. The second element you pick will be reading order number 2, etc.

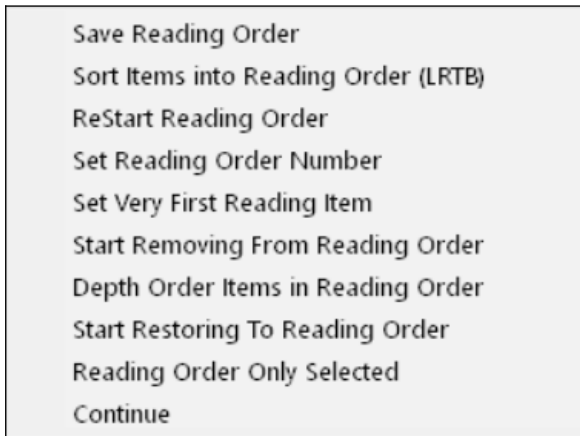


Figure 2-5: Reading Order Options

Set Reading Order Number – You use this to assign a specific number to an element. After clicking on Set Reading Order Number, a dialog will pop-up so that you can type in the reading order number. You then select the element and its number will change.

Start Restoring to Reading Order – Pick on the red reading order number that needs restored and notice it becomes white again with a zero number. Do a restart and pick the prior number and then the zero to assign it a number.

Depth Order Items in Reading Order – The depth order of elements are as they are composed. This will change their depth order relationship to be the reading order. This works well when you have items on top of each other.

Reading Order numbers can also be seen through the "View, Form Reading Order" option, but they cannot be changed.

Edit Accessibility Tags

After arranging the elements into their proper reading order, you can apply needed enhanced spoken text to any of the elements. This is done through the **Edit Tags** (or **View, Form Access Dialog**).

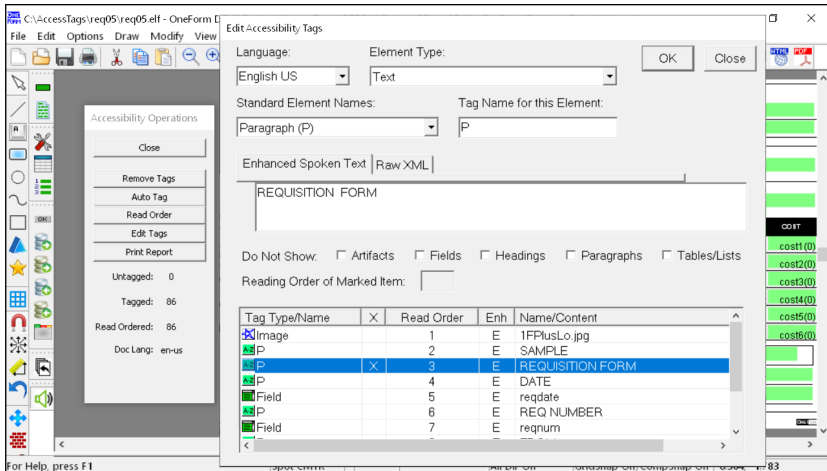


Figure 2-6: Add Enhanced Spoken Text

All of the elements will have spoken text attached to them at the time they become tags through Auto Tagging. They will also be marked as "(E) Enhanced" to make it easier, because only items with an "E" have their enhancement text read. To make a change to what it says, simply highlight the element and type in the change to be read in the window above, labeled "Enhanced Spoken Text". As you select a tag in the accessible list, the component will also be highlighted on the page so that you know which piece you are modifying.

Paragraph elements will read their text automatically. You will only need to edit those which need additional embellishment. If you want a text element to be skipped and not read at all, mark it as an "Artifact" using the Remove from Reading order option. Just blanking out the spoken text will not work.

Tags marked with the "E" in the Enhanced column, will read from the Enhanced Spoken Text window, those not marked with an "E" will read from the composed text printed on the PDF file.

All Field elements will pull in its help message or be blank (if there is no help). As you select a tag in the accessible list, the field will be highlighted on the page. Also, the dialog shows the field name, so turning on View, EForm Fields, Show Field Names for the fields can also help you determine which one you are editing. Fields cannot be turned into Artifacts or ignored, so we have developed ways to handle all situations.

Image elements will pull in the alternate text of the Raster component properties (which is usually the image name) when they are Auto Tagged. This should be enhanced to be more understood, so keep it marked as "E" Enhanced, and type in your spoken text enhancement. If you want the image ignored, mark it as an Artifact.

Options on the Edit Accessibility Tags Dialog:

Language – The form can be defined as either English or Spanish (Mexico). The language by default is in the form’s Drawing Properties. Here it can be modified for an individual element.

Element Type – Text, Image (Raster Logo or Photo), Fill Field, Graphic Object (Vector, Box Area, etc.), Barcode, Artifact (Ignored by JAWS), Section (Only Required for Tables)

Standard Element Names – Each Element Type controls this listing of names. For example a Text Element can be many levels of "Headings" or a standard "Paragraph", or even a "Table", while an Image Element only has one choice "Figure".

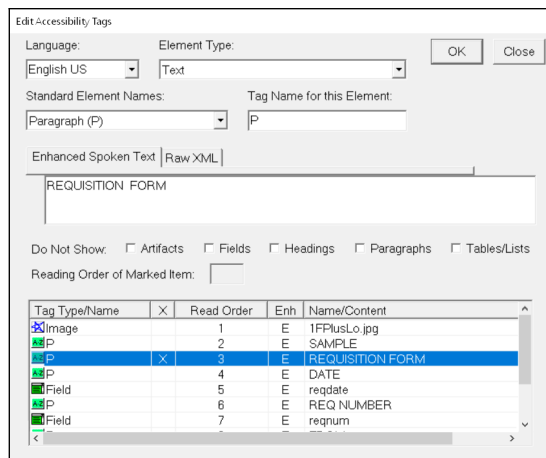


Figure 2-7: Edit Accessibility Tags Dialog

Tag Name for this Element – Each Element Name has a shortcut Tag Name (Tag) shown in parentheses below. The tag is what is seen in the list.

Text Element & (Tag):

- Paragraph (P)
- Article (Art)
- Heading Level 1 (H1)
- Annotation (Annot)
- Heading Level 2 (H2)
- Bibliography Entry (BibEntry)
- Heading Level 3 (H3)
- Block Quote (BlockQuote)
- Heading Level 4 (H4)
- Caption (Caption)
- Heading Level 5 (H5)
- (Code)
- Heading Level 6 (H6)
- (Custom)
- Heading(H)
- Division (Div)

Text Element & (Tag):	Image Element & (Tag):
Document (Document)	Figure (Figure)
Form (Form)	Fill Field Element & (Tag):
Formula (Formula)	Custom (Custom)
Index (Index)	Field (Field)
Label (Label)	List (List)
Link (Link)	Table (Table)
List (List)	Form (Form)
List Item (LI)	Graphic Object Element & (Tag):
List Item Body (LBody)	Figure (Figure)
Note (Note)	Path (Path)
Part (Part)	Barcode Element & (Tag):
Quote (Quote)	(Barcode)
Reference (Reference)	Artifact Element & (Tag):
Span (Span)	Artifact (Artifact)
Table (Table)	Section Element & (Tag):
Table Data Cell (TD)	Section (Section)
Table Header Cell (TH)	
Table Row (TR)	
Table of Contents (TOC)	
Table of Contents Item (TOCI)	

Enhanced Spoken Text Tab – This is where you will see what is going to be read by the screen reader. This is also where you can enhance what it is saying, for example if your form has two checkboxes following the question, you may want the question to end with, "Following are two checkboxes."

Raw XML Tab – Accessibility is placed into the PDF using XML. For support purposes, this shows the true data that is getting processed.

Do Not Show – This row of checkboxes allow you to toggle off certain tags elements to reduce the listing as you are working. If you know you are going to be editing all of the headers, toggle the other tags off to easily find the Headers. The checkboxes are toggles and turn off/on Artifacts, Fields, Headings, Paragraphs, and Table/Lists. When a file is opened all element tags are shown.

Reading Order of "Marked" Item – This is just a helper to acknowledge which component you have marked for the pop-up menu options "Move Item Before Mark" and "Move Item After Mark".

Listing of Elements – The listing of elements has five columns: Tag Type/Name, X (Identifies Current Tag Selected), Reading Order, Enh ("E" Represents Enhanced Spoken Text Turned On), Fill Field Name or Text Content Displayed.

Pop-Up Menu Options

While on a selected Tag in the listing you can right-mouse click to open a pop-up menu, following are the options:

Turn Off All Enhanced Spoken Text – This will turn Off All Spoken Text Enhancement for all items in the Edit Tag display list. It can be used to turn off Enhancement on Fields for fillable forms by toggling off Paragraphs and Headings first.

Mark This Item – Use this as the reference row you are trying to move the element to, either before it or after it.

Move Item Before Mark – Select the item that is to move before the mark.

Move Item After Mark – Select the item that is to move after the mark.

Send to End of Reading Order – Move the item selected to the end of the list.

Sent to Top of Reading Order – Move the item selected to the top of the list.

Turn into Artifact – Make the item selected an Artifact (Ignore by the Screen Reader). This is available for all tags but fields.

Toggle Enhanced Spoken Text On/Off – This will toggle the "E" Enhanced option for an individual tag.

Remove Tags

The Remove Tags tool option has several ways to remove tags from a file.



Figure 2-8: Remove Tags Dialog

Remove Tags – This allows you to remove tags that are selected by group or remove them all.

Remove Reading Order – If you are not happy with the current reading order and want to start over, this allows you to remove it.

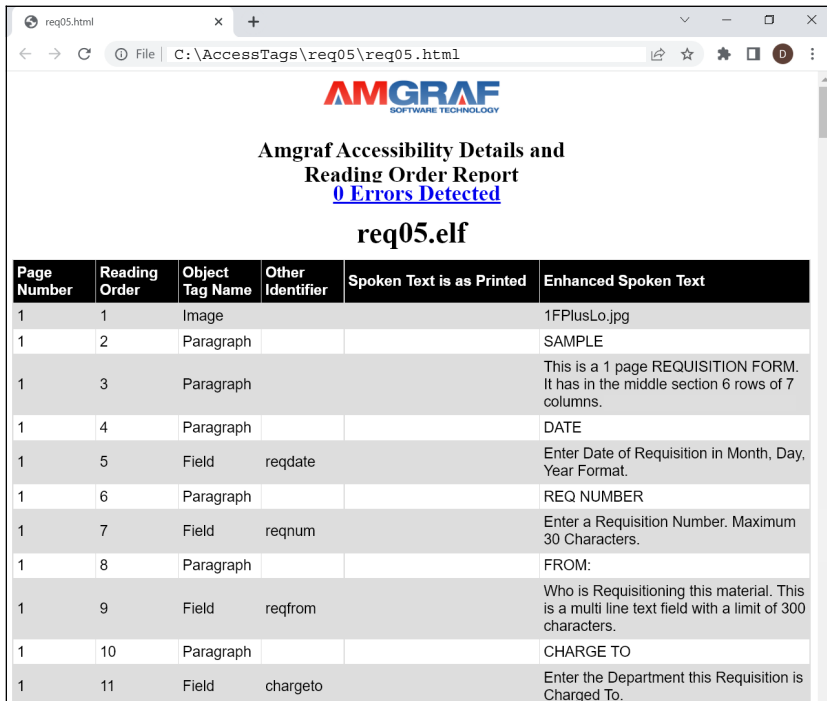
Remove Section – This removes the Section Focus fields.

Remove All – This very quickly removes all tags from a file so that you can start over.

Print Report

This option saves an HTML report file in your current folder that is a listing of all tags and the spoken text associated with the tag. It lets you read through what is going to be spoken and listed in the reading order.

It will also detect any text components that have not been tagged.



Page Number	Reading Order	Object Tag Name	Other Identifier	Spoken Text as Printed	Enhanced Spoken Text
1	1	Image			1FPlusLo.jpg
1	2	Paragraph			SAMPLE
1	3	Paragraph			This is a 1 page REQUISITION FORM. It has in the middle section 6 rows of 7 columns.
1	4	Paragraph			DATE
1	5	Field	reqdate		Enter Date of Requisition in Month, Day, Year Format.
1	6	Paragraph			REQ NUMBER
1	7	Field	reqnum		Enter a Requisition Number. Maximum 30 Characters.
1	8	Paragraph			FROM:
1	9	Field	reqfrom		Who is Requisitioning this material. This is a multi line text field with a limit of 300 characters.
1	10	Paragraph			CHARGE TO
1	11	Field	chargeto		Enter the Department this Requisition is Charged To.

Figure 2-9: HTML Report File

CHAPTER 3

Making a Form Accessible

In this chapter we will take a completed electronic form and make it accessible using the Accessibility Options.

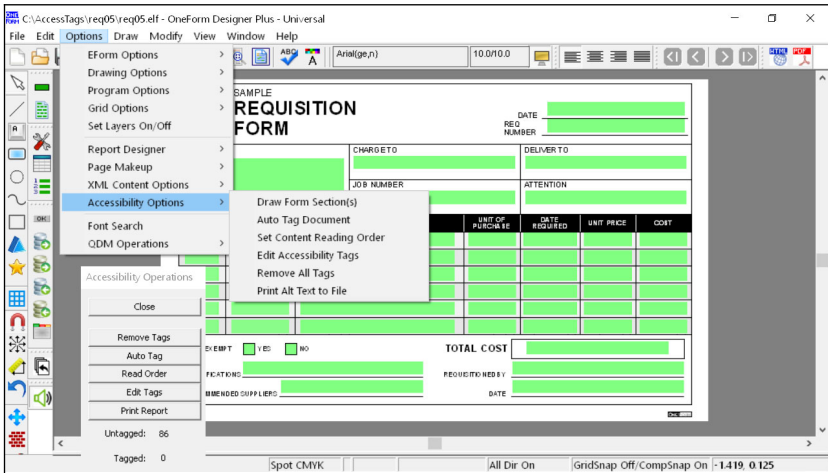


Figure 3-1: Accessibility Tool Panel and Menus

Creating an accessible form is easy, just follow these four main steps:

1. Add a Document Title
2. Auto Tag Document for Accessibility
3. Set Content Reading Order
4. Edit Accessibility Tag Content
 - Text
 - Images
 - Fields

Open a Fielded Electronic Form

Start OneForm Designer Plus and find the **req05.elf** file. It can be found at the following location:

**C:\Program Files\Amgraf\OneForm\Form_Lib_Wizard
\Wiz_requisition\req05**

As you can see, the sample is a Requisition Form that is already fielded through the standard procedures. Our library forms are normally read-only, so save this in a place where it can be used. This form is ready to be turned into an accessible PDF Form.

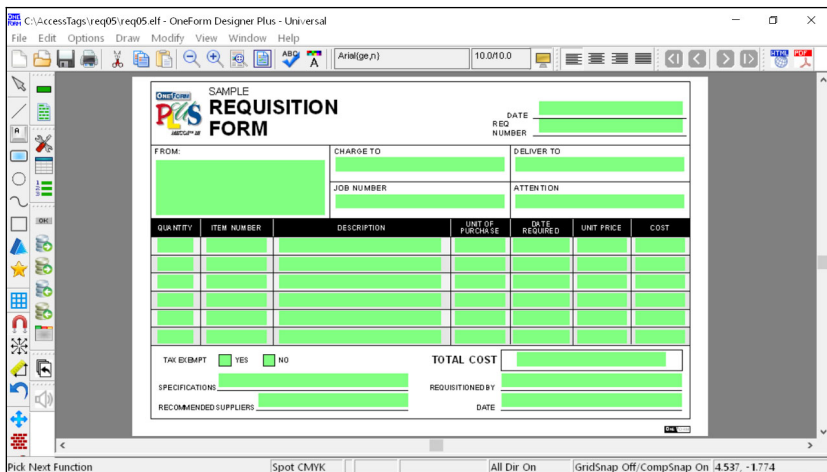
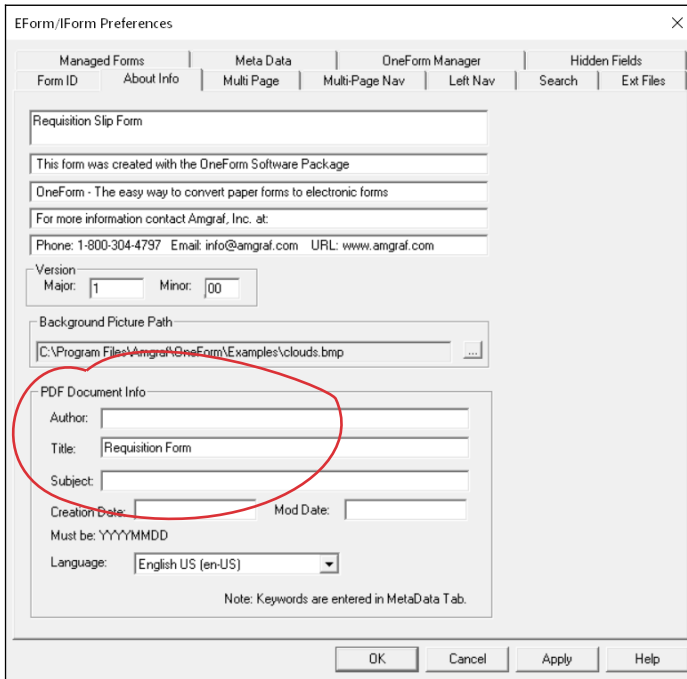


Figure 3-2: Our Sample Form

Step 1: Add a Document Title

It is required that all Accessible PDF documents have a title. Go to EForm Preferences, About Tab and add a PDF Document Title. The Author and Subject are not required but would enhance the document.



The screenshot shows the 'EForm/IForm Preferences' dialog box. The 'About Info' tab is selected. The 'PDF Document Info' section is circled in red. The fields in this section are: Author (empty), Title (Requisition Form), Subject (empty), Creation Date (empty), Mod Date (empty), Must be: YYYYMMDD, and Language (English US (en-US)). A note at the bottom of the section states: 'Note: Keywords are entered in MetaData Tab.' The dialog box also includes tabs for Managed Forms, Meta Data, OneForm Manager, and Hidden Fields, and buttons for OK, Cancel, Apply, and Help.

Figure 3-3: Add a PDF Document Title

Step 2: Auto Tag for Accessibility

Step 2: Auto Tag for Accessibility

Selecting **Auto Tag** from the Accessibility Tool analyzes the form and its components. It marks all text and image components and visible form fields with access element tags and reports how many elements it found.

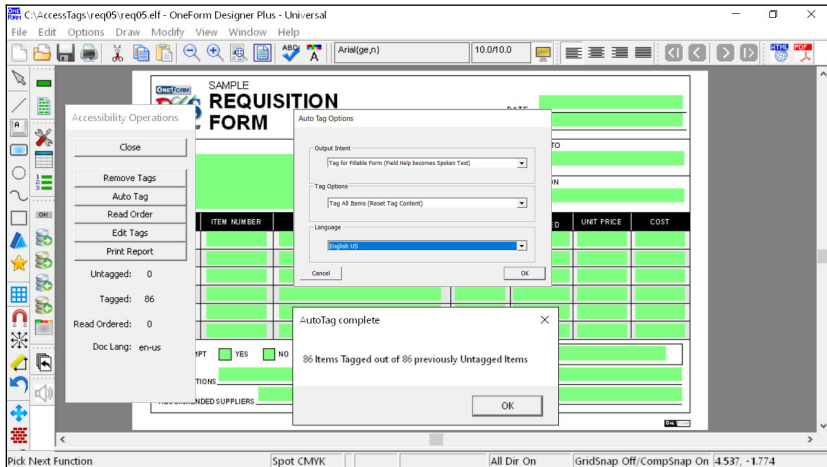


Figure 3-4: Auto Tag Document

Since this is a new accessible form, select the options **Tag for Fillable Form** and **Tag All Items**.

This will tag all items and use any tool tip help text in existing fields as enhanced text.

Step 3: Set Content Reading Order

The reading order is the route JAWS takes when reading tagged elements. Review the reading order by selecting **Reading Order**. They are sorted by reading order when selecting Reading Order for the first time. Look over the order of the numbers. Right-click to get the pop-up menu and **Save Reading Order**.

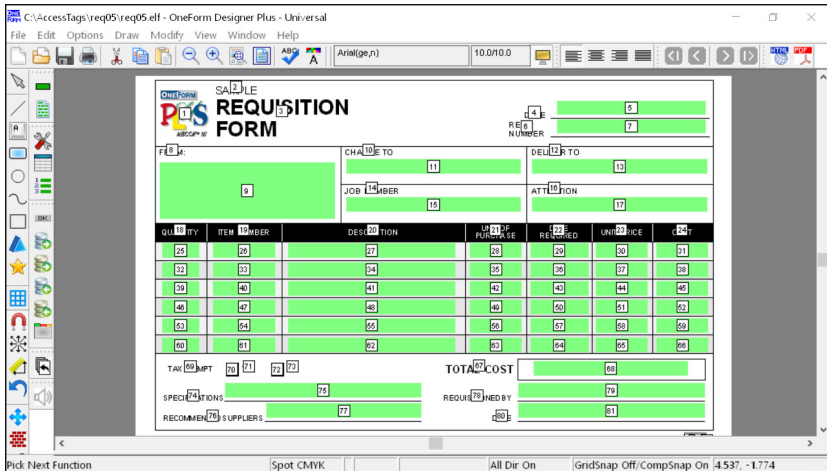


Figure 3-5: Sort Elements by Reading Order

Sort Elements by Reading Order does its best to sort the elements from Left to Right and Top to Bottom.

Now lets go back to the Reading Order option. You can correct the reading order by selecting the **Restart Reading Order** option in the pop-up menu, and picking on the preceding element number to the one you want to change. In other words, you want to pick the first good element number, then start picking the ones that are to follow.

At anytime you can right-mouse and pick the Restart option, again picking a good element number and continuing from there. Be sure to right-mouse and save reading order when you are done.

If you remove text from the reading order, it will be come an Artifact and ignored by the screen reader.

Step 4: Edit Accessibility Tag Content

You can apply spoken text to any of the elements. This is done through the Edit Accessibility Tag dialog.

Tag Type/Name	X	Read Order	Enh	Name/Content
Az P		3	E	REQUISITION FORM
Az P		4	E	DATE
Field	X	5	E	reqdate
Az P		6	E	REQ NUMBER
Field		7	E	reqnum
Az P		8	E	FROM:
Field		9	E	reqfrom

Figure 3-6: Edit the Form Access Elements for Spoken Text

The default text may not be enough information. To make a change to what it says, simply highlight the element in the list and type in the text to be read within the Enhanced Spoken Text area. You will also see the component outlined in red on the page.

Text Elements

Headers and Paragraphs will read their text automatically. You will only need to edit those which need additional embellishment. If you do add to the spoken text, make sure there is an "E" in the Enh (Enhanced) column.

If you want the text element to be skipped and not read at all, mark it as an "Artifact". This can be done here through the pop-up menu option "Turn into Artifact" or during reading order with the "Start Removing from Reading Order" option.

Assigning natural Header levels for a document makes it easier on the client. They can search for headings by level.

Making Images Accessible

Image elements will pull in the alternate text in the Raster Properties, (which is usually the image name) as the spoken text when they are Auto Tagged. This must be changed to a description of the image or a few word spaces if you want to leave it blank. The Acrobat accessibility checker will not allow image names to pass as spoken text. Make sure there is an "E" in the Enh (Enhanced) column.

Working with Fields

You have two types of PDF forms:

- those with fillable fields
- those with no fields (it is filled in by hand)

Making Fillable Fields Accessible

All Field elements will pull in its help message. You will see the field outlined in red on the page when selecting a field from the list. The Acrobat accessibility checker will not allow field names or nothing to pass as spoken text. Fillable Fields should always have their spoken text modified to describe the field, such as "Enter a Requisition Number".

Also, fillable Field elements should not be marked as "E" Enhanced since tool tips for fields in a PDF are not considered text. Use the pop-up menu in Edit Tags to "Toggle Enhanced Spoken Text Off" for the fillable fields if they have it marked.

The cursor will enter every visible field, so we cannot allow you to remove a field from the reading order. Since fields cannot be made into Artifacts, you can make them read-only or hidden.

If you need the field but want it to not have spoken text, use word spaces as spoken text. This would be a way to keep the field in the PDF and have it pass the checker.

Making Accessible Paper Forms for Hand Filled

When the accessible PDF is really instructions for hand filling out the paper form, the fields are handled differently. The fields are just graphical locations for field images on the page, but it would help if they are described. You must put the description in the field's label, since the field will not be in the PDF. You can describe the field as "Number Field Image" or "Write-in Area". It is best not to use descriptions like "Enter Your Name Here" because that makes the listener think it should be fillable. Leaving field descriptions blank will not be a problem for the Acrobat accessibility checker since all fields are removed when you make the PDF.

Save your ELF. It is ready to make the PDF file, which we will do in the next chapter.

Making a Hyperlink

The accessibility tag for hyperlinks is **Link** found under the Text Elements. But that does not make the link, it just lets JAWS know that it is a link. Also when tagging you must **turn off "E" Enhanced Spoken Text**.

Making the link is done with an Immediate Composition Command that is placed inside of the composed text component on the page.

The text markup commands HyperLink Start and End (\HLS^ and \HLE^) allows for a hyperlink to be embedded into the text while in the Notepad text editor. Following are two examples. You are surrounding the composed text (Click here for the Amgraf website.) with the commands.

Minimum syntax:

```
\hls href="www.amgraf.com"^  
Click here for the Amgraf website.  
\hle^
```

There are additional arguments for TARGET, NAME, and ID if needed:

```
\hls href="https://www.irs.gov/"  
target="_top" name="link1" id="link1"^  
Internal Revenue Service Website  
\hle^
```

CHAPTER 4

Creating and Testing the Accessible PDF Form

Now you are ready to make the Accessible PDF and run through the steps to insure it is ready to be read by a screen reader. We are going to create two PDFs during this exercise, with and without fields. You will choose one or the other according to the project at hand, but for this exercise we will create both.

1. Create a PDF File with Fillable Fields
2. Create a PDF File for Filling Out by Hand
3. Open and Save PDF in Adobe Acrobat Pro
4. Checking Accessibility of the PDF File
5. Test Screen Reading in JAWS for Windows

The image shows a screenshot of a PDF form titled "SAMPLE REQUISITION FORM" displayed in a PDF viewer. The form includes the following sections:

- Header:** "SAMPLE REQUISITION FORM" with a logo on the left. A "DATE" field is present, and a "REQ NUMBER" field is highlighted with an orange border.
- Form Fields:** "FROM:", "CHARGE TO", "DELIVER TO", "JOB NUMBER", and "ATTENTION".
- Table:** A table with 7 columns: "QUANTITY", "ITEM NUMBER", "DESCRIPTION", "UNIT OF PURCHASE", "DATE REQUIRED", "UNIT PRICE", and "COST". The table contains several empty rows.
- Footer:** "TAX EXEMPT" with "YES" and "NO" checkboxes, a "TOTAL COST" field, "SPECIFICATIONS", "REQUISITIONED BY", "RECOMMENDED SUPPLIERS", and "DATE".

Figure 4-1: Sample of PDF Form

Step 2: Create a PDF File with Fillable Fields

Step 1: Create a PDF File with Fillable Fields

The following steps will create a complete PDF Form with the form artwork components (lines, text, boxes, etc.) along with the fill-in fields and the accessibility embedded tags.

Click the **Save As PDF** tool and give your PDF file a name, such as "req05wfields". Check "Accessible Enhanced Descriptive Text" on the first tab named "Field Options". On the second tab, select **Embed Text Fonts** and **Embed Field Fonts**. Then turn off the Code Generation for Portal Forms by checking **No JavaScript Code** and **No Additional Fields** as shown below.

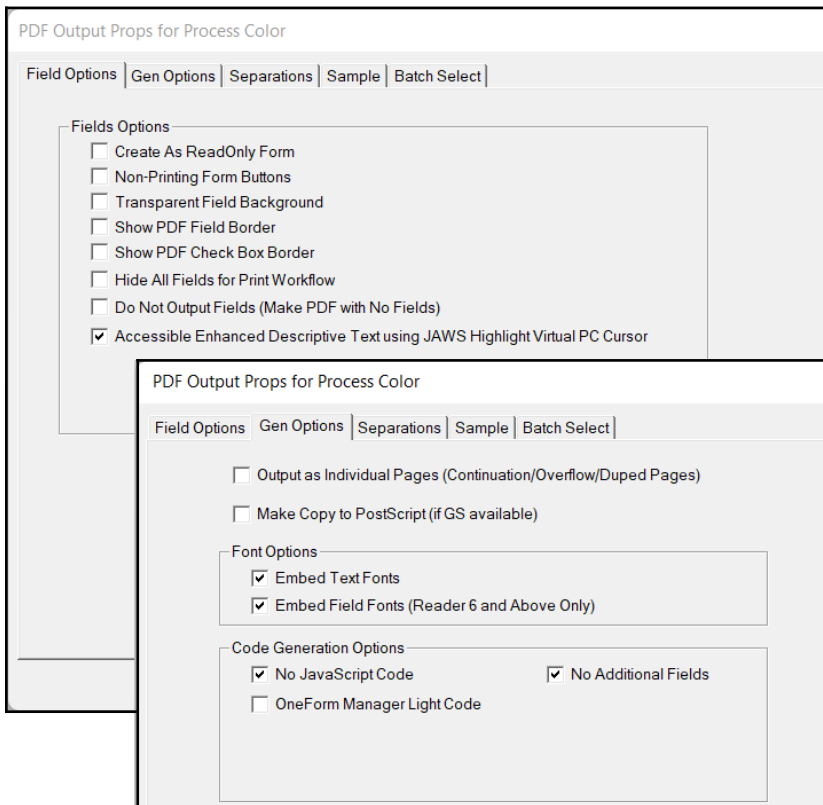


Figure 4-2: Saves an Accessible PDF Form with Fillable Fields

Okay the PDF Save Options. This will create your fillable PDF Form with accessibility.

Step 2: Create a PDF File for Filling Out by Hand

The following steps will create a complete PDF Form with the form artwork components (lines, text, boxes, etc.) and the accessibility embedded tags, but without any fields.

Click the **Save As PDF** tool and give your PDF file a name, such as "req05nofields". Check **Do Not Output Fields** and **Accessible Enhanced Descriptive Text** on the first tab named "Field Options". On the second tab, select **Embed Text Fonts**. Then turn off the Code Generation for Portal Forms by checking **No JavaScript Code** and **No Additional Fields** as shown below.

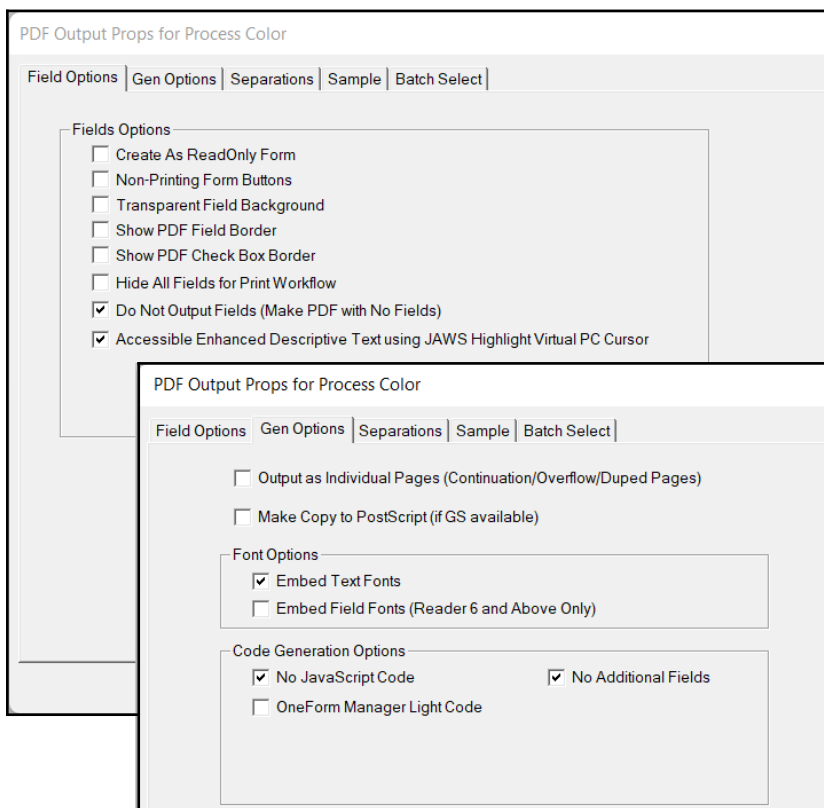


Figure 4-3: Saves an Accessible PDF Form Without Fields

Okay the PDF Save Options. This will create your hand filled PDF Form with accessibility.

Step 3: Verify Form by Opening and Saving PDF File

Step 3: Verify Form by Opening and Saving PDF File within Adobe Software

Amgraf recommends that the accessible PDF file be opened and resaved using the Adobe Acrobat Pro before testing. This will check for any basic issues, such as fonts, images, etc. If there are any PDF compatibility problems they will be detected by the standard Acrobat software.

The screenshot shows a PDF form titled 'SAMPLE REQUISITION FORM' with the 'OneForm' logo. The form includes a 'DATE' field, a 'REQ NUMBER' field, and sections for 'FROM:', 'CHARGE TO', 'DELIVER TO', 'JOB NUMBER', and 'ATTENTION'. A table with columns for 'QUANTITY', 'ITEM NUMBER', 'DESCRIPTION', 'UNIT OF PURCHASE', 'DATE REQUIRED', 'UNIT PRICE', and 'COST' is present. At the bottom, there are checkboxes for 'TAX EXEMPT' (YES/NO), a 'TOTAL COST' field, and lines for 'SPECIFICATIONS', 'RECOMMENDED SUPPLIERS', 'REQUISITIONED BY', and 'DATE'.

Figure 4-4: Open and Save in Acrobat Pro

Note: The PDF file created has the page size of the drawing properties within OFDP and is always considered "Portrait".

The file is now ready to bring into *Adobe* to "Check" the tags.

Step 4: Checking Accessibility of the PDF File

Adobe Acrobat has an Accessibility Checker that looks through the document for issues with Accessibility. Open the PDF and go to the **Accessibility** tool. Always run a **Full Check** to ensure that all components pass the checker.

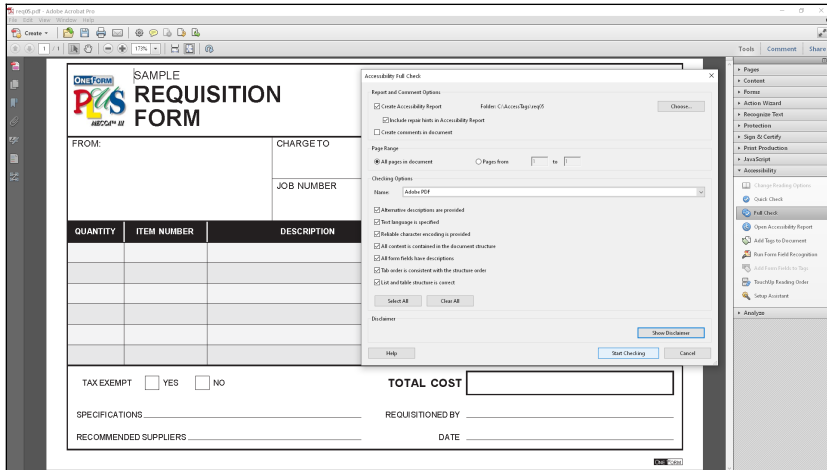


Figure 4-5: Run a Full Check on the Accessibility

If you get a message that it has found issues with the document, look at the details of the checker summary and go back and resolve any issues found. Make a new PDF and try again. These are usually items such as an image or field not having enhanced text.

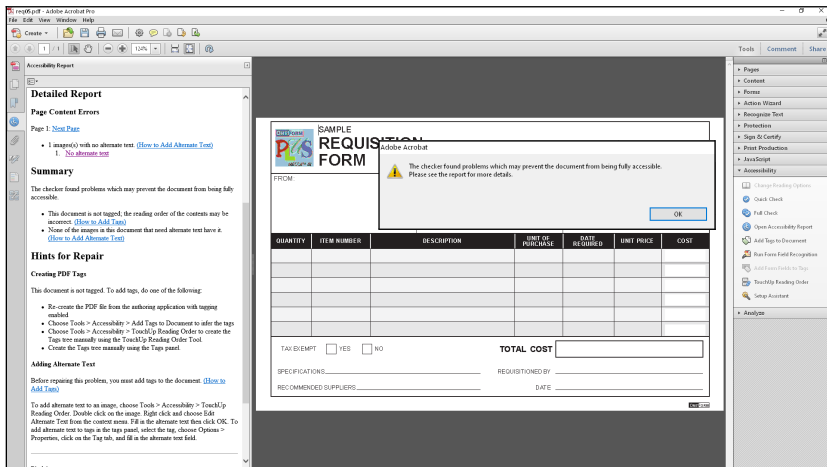


Figure 4-6: Problems Need Fixed

Step 4: Checking Accessibility of the PDF File

If it comes back with "No Problems Found" then you have a good accessible file. Be aware that reading order is not checked in this step, so when you are listening, be sure to pay attention to the flow of the page.

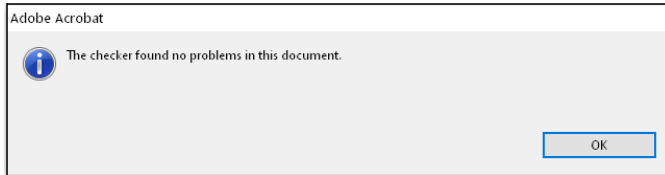


Figure 4-7: No Problems means the File's Accessibility is Good

The View, "Read Out Loud" feature within Acrobat can also be used to verify that the spoken descriptions are properly interpreted and reading order is honored.

The file is now ready to be tested with *JAWS Screen Reader*.

Step 5: Test Screen Reading in JAWS

The PDF can now be tested with *JAWS Screen Reader*. The follow steps will take you through listening to the entire form and its reading order and then filling out the form and listening to its instructions as you do. Lastly, after it is completely filled.

Basic Test

1. Open Page – Press [CTRL] if you need to stop the voice.
2. [CTRL]-[Home] to start at very first Item
3. [Insert]-[Down Arrow] to hear the entire page in virtual mode of text. Listen to entire page.
4. [CTRL]-[Home] to start at very first Item
5. When it gets to the first "Field Edit", press [ENTER] to start Forms Mode
6. Type and Tab through each field. Listen to the instructions for each field as you are typing.
7. NumLoc [+] – Exit Forms Mode
8. [CTRL]-[Home] to start at very first Item
9. [Insert]-[Down Arrow] to hear the entire page in virtual mode with data in fields.

Hints on Using JAWS Screen Reader for Windows

There are two reading modes: Virtual Reading and Forms Mode Field Input

Virtual Reading Mode Keys

[CTRL] – Stop Reading Immediately

[CTRL]-[Home] – Read First Item

[CTRL]-[End] – Read Last Item

[Insert]-[T] – Read Title Bar

[Arrow Up] – Read Next

[Arrow Down] – Read Next [Insert]-[Arrow Down] – Read All Following

[CTRL]- [Arrow Down] – Skip Through

Forms Mode Keys

[ENTER] while in Field means "Forms Mode On"

[Tab] – Next Field Right

[Tab Back] – Next Field Left

Mouse Click to Field works only during Forms Mode

[NumLock]-[+] while in Field is "Forms Mode Off", back to Virtual Mode

Voice Rate Controls

While JAWS is talking, Page Up and Page Down are the Voice Rate Controls. You can also go to JAWS, Voices, Global Voice Settings.

[Insert]-[V] will take you to voice controls. It reads as normal sentences if you change two settings:

Say All - As Sentences

Punctuation - None

CHAPTER 5

Working with Accessible Table Tags

Tables are considered boxed in column and row designs.

Equal Headers and Columns with Tags

HEADER 1 (TH)	HEADER 2 (TH)	HEADER 3 (TH)	HEADER 4 (TH)
COL1, ROW1 (TR)	COL2, ROW1 (TD)	COL3, ROW1 (TD)	COL4, ROW1 (TD)
COL1, ROW2 (TR)	COL2, ROW2 (TD)	COL3, ROW2 (TD)	COL4, ROW2 (TD)
COL1, ROW3 (TR)	COL2, ROW3 (TD)	COL3, ROW3 (TD)	COL4, ROW3 (TD)

Span Headers Over Columns with Fake Headers

SPAN HEADER 1 FAKE HEADER ~~~		SPAN HEADER 2 FAKE HEADER ~~~	
COL1, ROW1	COL2, ROW1	COL3, ROW1	COL4, ROW1
COL1, ROW2	COL2, ROW2	COL3, ROW2	COL4, ROW2
COL1, ROW3	COL2, ROW3	COL3, ROW3	COL4, ROW3

Figure 5-1: Table Examples

Tables cannot hold enhanced alternate text. They can only read the printed text. It is best to only use tables if absolutely necessary, otherwise use paragraph tags that can handle enhancement text for column and row assistance.

Please note that accessibility does not work well with span headings, this is headings that stretch across more that one column or row. The accessibility tags require that there are an equal number of column headings and data columns. One spanned heading across two columns will require you to make an additional fake heading using tildes (~~~). If you need to make a fake heading, have it follow the real one. When it comes time, these will be tagged as "TH".

Draw Table Section (Focus Field)

Section focus fields are necessary for the navigation of tables. Identify the table by drawing a transparent focus field over the area. The focus fields can be viewed and modified like normal fields, only they are not solid green in color, but represented by faint angled lines.

Go to the Options, Accessibility Options menu and select Draw Form Section(s). This will prompt you to pick the two corners of the section focus field location.

Decide what is considered your table and choose the upper-left corner, then the lower-right corner so your field will completely cover the entire table: headers, columns, and rows.

A dialog will appear for you to name the focus field and declare it a Form Access Section by selecting the checkbox. The tagname for the element item will always be "Table".

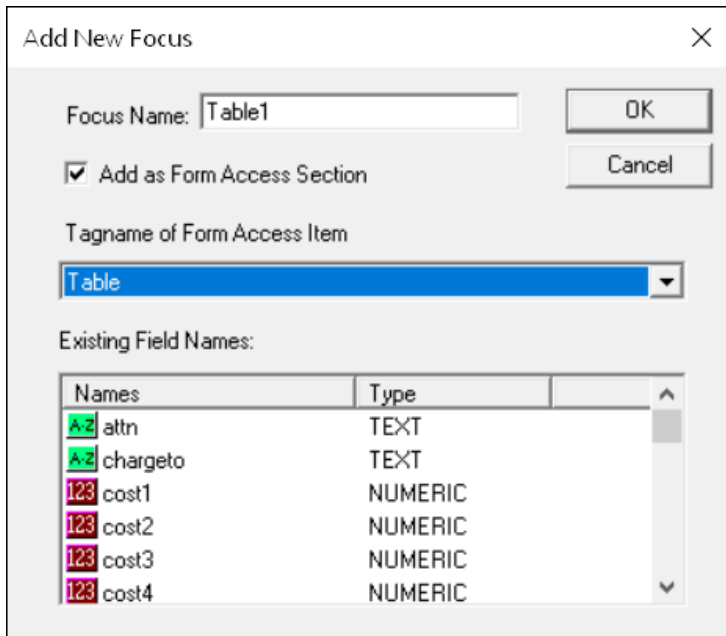


Figure 5-2: Give it a Name and Check "Add as Form Access "

The section field is represented by diagonal lines as shown below.

HEADER 1 (TH)	HEADER 2 (TH)	HEADER 3 (TH)	HEADER 4 (TH)
COL1, ROW1 (TR)	COL2, ROW1 (TD)	COL3, ROW1 (TD)	COL4, ROW1 (TD)
COL1, ROW2 (TR)	COL2, ROW2 (TD)	COL3, ROW2 (TD)	COL4, ROW2 (TD)
COL1, ROW3 (TR)	COL2, ROW3 (TD)	COL3, ROW3 (TD)	COL4, ROW3 (TD)

Figure 5-3: View, EForm Fields, Focus Fields Only

When your file is closed focus fields become invisible, to see them go to *View, EForm Fields, Focus Fields Only*.

Changing the Reading Order of a Section Focus Field

You will need to have the Table Section Focus field preceding the table components. Use the Move tag option in Edit Tags to accomplish this.

Open the Edit tags panel. The Focus Field will appear in the tags list. Use Mark and Move (right button clicks) to position the Focus Field where it needs to be. It must be the first item in a table, above the first Heading.

1. Go to the Table Header in column 1 and "Mark this Item".
2. Go to the Table1 Focus Field and "Move Item Before Mark".
3. Close Edit Tags and Save Your File

Steps for Tagging a Table

1. Decide what is to become a table.
2. Draw a Focus field around the entire table. Name the field "Table#" with the # being the incrementing number of this table in the document.
3. Save your file and re-open.
4. Make sure everything in the table is Auto Tagged and reading order is by Rows.
5. Save your file and re-open.
6. Open the Edit tags panel. The Focus Field will appear at the end of the tags list. Use Mark and Move (right button clicks) to position the Focus Field where it needs to be. It must be the first item in a table, above the first Heading.
 - a. Go to the Table Header in column 1 and "Mark this Item".
 - b. Go to the Table1 Focus Field and "Move Item Before Mark".
7. Save your file and re-open.
8. Open the Edit tags panel. Select the Focus Field. Change the Element Type to "Field" and the Tag Name to Table.
9. Save your file and re-open.
10. Open the Edit tags panel. Change all the table Headers from Paragraph (P) elements to Table Header Cell (TH).
11. Change the all Paragraph (P) elements in the first column to Table Row (TR). This starts each row.
12. Change the all remaining Paragraph (P) elements for the other columns to Table Data Cell (TD).
13. Make sure immediately following the last Table Data Cell (TD) that the next element is a Paragraph or Heading.
14. Check all tags from beginning to end of table. There should be no Paragraph (P) tags in the table.

CHAPTER 6

Miscellaneous Information

Accessibility will work with any of your ELF files, but you may need to make some minor changes to the files first.

Stepped Fields

The option for Stepping fields on the Dim/Steps Tab cannot be used with Accessibility. You will need to take the step out and use the Copy tool instead. All fields must be individual fields for the spoken text to be applied to each field.

Removing Fields

The cursor will enter every visible field, so we cannot allow you to remove a field from the reading order. Since fields cannot be made into Artifacts, you can make them read-only or hidden.

If you need the field but want it to not have spoken text, use word spaces as spoken text. This would be a way to keep the field in the PDF and have it pass the checker.

Multiple Page Forms

Create each page as an individual ELF as normal. You can apply the accessibility before or after you link them together as multi-page. If you do use Section fields for accessible tables created in a multi-page project, they will each need a unique name.

The Header tags in a multiple page document can cause a "Header Nesting" error in the checker when you check just an individual page. For example, Header 1 is on page 1, and Headers 2 and 3 are on page 4. If you just make a PDF using the page 4 ELF and check it, you will get a Header nesting error since it can't find Header 1 and it sees the count started with Header 2. But if you make a PDF with all 4 pages, since it sees Headers 1, 2, and 3, the error will go away.