

Technical Note

Use of **ActualText** on **Figure** structure elements

TN-PDFUA1-001 v1.4.1

Document
H1
Figure/Placement/Inline/ActualText
...

PDF/UA-1

PDF/UA TWG

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Preface

This PDF/UA-1 Technical Note provides clarification on non-text graphics objects representing text. Information about this Technical Note can also be found at <https://pdfa.org/resource/tn-pdfua1-001>.

This document is non-normative and does not alter any existing requirements in [ISO 32000-1:2008] (PDF 1.7) or [ISO 14289-1:2014] (PDF/UA-1).

Notation

This document follows existing conventions for PDF specifications, as specified in [ISO 32000-1:2008], Clauses 5 to 6.

This document also uses tree-based diagrams to illustrate the hierarchical arrangement of structure elements. These diagrams have two columns:

- The left column illustrates the hierarchical arrangement of structure elements and related attributes that form part of a document's logical structure.
- The right column provides document content as “double quoted text” in a serif typeface, or descriptive comments.

The PDF Association provides [sponsored editions of many ISO standards](#) for no-cost.

1 Non-text graphics objects representing text

PDF/UA-1 [ISO 14289-1:2014] states:

*Graphics objects, other than text objects, shall be tagged with a **Figure** tag as described in ISO 32000-1:2008, 14.8.4.5, Table 340.*

— ISO, [ISO 14289-1:2014], Clause 7.3 Graphics first paragraph

However, not every non-text graphics object is content that has the semantics of a **Figure** as defined in PDF 1.7.

If the purpose of such a graphics object is to convey textual meaning, the most semantically-appropriate method of conveying this meaning, that complies with PDF/UA-1, is to ensure that:

1. the graphics object is tagged with a **Figure** structure element (for compliance with the standard), and
2. the **Figure** structure element is a child or descendant of a semantically appropriate block-level structure element (BLSE)¹, and
3. an **ActualText** property is present that reflects the textual content of the graphics object(s) within the **Figure** structure element, and
4. a **Placement** attribute with a value of *Inline* is present on the **Figure** structure element.

Point 3 ensures that the **Figure** structure element possesses the property (an **ActualText** entry) necessary to convey the textual content represented by the graphics object(s).

Point 4 highlights that despite the implied **Placement** attribute (by virtue of being a child of a BLSE) some PDF software may only respond to an explicit **Placement** attribute with a value of *Inline*.

The above approach results in a good assistive technology (AT) user experience when text is represented by non-text graphics objects.

¹A **Figure** structure element can also be a child of an inline-level structure element (ILSE)

1.1 Examples

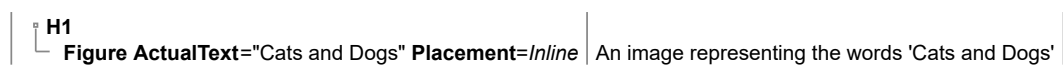
1.1.1 A **Figure** structure element containing an image used as a heading

EXAMPLE

FIGURE 1: Page appearance for example 1



FIGURE 2: Diagram of the PDF logical structure tree representing an H1 heading followed by the Cats and Dogs image.



A functional PDF/UA-1 file containing this example is attached [📎](#).

1.1.2 A **Figure** structure element containing an image used to convey a single character in a word

EXAMPLE

FIGURE 3: Page appearance for example 2

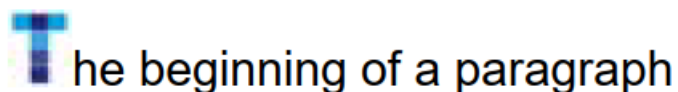
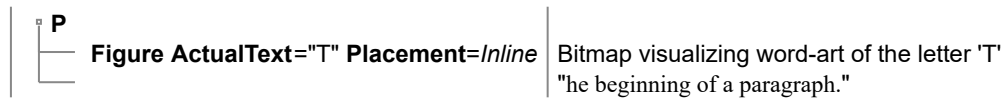


FIGURE 4: Diagram of a local segment of the PDF structure tree representing a Paragraph with both a Figure tag and text as its substructure.



A functional PDF/UA-1 file containing this example is attached [📎](#).

1.2 Consumption

If a **Figure** structure element is contained within a BLSE and includes semantically correct **ActualText** as discussed above, a correct interpretation by viewer software supporting accessibility APIs is to pass the value of the **ActualText** entry as plain text to that API.

If software announces a figure or image in this context, such behavior should be reported as a defect to the publisher of the PDF viewer software, as this problem is generally not the responsibility of AT software.

Bibliography

- [ISO 14289-1:2014] ISO 14289-1:2014, International Organization for Standardization (committee). *Document management applications—Electronic document file format enhancement for accessibility—Part 1: Use of ISO 32000-1 (PDF/UA-1)*. Second edition. 2014. Geneva: International Organization for Standardization. <https://www.iso.org/standard/64599.html>.
- [ISO 14289-2] ISO 14289-2, International Organization for Standardization (committee). *Document management applications—Electronic document file format enhancement for accessibility—Part 2: Use of ISO 32000-2 (PDF/UA-2)*. First edition. Geneva: International Organization for Standardization. <https://www.iso.org/standard/82278.html>.
- [ISO 32000-1:2008] ISO 32000-1:2008, International Organization for Standardization (committee). *Document management—Portable document format—Part 1: PDF 1.7*. First edition. 2008. Geneva: International Organization for Standardization. <https://www.iso.org/standard/51502.html>.