
**Document management — XML Forms
Data Format —**

**Part 1:
Use of ISO 32000-2 (XFDF 3.0)**

Gestion de documents — Format de Données des Formulaires XML —

Partie 1: Utilisation de l'ISO 32000-2 (XFDF 3.0)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 171, *Document management applications*, Subcommittee SC 2, *Document file formats, EDMS systems and authenticity of information*.

A list of all parts in the ISO 19444 series can be found on the ISO website.
<http://www.iso.org/obp/ui/#iso:code:3d:17:43b5-8ebb-4ef2cba50882/iso-19444-1-2016>

Introduction

This document describes the XML Forms Data Format, which is used to represent form data from PDF (ISO 32000-2) in an XML tagset.

This format is derived from the Forms Data Format in PDF and is intended to be a more interchangeable format for forms data.

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Document management — XML Forms Data Format —

Part 1: Use of ISO 32000-2 (XFDF 3.0)

1 Scope

This document specifies an XML format for representing forms data and annotations in the Portable Document Format, ISO 32000-2 (PDF 2.0).

This document does not change or add any definitions for any components of ISO 32000-2.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 32000-2 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

4 Notation

All XFDF element names, XFDF attributes names and examples (XFDF and PDF) are written in fixed width font. All inline PDF and FDF operators, keywords and the names of keys in PDF dictionaries are written in bold font. All inline words that denote operands of PDF and FDF operators or values of PDF dictionary keys are written in italic sans serif font.

Ellipses (...) are used within XFDF examples to indicate omitted detail.

5 Introduction to XFDF

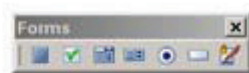
5.1 General

XML Forms Data Format (XFDF) is a format for representing forms data and annotations in a PDF document. This specification describes XFDF compatible with ISO 32000-2. XFDF is the XML version of Forms Data Format (FDF), a simplified version of PDF for representing forms data and annotations.

5.2 Forms data and annotations

Form fields in a PDF document may include many interactive elements (see ISO 32000-2:—, 12.7). [Figure 1](#) shows a sample PDF which utilizes edit boxes, buttons, and radio buttons:

Review Checklist



Document:

Status: ☒ First Draft
☐ Second Draft
☐ Final

Figure 1 — Sample PDF utilizing edit boxes, buttons and radio buttons

The XFDF exported from this PDF document might look like the following example:

```
<?xml version="1.0" encoding="UTF-8"?>
<xfdf xmlns="http://ns.adobe.com/xfdf/" xml:space="preserve">
  <f href="Checklist.pdf"/>
  <ids original="7A0631678ED475F0898815F0A818CFA1"
    modified="BEF7724317B311718E8675B677EF9B4E"/>
  <fields>
    ...
  </fields>
</xfdf>
```

XFDF is often used as the format to send and receive PDF form data from a server. Form data are submitted to a server, modifications are made and sent back; the new form data are imported into the interactive PDF form. XFDF is also often used as a format to export form data to stand-alone files that can be stored, transmitted electronically, and imported back into the corresponding PDF interactive form.

Annotations (see ISO 32000-2:—, 12.5) are attached to a PDF document. [Figure 2](#) shows an example PDF which includes text notes, highlights, stamps, and file attachments:

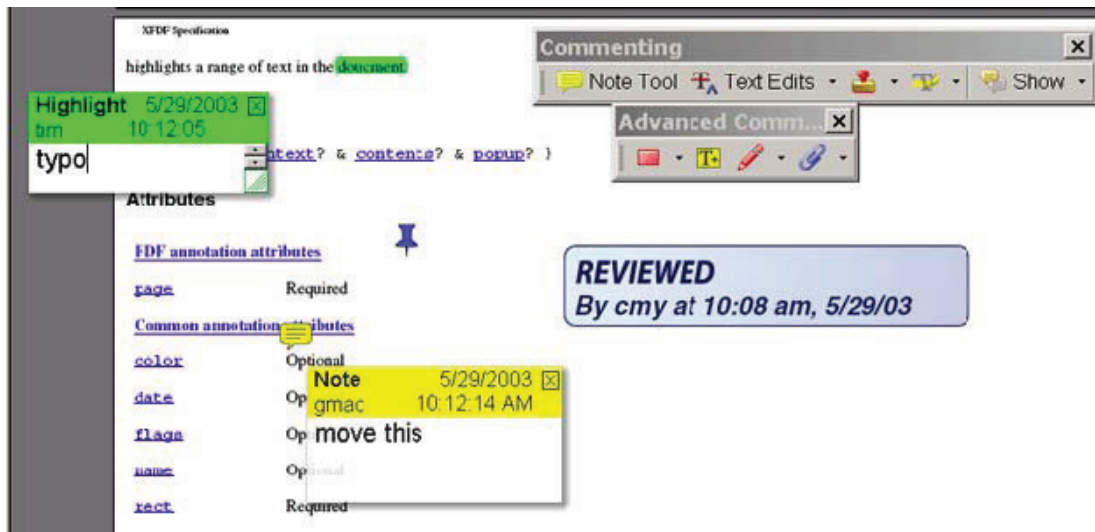


Figure 2 — Example PDF shown with text notes, highlights, stamps and file attachments

5.3 How to use this specification

This specification documents the correspondence between an XFDF element or attribute and its equivalent PDF dictionary and key. A short description is provided for each element and attribute; for complete information, see the description of the corresponding dictionary and key in ISO 32000-2. There are also a few attributes that do not correspond to a specific PDF dictionary and key.

5.4 PDF, FDF and XFDF

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5.4.1 General

PDF, FDF, and XFDF are related specifications with PDF as the parent format for representing documents, including interactive forms and annotations. FDF and XFDF contain the subset of a PDF document that describes interactive forms and annotations. Complete information on PDF and FDF may be found in ISO 32000-2.

FDF is a simplified version of PDF. PDF and FDF represent information with a key/value pair, also referred to as an entry. This example shows the **T** and **V** keys with values enclosed in parentheses:

```
/T (Street) /V (345 Park Ave.)
```

XFDF, on the other hand, represents an entry with an XML element/content or attribute/value pair, as shown in the corresponding XFDF:

```
<field name="Street">
  <value>345 Park Ave.</value>
</field>
```

XFDF implements a subset of FDF containing forms and annotations. There are XFDF equivalents for the **Annots**, **Fields**, **F**, and **ID** keys of the FDF dictionary. There are no XFDF equivalents for the other entries in the FDF dictionary such as the **Status**, **Encoding**, **JavaScript**, **EmbeddedFDFs**, **Differences**, **Target**, and **Pages** keys.

XFDF conforms to the XML standard (see W3C, Extensible Markup Language 1.0).

In the simplest case, an XFDF element or attribute maps directly to a key in a particular dictionary of PDF. For example, the `creationdate` attribute is documented as corresponding to the **CreationDate** key

in the markup annotation dictionary. This specification provides a description of the `creationdate` attribute, but more detailed information can be found in ISO 32000-2.

An example `creationdate` attribute in XFDF:

```
creationdate="D:20030425095243-07'00"
```

An equivalent entry in PDF or FDF would look like:

```
/CreationDate (D:20030425095243-07'00)
```

In the example above, the underlying data stored within XFDF or PDF is identical. However, in other cases, the name and value differ. For example, the `flags` attribute corresponds to the **F** key in the annotation dictionary. The value of the `flags` attribute is a comma separated list of the descriptive names of the flags, while the value of the **F** key is an integer with each bit representing a flag.

This is the XFDF `flags` attribute:

```
flags="print,nozoom,norotate"
```

This is the equivalent **F** entry in PDF or FDF:

```
/F 28
```

Finally, an element with multiple attributes can map to a single key with multiple values. The `ids` element in XFDF has attributes `original` and `modified` that map to the **ID** key in the FDF dictionary.

Below is an example `ids` element in XFDF:

```
<ids original="7A0631678ED475F0898815F0A818CFA1"  
modified="BEE7724317B311718E8675B677EF9B4E" />
```

This is the corresponding **ID** entry in FDF:

```
/ID [<7a0631678ed475f0898815f0a818cfa1><bef7724317b311718e8675b677ef9b4e>]
```

5.4.2 Sample form in FDF and XFDF

Both FDF and XFDF for forms contain the same information: field name and value. In this FDF example, with line returns added for readability, the **Fields** key contains two fields named Street and City:

```
%FDF-1.2
%aãĭÓ
1 0 obj
<< /FDF
    << /F (Document.pdf)
        /ID [ <7a0631678ed475f0898815f0a818cfa1>
            <bef7724317b311718e8675b677ef9b4e> ]
        /Fields [
            << /T (Street)
                /V (345 Park Ave.) >>
            << /T (City) /V (San Jose)>>
        ] >>
    >>
endobj
trailer
<< /Root 1 0 R >>
%%EOF
```

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This is the XFDF version of the same form fields. The `fields` element contains two field elements with attribute name set to Street and City.

```
<?xml version="1.0" encoding="UTF-8"?>
<xfdf xmlns="http://ns.adobe.com/xfdf/" xml:space="preserve">
  <f href="Document.pdf"/>
  <ids original="7A0631678ED475F0898815F0A818CFA1"
    modified="BEF7724317B311718E8675B677EF9B4E"/>
  <fields>
    <field name="Street">
      <value>345 Park Ave.</value>
    </field>
    <field name="City">
      <value>San Jose</value>
    </field>
  </fields>
</xfdf>
```

5.4.3 Sample annotation in FDF and XFDF

XFDF and FDF contain similar information but XFDF is represented in the XML format. This is a snippet of an FDF file containing a note annotation (line breaks added for readability):

```
%FDF-1.2
%aãřó
1 0 obj
<< /FDF
  << /F (/C/Samples/Document.pdf)
    /ID [ <7a0631678ed475f0898815f0a818cfa1>
      <bef7724317b311718e8675b677ef9b4e> ]
    /Annots [4 0 R 3 0 R] >>
  >>
endobj

3 0 obj
<< ... >>
endobj

4 0 obj
<< /F 28
  /Page 0
  ...
  /Type /Annot
  /Subj (Note)
  /Rect [271.850464 690.255371 291.850464 708.255371]
  /CreationDate (D:20030425095243-07'00')
  /NM (apYVRecPEj75sYIwSxME7C)
  ...
  /Subtype /Text
  ... >>
endobj

trailer
<< /Root 1 0 R >>
%%EOF
```

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This is the same data in XFDF format:

```
<?xml version="1.0" encoding="UTF-8"?>
<xfdf xmlns="http://ns.adobe.com/xfdf/" xml:space="preserve">
  <f href="Document.pdf"/>
  <ids original="7A0631678ED475F0898815F0A818CFA1" modified="BEF-
7724317B311718E8675B677EF9B4E"
/>
<annots>
  <text flags="print,nozoom,norotate" page="0" subject="Note" rect="271.85046
4,690.255371,291.850464,708.255371"
```

```

creationdate="D:20030425095243-07'00'" name="apYVRecPEj75sYIwSxME7C" ...
>
...
<popup .../>
</text>
</annots>
</xfdf>

```

5.5 Writing XFDF

5.5.1 General

This clause describes XML implementation details specific to XFDF.

5.5.2 Encoding and Namespace

The encoding in the XFDF file shall be UTF-8. Each XFDF file shall begin with the line:

```
<?xml version="1.0" encoding="UTF-8"?>
```

The namespace for XFDF shall be:

<http://ns.adobe.com/xfdf/>

The XML shall always specify that space is preserved in the XFDF files as follows:

```
xml:space="preserve"
```

Therefore, an XFDF document shall always begin with the following two lines:

```

<?xml version="1.0" encoding="UTF-8"?>
<xfdf xmlns="http://ns.adobe.com/xfdf/" xml:space="preserve">

```

5.6 Understanding forms

5.6.1 General

An XFDF file with form data contains form field names and values. When importing XFDF into a PDF processor, the target PDF file must already contain the form fields. Importing XFDF updates the form field values in the PDF file. Exporting to XFDF puts the current value of the field in the `value` element.

Using XFDF, it is not possible to create a new form field in a PDF document, or change anything other than the value of an existing form field.

5.6.2 Simple XFDF form

[Figure 3](#) depicts a simple PDF document representing an address label containing text box form fields named *Name*, *Street* and *CityState*.