Minutes of the IPP Document Object telecon, April 3, 2003

Attendees: 17 people before I joined 1 hour and 15 minutes into the call.

The revision marks show the agreements reached on the mail note sent out Wednesday and Tuesday.

Tom

From: Hastings, Tom N [hastings@cp10.es.xerox.com]
Sent: Wednesday, April 02, 2003 18:24
To: sm@pwg.org
Cc: ps@pwg.org
Subject: RE: SM> Summary of 9 recent ISSUES/fixes for the IPP Document obj ect tele con, Thur, 4/3/03, 12-3 EST (9-12 PST)

And a 10th issue for the Document Object spec:

10. At today's IPPFAX telecon, we discussed the following IPPFAX Printer Description attribute:

digital-signatures-supported (1setOf type2 keyword)
This attribute identifies which digital signatures technologies are supported by the Receiver. A Receiver ~~MUST~~ MAY support this Printer Description attribute.
TODO: Get list of keywords; can be found in "IPP driver install" spec

~~We~~ The IPPFAX WG agreed:
that it should go in the IPP Document object spec, and that it should have a "digital-signature" (type2 keyword) operation/Document Description attribute that the client submits in a Document Creation operation as well. And therefore, the spelling of the corresponding "digital-signature-supported" (1setOf type2 keyword) Printer Description attribute should be without the "s".

The description from the "IPP Driver Install" (IPP Printer Installation Extension) spec is:

"digital-signature"
For IPP:
One ~~REQUIRED~~ OPTIONAL LOWER-CASE 'keyword' string identifying the mechanism used to ensure the integrity and authenticity of this set of Client Print Support Files. Standard values are: 'smime', 'pgp', 'dss', and 'xmldsig' which are defined in [RFC2634], [RFC1991], [dss], and [xmldsig], respectively. In addition, the special keyword value: 'none' is valid.

If the Printer supports this attribute:
The Printer MUST verify the signature according to the rule for that signature format.

Different PDLs have different ways of embedding the signature. If the Printer supports the "document-signature" attribute, the Printer MUST accept the document and MAY either (1) ignore the signature or (2) put the job on hold. So if the "document-format" is supported, the Printer MAY accept the Job even if is doesn't understand the signature, and the Printer MUST return the attribute as unsupported in the Unsupported attributes group as in [RFC2911].

This Printer behavior is backwards compatible with a Printer that doesn't support the "digital-signature" attribute.

However, if the Printer supports the "job-mandatory-attributes" attribute and the client supplies the "job-mandatory-attribute" operation attribute with the 'digital-signature' keyword value, then the Printer MUST reject the job if the "digital-signature" attribute is supplied with a value that isn't supported by the Printer (or the Printer doesn't support the "digital-signature" attribute at all).

The "digital-signature-default" Printer Description attribute MUST be supported if any are.

For the IPP Document object spec, the "digital-signature" operation/Document Description attributes and the corresponding "digital-signature-default" and "digital-signature-supported" Printer Description attributes will be OPTIONAL for a Printer to support.

If the Printer supports the "digital-signature" operation attribute, it MUST support the "document-format-default" and "document-format-supported" Printer Description attributes as well (and vice versa).

For IPPFAX, the Receiver MUST support these attributes.

If the Printer supports the "digital-signature" operation attribute and also supports the Document object (not IPPFAX), the Printer MUST support the "digital-signature" Document Description attribute.

The implementation MUST support 'none' value ~~MUST be supported~~ if this attribute is supported.

Editor's ISSUE: OK to prefix this attribute with "document-" to make it "document-digital-signature"?

Tom

-----Original Message-----
From: Hastings, Tom N [mailto:hastings@cp10.es.xerox.com]
Sent: Tuesday, April 01, 2003 18:46
To: sm@pwg.org
Cc: ps@pwg.org
Subject: SM> Summary of 9 recent ISSUES/fixes for the IPP Document object tele con, Thur, 4/3/03, 12-3 EST (9-12 PST)

The 2nd and 3rd hours will be reviewing the IPP Document Object spec (sent out March 25:
ftp://ftp.pwg.org/pub/pwg/ipp/new_DOC/wd-ippdoc10-20030324.pdf.zip
(1,225 KB)
ftp://ftp.pwg.org/pub/pwg/ipp/new_DOC/wd-ippdoc10-20030324.doc.zip
(294 KB)
ftp://ftp.pwg.org/pub/pwg/ipp/new_DOC/wd-ippdoc10-20030324-rev.pdf.zip

(649 KB)
ftp://ftp.pwg.org/pub/pwg/ipp/new_DOC/wd-ippdoc10-20030324-rev.doc.zip
(309 KB)

This note summarizes the suggestions that have been and issues raised since the document was sent out, including discussions in CIP4 about the JDF/FileSpec resource and the SM telecon March 27.

The first part of this mail note is a summary of the issues and point to earlier mail messages that are appended for more detail and rationale.

1. Close-Job operation needs the same timeout Printer requirements as RFC 2911 has for Send-Document.
Agreed.

2. Remove "document-id-uri" Document Description attribute. PSI agreed last week that they can use the IPP "document-number" (integer(1:MAX)) Document Description attribute to identify documents within a job.
Agreed.

3. Add a "document-format-version" (text(127)) operation/Document Description attribute with self-identifing values, such as 'PS/3~~.0~~', 'PCL/5e', 'PDF/1.4', 'PDF/X-1a:2001' (See ISSUES 01 and 02 below for more details). The prefix is from the Printer MIB langTC values used in the prtInterpretedLangFamily object and the version after the "/" can be used in the Printer MIB prtInterpreterLangLevel object.
Need an auto-sense value. The langAutomatic is in the Printer MIB, so we'll used 'Automatic' as the value for the "document-format-version" to mean auto-sense the version.

If the client supplies "document-format-version", the client MUST also supply the "document-format" operation attribute. So the Printer isn't forced to parse the version.

A client MAY supply "document-format-version" values from the Printer MIB that don't have their own MIME type, such as NPDL. In this case, the client MUST supply:
"document-format" = 'application/octet-stream' and
and the client MAY supply:
"document-format-version" = 'NPDL'.

If the format doesn't have a MIME type, but does have a version, then the "document-format-version" = "Xxxx/yyy', where Xxxx is from the langXxxx Printer MIB Textual convention with the 'lang' removed and yyy is the version.

If the version is from a standard, then the standards body's designation for the standard is used, including part numbers, if applicable, and year. For example, for SPDL:
the "document-format" = 'application/octet-stream' and
the "document-format-version" = 'SPCL/ISO/IEC 10180:1995'.

4. Add a "document-format-version-default" (text(127)) and "document-format-version-supported" (1setOf text(127)) Printer Description

attributes to describe the default and supported values. (See ISSUES 03 below for more details).
So "document-format-version" and "document-format" would have parallel semantics, including also being member attributes of "document-format-details" (1setOf collection).
Agreed.

5. ISSUE 04 (repeat of below): Is "document-format-version" a Best Effort (hint) ~~unless "ipp-attribute-fidelity" = 'true" or~~ "job-mandatory-attributes" = 'document-format-version' or do we make "document-format-version" be like "document-format" in that the Printer MUST reject the job if the Printer doesn't support the version?

Agreed: We won't generalize "ipp-attribute-fidelity' to apply to operation attributes.

Agreed: "document-format-version" will remain a hint. Same as for "digital-signature".

However, if the Printer supports the "job-mandatory-attributes" attribute and the client supplies the "job-mandatory-attribute" operation attribute with the 'document-format-version' keyword value, then the Printer MUST reject the job if the "document-format-version" attribute is supplied with a value that isn't supported by the Printer (or the Printer doesn't support the "document-format-version" attribute at all).

6. Put the version strings into a flat text file that implementers and implementations (at CD writing time, install time, vendor update time, at power-up time, etc.) can access on the PWG FTP site. Adding new values is simply done whenever they are registered or standardized with some recognized body, such as IANA, CIP4, ISO, etc.
Also part of the Schema.
Maintainer sends new proposed values to the PWG list for review.

ISSUE 05: We need to convince CIP4 to use the same flat file for their FileSpec/@MimeOrFileTypeVersion attribute and/or have each of them shadow the other.

ACTION ITEM (Tom): Try to convince CIP4 to let PWG host the flat file, but that it contains values needed by CIP4 and PWG.

The format of the file needs work so that it can be easily parsed. It won't be in XML. Something along the lines of a four column file, where each column is separated by something easy to parse. (Note: CIP4 FileType attribute can include white space

"document-format", CIP4 FileType, "document-format-version", Reference

ACTION ITEM (Tom and Ira): Propose a format.

7. Add a "document-natural-language" (naturalLanguage) operation/Document Description attribute and a "document-natural-language-supported" (1setOf naturalLanguage) Printer Description attribute. The

"document-natural-language" operation attribute is already defined in RFC 2911 for use with Print-Job, Send-Document, and Send-URI, so we are just continuing this RFC 2911 attribute for the Create-Document operation and making it a Document Description attribute as well, so that it can be queried. Also keep "document-natural-language" (naturalLanguage) as a member attribute of "document-format-details" for describing packages.

The "document-natural-language" is needed in order to know how to display characters that depend on language.
Another hint at the top level, same a "digital-signature" and "document-format-version". But the client MAY supply "job-mandatory-attributes" with a 'document-natural-language' keyword value.

ISSUE 06: What about multiple languages in a single document for the top level attribute?
Agreed: Keep single-valued at the top level.

The "document-format-supported" Printer Description attribute indicates the values that are supported in the union of the document format supported.

Note: Printer MAY include the region, e.g., en-US, en-GB, or may just have en.

ISSUE 06a: What about for the member attribute of "document-format-details"?

AGREED (again): Make 1setOf for the member attribute.

8. Add a "document-charset" (charset) operation/Document Description attribute and a "docuemnt-charset-supported" (1setOf charset) Printer Descrition attribute. This attribute is needed for the many plain text and markup languages in which the charset is not embedded in the data. For example, PCL often doesn't have the charset escape sequence in the data. Also many files use the various 8-bit ISO 8859 charsets in which the lower half is US-ASCII and the upper half is various Latin sets (about 8 or 9), Greek, Cyrllic, Hebrew, and Arabic. Shift JIS is another example where the left half is US-ASCII, but the right half can be one of a number of things. But if the data doesn't contain the charset escape sequences, this attribute can help the Printer know what the charset is in the Document.

AGREED: Keep single valued as in RFC 2911.

Its not a hint. The Printer MUST reject the job if the supplied charset is not supported.

Printer MAY also check the content while processing to see that the document data meets the coding requirements for the supplied charset. If the data contains something that is outside the charset encoding, the Printer MUST either (1) hold the job or (2) abort, and SHOULD NOT continue printing square boxes for encoded characters are outside the charset supplied by the client.

9. There is one issue embedded in the Document Object spec:

6.1.2.2 document-creator-application-version (text(127))

This OPTIONAL member Operation attribute identifies the version number of

the application that created the document. The intent of this attribute is for display to a human being, rather than being parsed by the Printer for purpose of affecting the interpreting by the Printer and so may also include the name of the application, as well as build or service pack numbers.
Examples:
"Winzip 8.1 (4331)", "Acrobat 5.0.5 10/26/2001", "Microsoft Word 2000 (9.0.4119 SR-1)"

ISSUE: OK that the purpose is human consumption, instead of program consumption and that it be the same as the application shows in its help message?

AGREED: OK.

In "document-creator-application-version-implemented" versions: Its OK for the Printer to omit some of the suffix stuff, since it is for Human consumption. So for example, the Printer MAY return "Winzip 8.1", or "Microsoft Word 2000".

Need a value of 'other' and 'any'

Printer will try on other versions than in its supported list, unless the client supplied "job-mandatory-attributes" = 'document-format-details.document-creator-application-version'.

The two other version attribute: "document-format-version" and "document-format-os-version" are intended for program consumption, not human consumption. Its possible that CIP4 will want to have both types of versions for: applications, operating systems, and documet-formats.

Tom

Here is last week's thread with more details:

-----Original Message-----
From: Hastings, Tom N [mailto:hastings@cp10.es.xerox.com]
Sent: Wednesday, March 26, 2003 15:05
To: sm@pwg.org; ps@pwg.org
Cc: CIP4 System Behaviour and Interoperability WG
[system_behaviour@cip4.org]; CIP4 Capabilities WG
[capabilities@cip4.org]
Subject: SM> More improvements to the IPP "document-format-version" and JDF Mi meOrFileTypeVersion attributes [4 ISSUES]

Ira and I had even further thoughts about the IPP "document-format-version" (wihch don't affect the corresponding JDF MimeOrFileTypeVersion attributes since it is a top level attribute in the FileSpec resource):

The proposal from yesterday is to make the values of IPP "docuent-format-version" and JDF MimeOrFileTypeVersion attributes be self-identifying, because they start with a prefix that identifies the format: "PDF/", "PS/", "PCL/", "TIFF/IT-", "DCS/", "MSWORD/", etc.

ISSUE 01: OK to add the prefix values as proposed yesterday to the IPP "docuent-format-version" and JDF MimeOrFileTypeVersion attributes to make the values self identifying indendent of the correspoding IPP "document-format" and JDF MimeType attributes?

Today's further thought is that we can now promote the IPP "document-format-version" member Operation attribute back to being a top level Document object attribute to accompany the existing "document-format" Operation attribute. This is because "document-format-version-supported" attribute now makes sense as a Printer Descrition attribute on its own, since the values would be things like:

"PDF/1.3", "PDF/X-1:2001", "PS/3", "PCL/5e", "TIFF/IT-FP/P1:1998", "DCS/2.0", "MSWORD/2000" and don't need to be paired up with the correspoding "document-format-supported" Printer attribute values: "applicaition/pdf", "application/postscript", "application/vnd.hp-PCL", and "application/msword" MIME type values.

ISSUE 02: OK to add a "document-format-version" operation and Document Description attribute to the IPP Document object spec?

Just like the "document-format" Operation attribute which is also a member attribute of the "document-format-details" (1setOf collection) Operation/Document Description attribute, we'd keep "document-format-version" as a member attribute as well with the same prefixed values.

This now means that "document-format" and "document-format-version" have all parallel construction:

a. They are both operation attributes.
b. They both have correspoding Document Description attributes that the Printer copies to.
c. They both have "xxx-supported" Printer attributes.
d. There is a "document-format-default" which now can have a corresponding "document-format-version-default" Printer attribute.
ISSUE 03: OK to add "document-format-default" printer attribute?
e. The Printer MUST reject the request if the "document-format" isn't supported.

ISSUE 04: Do we want to make the same rule for the "document-format-version" or keep it as a Best Effort, unless the client supplies "ipp-attribute-fidelity"='true' or "job-mandatory-attributes"='document-format-version'?

Comments?

Thanks,
Tom

-----Original Message-----
From: Hastings, Tom N [mailto:hastings@cp10.es.xerox.com]
Sent: Tuesday, March 25, 2003 14:32
To: sm@pwg.org; ps@pwg.org
Cc: CIP4 System Behaviour and Interoperability WG [system_behaviour@cip4.org]; CIP4 Capabilities WG [capabilities@cip4.org]
Subject: SM> Improvements of the IPP "document-format-version" and JDF MimeOfF ileTypeVersion attributes

Today on the FSG Job Ticket API, Ira, Claudia, Till, and I were discussion the current IPP "document-format-version" attribute in the IPP Document Object spec Working Draft, dated March 24, 2003 and the JDF MimeOfFileTypeVersion attribute in the JDF FIleSpec proposal, dated March 21, 2003.

This mail note has two specific proposals:

1. Put the version strings into a flat file that can be updated and used by implementers. The respective specs can have an initial sets of strings for the flat file.

2. Make the verson strings self-identifying.

Both of these specs are to be discussed on Thursday, March 27, (PWG Semantic Model WG and CIP4 System Behaviour and Interoperability WG).

The current text for the IPP "document-format-version" attribute is:

6.1.2.7 document-format-version (text(127))
This REQUIRED member Operation attribute contains the level or version of the document format identified by the "document-format" member attribute. The client MAY supply and the Printer MUST support this member attribute. Possible values are the same as the Printer MIB [rfc1759] prtInterpreterLangLevel (not prtInterpreterLangVersion), such as:

```
            '3':  For Postscript level 3 [rfc1759].
            '5e':  For PCL 5e [rfc1759].
```

Other example values are for those document formats that have well-defined version identification, either in the specification or as an actual field in the document content, such as::

```
            'PDF/X-1:2001':  For PDF/X-1 [iso15930].  "?
            'PDF/X-1.2001':  For PDF/X-1a [iso15930]
            'TIFF/IT-FP:1998':  TIFF/IT [iso12639] - Full Page -
baseline.
            'TIFF/IT-CT:1998':  TIFF/IT [iso12639] - Continuous Tone
picture data - baseline
            'TIFF/IT-FP/P1:1998':  TIFF/IT [iso12639] - Full Page -
profile 1
            'TIFF/IT-CT/P1:1998':  TIFF/IT [iso12639] - Continuous Tone
picture data - profile 1
```

The current text for the JDF MimeOfFileTypeVersion attribute is:

The level or version of the file format identified by MimeType or, FileType. Some example values are the same as the Printer MIB [rfc1759] prtInterpreterLangLevel, such as:
"1", "2", "3" for MimeType = "application/postscript"
"3", "4", "5", "5e" for MimeType = "application/vnd.hp-PCL"
Other example values are for those document formats that have well-defined version identification, either in the specification or as an actual field in the document content, such as:
"5.0", "6.0", "2000", "XP" for MimeType = "application/msword"

"1.3", "1.4", "PDF/X-1:2001", "PDF/X-1a:2001" for MimeType = "application/pdf"
"2.0" for FileType = "DCS"
"???" for FileType = "ICC Profile" ISSUE (Ann): What versions for ICC Profiles?
"TIFF-IT/FP:1998", "TIFF-IT/CT:1998", "TIFF-IT/LW:1998" for FileType = "TIFF/IT"
See Appendix A.1 "FileSpec Resource examples for MimeType, FileType, MimeOrFileTypeVersion attributes" for additional examples in common use by JDF applications.

The two suggestions for improvement is:

1. Put the version strings into a flat file so that implementers can get them, so that new values can be added to easily, after appropriate review, without having to republish either the IPP Document Object spec or the CIP4 JDF spec.

ISSUE: Whether both the PWG and CIP4 would have their own flat files that they would co-ordinate is an issue to be discussed.

2. The version string should be self identifying, e.g., PDF/1.3, not just 1.3, PS/3, not just 3, PCL/5e, not just 5e. And to build more on the Printer MIB, RFC 1759 (and soon to be published Printer MIBv2) use both the Language Family and the Language Level attributes for the version. The Language Families for PostScript is PS, for PCL is PCL, for PDF is PDF.

In the Printer MIB there are two attributes (MIBs call them "objects"):

```
prtInterpreterLangFamily OBJECT-TYPE
    --  NOTE: In RFC 1759, the enumeration values were implicitly
    --  defined by this object.
    SYNTAX     PrtInterpreterLangFamilyTC
    MAX-ACCESS read-only
    STATUS     current
    DESCRIPTION
        "The family name of a Page Description Language (PDL) or
        control language which this interpreter in the printer can
        interpret or emulate.

        NOTE: The above description has been modified from RFC 1759
        for clarification."

prtInterpreterLangLevel OBJECT-TYPE
    SYNTAX     OCTET STRING (SIZE(0..31))
    MAX-ACCESS read-only
    STATUS     current
    DESCRIPTION
        "The level of the language which this interpreter is
        interpreting or emulating.  This might contain a value like
        '5e'for an interpreter which is emulating level 5e of the PCL
        language. It might contain '2' for an interpreter which is
        emulating level 2 of the PostScript language. Similarly it
        might contain '2' for an interpreter which is emulating level 2
        of the HPGL language."
```

The prtInterpreterLangFamily has a Textual Convention for the assignment of about 62 printer languages. The symbolic names are of the form: langXxxx

For example there are the following:

```
        langPCL(3),          -- PCL.  Starting with PCL version 5,
                             -- HP-GL/2 is included as part of the
                             -- PCL language.
                             -- PCL and HP-GL/2 are registered
                             -- trademarks of Hewlett-Packard
                             -- Company.
        langHPGL(4),         -- Hewlett-Packard Graphics Language.
                             -- HP-GL is a registered trademark of
                             -- Hewlett-Packard Company.
        langPJL(5),          -- Peripheral Job Language. Appears in
                             -- the data stream between data intended
                             -- for a page description language.
                             -- Hewlett-Packard Co.
        langPS(6),           -- PostScript (tm) Language
                             -- Postscript - a trademark of Adobe
                             -- Systems Incorporated which may be
                             -- registered in certain jurisdictions
        langIPDS(7),         -- Intelligent Printer Data Stream
                             -- Bi-directional print data stream for
                             -- documents consisting of data objects
                             -- (text, image, graphics, bar codes),
                             -- resources (fonts, overlays) and page,
                             -- form and finishing instructions.
                             -- Facilitates system level device
                             -- control, document tracking and error
                             -- recovery throughout the print
                             -- process.
                             -- IBM Corporation.

...<middle section deleted>

        langPDF(54),         -- Not in RFC 1759
                             -- Adobe Portable Document Format
                             -- Adobe Systems, Inc.
        langRPDL(55),        -- Not in RFC 1759
                             -- Ricoh Page Description Language for
                             -- printers.
                             -- Technical manual "RPDL command
                             -- reference" No.307029
                             -- RICOH, Co. LTD
        langIntermecIPL(56), -- Not in RFC 1759
                             -- Intermec Printer Language for label
                             -- printers.
                             -- Technical Manual: "IPL Programmers
                             -- Reference Manual"
                             -- Intermec Corporation
        langUBIFingerprint(57),   -- Not in RFC 1759
                             -- An intelligent basic-like programming
                             -- language for label printers.
                             -- Reference Manual: "UBI Fingerprint
                             -- 7.1", No. 1-960434-00
                             -- United Barcode Industries
        langUBIDirectProtocol(58),  -- Not in RFC 1759
```

```
                             -- An intelligent control language for
                             -- label printers.
                             -- Programmers guide: " UBI Direct
                             -- Protocol", No. 1-960419-00
                             -- United Barcode Industries
        langFujitsu(59),     -- Not in RFC 1759
                             -- Fujitsu Printer Language
                             -- Reference Manual:
                             -- "FM Printer Sequence" No. 80HP-0770
                             -- FUJITSU LIMITED
        langCGM(60),         -- Not in RFC 1759
                             -- Computer Graphics Metafile
                             -- MIME type 'image/cgm'
        langJPEG(61),        -- Not in RFC 1759
                             -- Joint Photographic Experts Group
                             -- MIME type 'image/jpeg'
        langCALS1(62),       -- Not in RFC 1759
                             -- US DOD CALS1 (see MIL-STD-1840)
                             -- MIME type 'application/cals-1840'
        langCALS2(63),       -- Not in RFC 1759
                             -- US DOD CALS2 (see MIL-STD-1840)
                             -- MIME type 'application/cals-1840'
        langNIRS(64),        -- Not in RFC 1759
                             -- US DOD NIRS (see MIL-STD-1840)
                             -- MIME type 'application/cals-1840'
        langC4(65)           -- Not in RFC 1759
                             -- US DOD C4 (see MIL-STD-1840)
                             -- MIME type 'application/cals-1840'
```

So take the prtInterpreterLangFamily textual convention after the "lang", follow it with a "/" and then have the prtInterpreterLangLevel.

So the updated IPP "document-format-version" member attribute would become:

6.1.2.7 document-format-version (text(127))

This REQUIRED member Operation attribute contains the level or version of the document format identified by the "document-format" member attribute. The client MAY supply and the Printer MUST support this member attribute. Possible values are the same as the Printer MIB [rfc1759] prtInterpreterLangFamily textual convention (minus the "lang" prefix) and prtInterpreterLangLevel (not prtInterpreterLangVersion) separated by a "/", such as:

'PS/3': For Postscript level 3 [rfc1759].

'PCL/5e': For PCL 5e [rfc1759].

Other example values are for those document formats that have well-defined version identification, either in the specification or as an actual field in the document content, such a:

'PDF/X-1:2001': For PDF/X-1 [iso15930]. "?

'PDF/X-1.2001': For PDF/X-1a [iso15930]

'TIFF/IT-FP:1998': TIFF/IT [iso12639] - Full Page - baseline.

'TIFF/IT-CT:1998': TIFF/IT [iso12639] - Continuous Tone picture data - baseline

'TIFF/IT-FP/P1:1998': TIFF/IT [iso12639] - Full Page - profile 1

'TIFF/IT-CT/P1:1998': TIFF/IT [iso12639] - Continuous Tone picture data - profile 1

See PWG www.pwg.org [need URL] for a flat file list of the version strings currently recognized for use in the PWG Semantic Model and derivative protocols, such as IPP and PSI.

and the updated JDF MimeOrFileTypeVersion attribute would become:

The level or version of the file format identified by MimeType or, FileType. Some example values are the same as the Printer MIB [rfc1759] prtInterpreterLangFamily textual convention (minus the "lang" prefix) and prtInterpreterLangLevel, such as:
"PS/1", "PS/2", "PS/3" for MimeType = "application/postscript"
"PCL/3", "PDL/4", "PCL/5", "PCL/5e" for MimeType = "application/vnd.hp-PCL"
Other example values are for those document formats that have well-defined version identification, either in the specification or as an actual field in the document content, such as:
"MSWORD/5.0", "MSWORD/6.0", "MSWORD/2000", "MSWORD/XP" for MimeType = "application/msword"
"PDF/1.3", "PDF/1.4", "PDF/X-1:2001", "PDF/X-1a:2001" for MimeType = "application/pdf"
"DCS/2.0" for FileType = "DCS"
"???" for FileType = "ICC Profile" ISSUE (Ann): What versions for ICC Profiles?
"TIFF-IT/FP:1998", "TIFF-IT/CT:1998", "TIFF-IT/LW:1998" for FileType = "TIFF/IT"
See CIP4 www.cip4.org [need URL] for the flat text file that contains the version strings currently recognized for the "FileSpec Resource attributes: MimeType, FileType, MimeOrFileTypeVersion in common use by JDF applications.

Comments?

Tom