



AFP Consortium

AFP Consortium (AFPC) and AFP Update

XPLOR Document University

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Agenda

- AFPC News
- AFP Update
- Future Directions
- Q & A

AFP Consortium



AFP Consortium (AFPC) News

- AFPC was incorporated into a non-profit corporation on February 25, 2009
- Incorporation allows the AFPC to function as a vendor-neutral open standards body that is a legal entity
 - Able to own trademarks for terms such as AFP, MO:DCA, IPDS, CMOCA, ...
 - Able to own copyrights to architecture documents such as specifications, white papers, etc.
 - Can collect membership dues to fund activities to promote AFP:
 - AFPC participation and booth at conferences such as XPLOR, OnDemand
 - Marketing activities
 - Compliance and certification activities
 - Can negotiate with 3rd parties on behalf of AFPC members, e.g. for licenses to software, ICC profiles, etc.



AFPC News (contd)

- Corporation run by an annually elected Board of Directors (BOD) and their appointed/elected officers
- In recognition of IBM/InfoPrint's work on AFP for the past 25 years, InfoPrint is identified as the "Founder" of the AFPC and has the right to appoint a standing director to the BOD
- AFPC governing body:
 - **Board of Directors (BOD) for 2009:**
 - Jeff Paterra, InfoPrint - Sr. VP & GM, Technology & Solutions Development
 - Michele Pracchi, Océ – Sr. VP Corporate Software Development
 - Dennis Ladd, StreamServe – President and CEO
 - Paul Gerelle, MPI Tech – Director
 - Roberto Anzola, ISIS Papyrus - Board Director and Manager of Research and Development



AFPC News (contd)

– **Officers for 2009:**

- President and Secretary: Harry Lewis, InfoPrint - Program Manager
Intellectual Property & Open Standards
- Treasurer: Paul Gerelle, MPI Tech – Director



AFPC News (contd)

- AFPC Membership & annual dues
 - Core Member (\$10K):
 - govern AFPC, nominate candidate for BOD, nominate candidate for officer position, elect BOD
 - Participate in development of AFP (meetings, workgroups, architecture voting, etc.)
 - InfoPrint, as Founder, is a Core Member
 - Participating Member (\$5K):
 - Participate in development of AFP (meetings, workgroups, architecture voting, etc.)
 - Associate Member (\$1K):
 - Observe the workings of the AFPC (see internal architecture docs, etc., but no active participation, no architecture voting)



AFPC News (contd)

- How can I join?
 - AFPC Bylaws: “....Any natural person or entity with a significant interest in developing and promoting the AFP architecture and products and services based on the AFP architecture may be a member....”
 - Application must be approved by the BOD
 - Contact myself (hohensee@us.ibm.com) or Harry Lewis (harryl@us.ibm.com)



AFPC News (contd)

- AFPC Website - see www.afpcolor.org :
 - List of members and links to member websites
 - Architecture publications
 - All current architecture references
 - Addendums to current references
 - White papers
 - New content:
 - IOCA Reference (November 2008)
 - MO:DCA Addendum 1 (Image Resolution triplet; September 2008)
 - MO:DCA Addendum 2 (Multipage Containers; September 2008)
 - MO:DCA-L Reference
 - Presentations (XPLOR, etc.)



AFP Update

- MO:DCA-L definition has been moved from the MO:DCA reference to its own document
 - What is it?
 - MO:DCA-L (“L” stands for “Library”) is the MO:DCA “Resource” format; contrast with ***MO:DCA-P (“P” stands for “Presentation”) which is the format used in AFP***
 - Currently defined in MO:DCA reference (SC31-6802-07) in chapter 7 – “MO:DCA Resource Interchange Set”
 - Has not changed since 1990
 - Only used in IBM’s OS/2 – defines the OS/2 Presentation Manager (PM) metafile format
 - Uses many of the MO:DCA-P structured fields and triplets plus a few that are unique to MO:DCA-L
 - Uses the GOCA DR/3V1 function set (not part of AFP GOCA and not used in AFP; defined in the “old” GOCA reference, available on the AFPC website)
 - Uses the IOCA FS20 function set (not used in AFP; defined in the IOCA reference)
 - Similar to Windows GDI metafile



AFP Update (contd)

- How is it defined in the MO:DCA reference?
 - References to the MO:DCA resource format sprinkled throughout document
 - Color Attribute Table structured fields (BCA, CAT, MCA, ECA) defined in ch. 5 - “MO:DCA Structured Fields”
 - CAT content defined in appendix A – “The Color Table Resource”
 - Complete format defined in chapter 7 – “MO:DCA Resource Interchange Set”
- All MO:DCA-L information and all references to MO:DCA-L will be gone from the MO:DCA reference in the next update, and are now provided in the new document:
 - “*MO:DCA-L: The OS/2 Presentation Manager Metafile (.met) Format*” available on the AFPC website
- ***The MO:DCA reference will be updated to now refer to “MO:DCA-P” simply as “MO:DCA”, and to make both terms synonymous***



AFP Update (contd)

MO:DCA-L file structure

Begin Document

Begin Resource Group

Color Attribute Table (BCA, CAT, ECA)

Begin Image Object (IOCA FS20)

Begin Resource Group

Color Attribute Table (BCA, CAT, ECA)

End Resource Group

Image Object Environment Group (BOC, MCA, EOC)

Image Data Descriptor (IDD)

Image Picture Data (IPD)

.....

End Image Object

Begin Graphics Object (GOCA DR/3V1)

Graphics Object Environment Group (BOC, MCA, MCF, MDR, EOC)

Graphics Data Descriptor (GDD)

Graphics Data (GAD)

.....

End Graphics Object

End Resource Group

End Document



AFP Update (contd)

- “Old” GOCA definition now available on AFPC website
 - “Graphics Object Content Architecture Reference” (SC31-6804-01)
 - Defines DR/3V1 function set used in MO:DCA-L
 - Superset of AFP GOCA (DR/2V0++)

AFP Update (contd)

- New function: Image Resolution triplet (defined in MO:DCA Addendum 1, available on AFPC website)
 - Background:
 - Not all image formats specify their actual physical dimensions
 - JFIF and GIF formats specify the number of pixels in the x and y directions, but not the resolution in the x and y directions, e.g.
 -
 -
 - Same number of pixels in each line; in the first line the pixels are rendered with a resolution of 2x/inch, in the second line x/inch*
 - If resolution not specified, presentation device needs to make assumption on the resolution which may or may not be correct
 - Device may assume that resolution of image matches the device resolution. In that case a 600 pixel x 1200 pixel image prints as a 1 inch by 2 inch image on a 600 dpi printer, but as a 2 inch by 4 inch image on a 300 dpi printer
 - Device may assume fixed resolution for the image, such as 300 dpi. In that case, if the image was created at 72 dpi, the printer will print the image at roughly 1/4 of the real size
 - Image formats, like IOCA and TIFF do specify the native resolution and therefore allow an output device to render the image at the right size



AFP Update (contd)

- Solution:
 - Define a new Image Resolution (X'9A') triplet to specify the image resolution in the x and directions
 - Allow the Image Resolution triplet on the following structured fields:
 - Include Object (IOB)
 - Container Data Descriptor (CDD) (in case container is specified directly within BGP/EPG)
 - Preprocess Presentation Object (PPO) (in case the object is to be pre-ripped)
 - If the object is installed in a library using a Resource Access Table (RAT), the triplet information may also be stored in the Data Object RAT entry for that object

AFP Update (contd)

- Image Resolution (X'9A') Triplet Syntax

Offset	Type	Name	Range	Meaning
0	UBIN	Tlength	10	Length of the triplet, including Tlength
1	CODE	Tid	X'9A'	Identifies the Image Resolution triplet
2-3				Reserved; must be zero
4	CODE	XBase	X'00'- X'01'	Unit base for image resolution in the X direction: <ul style="list-style-type: none">• X'00' – 10 in• X'01' – 10 cm
5	CODE	YBase	X'00'- X'01'	Unit base for image resolution in the Y direction: <ul style="list-style-type: none">• X'00' – 10 in• X'01' – 10 cm (must be same as for X direction)
6-7	UBIN	XResol	1-32767	Number of image points in X direction per X unit base
8-9	UBIN	YResol	1-32767	Number of image points in Y direction per Y unit base

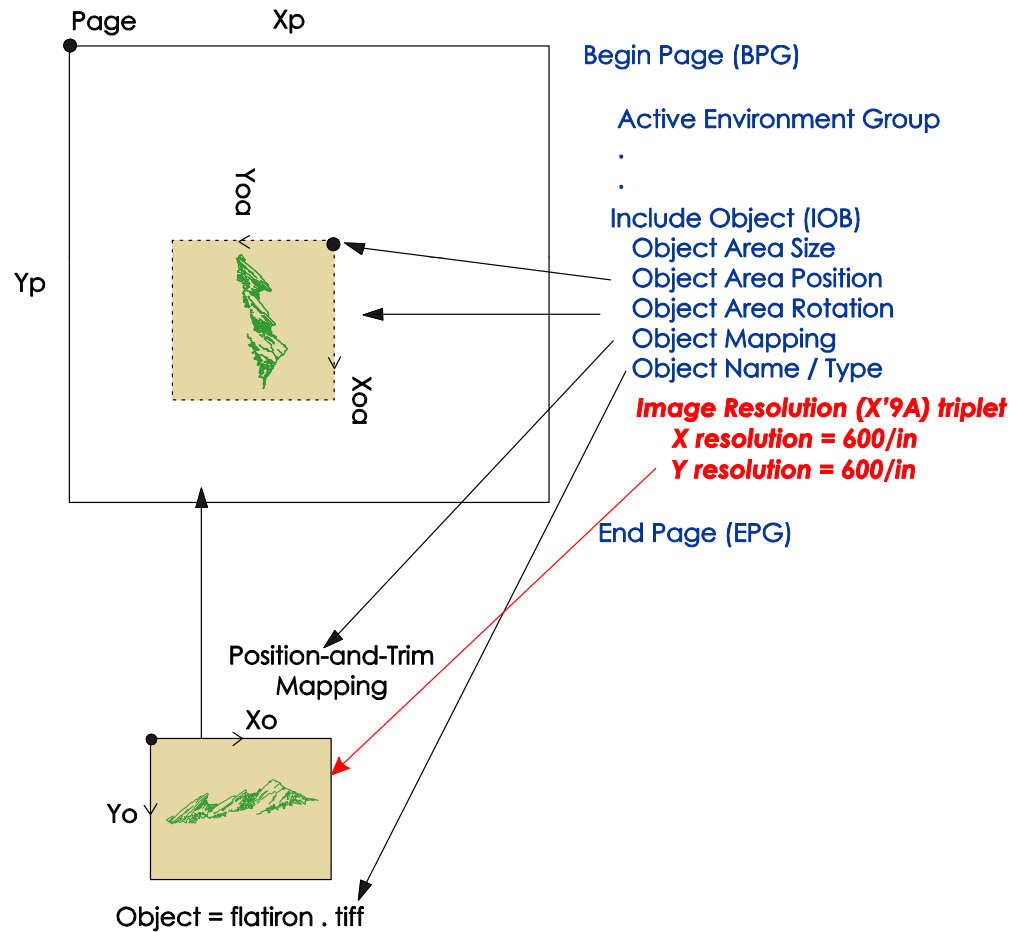


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AFP Update (contd)

- Image Resolution (X'9A') Triplet Usage





AFP Update (contd)

- New function: Multipage Containers (defined in MO:DCA Addendum 2; available on AFPC website)
 - Background:
 - Current AFP architecture only allows single-page objects to be carried in AFP Object Containers
 - Formats such as TIFF and PDF, which are supported as containers in AFP, can contain many images or pages; if such a file is referenced using current architecture, most products select the first image/page
 - Would be useful to support multi-page PDF and TIFF as containers, and then select individual objects/images for presentation
 - For PDF, would allow RIP to be set up once and then used for all PDFs in file



AFP Update (contd)

- Solution:
 - Define concept of a multipage resource object:
 - File that contains multiple pages or multiple “paginated objects” (e.g. images) for presentation
 - Each file type is registered in the MO:DCA Registry with an object-type OID that identifies it as a file that may contain multiple pages or paginated objects
 - When referenced in data stream, e.g. with an Include Object (IOB), ***must be indexed to select only a single paginated object for presentation***
 - Register new multipage objects in MO:DCA Registry
 - *TIFF Multiple Image File*
 - *TIFF Multiple Image - without Transparency – File*
 - *PDF Multiple Page File*
 - *PDF Multiple Page - with Transparency - File*
 - Allow the Object Offset (X'5A') triplet on the IOB, CDD, PPO to select a single paginated object in the referenced multipage file



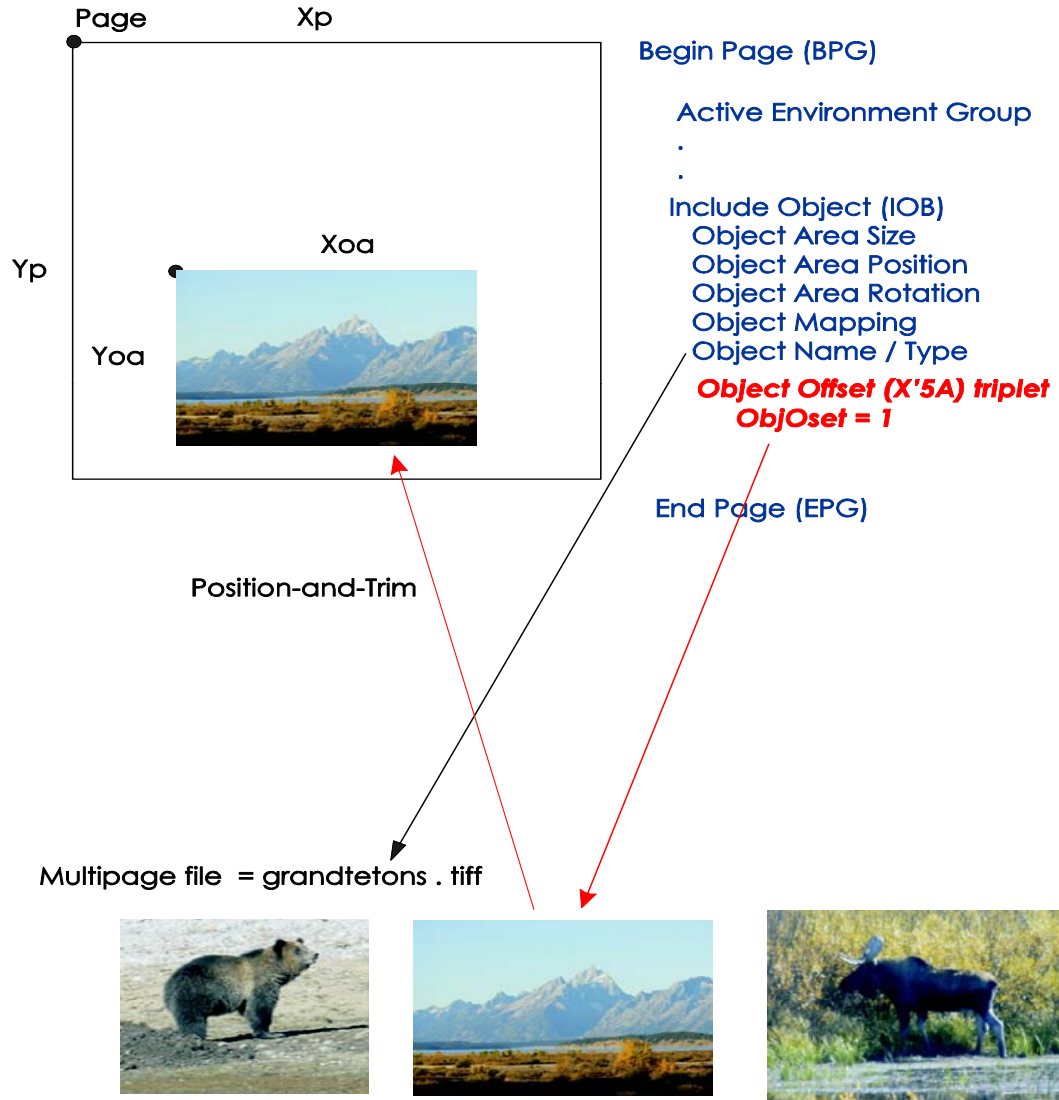
AFP Update (contd)

- Object Offset X'5A' Syntax

Offset	Type	Name	Range	Meaning
0	UBIN	Tlength	8, 12	Length of the triplet, including Tlength
1	CODE	Tid	X'5A'	Identifies the Object Offset triplet
2	CODE	ObjTpe	X'A8', X'AF'	Object type to be counted: <ul style="list-style-type: none">• X'A8' – document• X'AF' – page or paginated object
3				Reserved; must be zero
4–7	UBIN	ObjOset	X'00000000' – X'FFFFFFFF'	Number of objects that precede the selected object in the document or print file
8–11	UBIN	ObjOstHi	X'00000000' – X'FFFFFFFF'	Number of objects that precede the selected object, high-order bytes

AFP Update (contd)

- Usage example





AFP Update (contd)

- BCOCA Update
 - The USPS Intelligent Mail Barcode
 - Fully supported by many IPDS printers and most print servers
 - Latest implementations can create the smallest size bar code symbol that the post office allows
 - Small bar code symbol size
 - Supporting printers now allow two sizes for the fixed-size bar codes (such as, POSTNET, PLANET, RM4SCC, Dutch KIX, Maxicode, Australia Post, and USPS Four-State)
 - Either an optimal or a small bar code symbol can be produced using the same method as is used for the USPS Four-State bar code
 - Desired symbol width parameter
 - New parameter has been added to the Bar Code Symbol Descriptor in previously reserved bytes 10-11
 - Allows user to specify a desired bar code symbol width (in 1440ths)
 - Supporting printers produce a symbol that fits into the designated width at the largest size possible (module width parameter is ignored)
 - Non-supporting printers ignore the value in bytes 10-11 and use the module width to determine the final symbol width

AFP Update (contd)



- AFP GOCA Update

- The Graphics Data Descriptor (GDD) is being extended to provide the following additional functions:
 - Allow the specification of an “absolute” line width in 1440ths of an inch; the Set Line Width and Set Fractional Line Width orders will then specify multipliers of this absolute line width
 - Allow the specification of a process color using the AFP color specification syntax (i.e. the syntax in the Color Specification X'4E' triplet)
- Details will follow; please check the AFPC website

- PTOCA Update

- Significant ongoing work effort to improve Unicode support
 - “Extended” code pages are now available; they map IBM code page data to Unicode values so that TrueType/OpenType fonts can be used with EBCDIC and ASCII data including user-defined code points and non-IBM-defined characters
 - How to support Unicode complex scripts
 - right-to-left languages like Arabic , Urdu, Farsi, and Hebrew
 - languages that require characters be presented with different shapes or in a different order than their storage order, e.g. south Asian languages that require characters to be repositioned, reordered, or split, depending on adjacent characters
 - How to better support migration from AFP FOCA-based fonts (raster and outline) to TrueType/OpenType fonts
- Information will be placed on the AFPC website as it becomes available



AFP Update (contd)

- CMOCA Update
 - Printer vendors and composition tool vendors have begun rolling out products and product updates that support the base CMOCA architecture
 - To get accurate and consistent color output from AFP workflows, compliance with CMOCA, especially tagging of input colors with audit Color Management Resources (CMRs), is essential!
- IOCA Update
 - New IOCA reference (S550-1142-00) was generated in August, 2008 and is now available on the AFPC website
- AFP Line Data
 - Extensions to the PageDef to keep up with other AFP extensions are under way; this architecture is still very much alive!!



Future Directions

- Improve interoperability of AFP products
 - Define conformance level(s)
 - Compliance testing
 - Certification
- Integrate new object containers into AFP as their industry acceptance and use increases
- Develop more robust and flexible metadata architecture
 - NOPs are unarchitected
 - Tag Logical Element structured fields (TLEs) are limited to attribute name/value pairs
- Investigate integration of JDF into AFP
- Improve communications with customers, users, and user groups

If you want to get more involved, please send us a note!!

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Summary

- The AFPC has been incorporated into a standards body that is a non-profit legal entity; as such it can own intellectual property, negotiate with third parties, fund conference participation and marketing activities
- Various AFPC membership levels are now available
- Image resolution specification and support for multipage containers are among a number of AFP extensions that have recently been processed; more are in the pipeline as the AFPC continues to develop, update, and extend AFP to be the best-of-breed presentation architecture for variable-data production print



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- Q & A

Questions?