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THE AFP CONSORTIUM AND THE FUTURE OF AFP: 2015 STATUS REPORT

What is the AFP Consortium?

- The purpose of the AFP Consortium is to develop, define and promote the AFP architecture. It's goals are to:
 - Develop AFP as the best-of-breed presentation architecture for monochrome and color production variable-data printing
 - Ensure seamless interoperability of AFP products from the various AFPC members
 - Provide for compatibility between AFP environments and other presentation environments such as web/view.

April 5-7, 2016

Xplor International



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Standards body for AFP

Design and improve AFP so that anyone can develop applications that create print files that will print using different vendors' products

About the AFP Consortium

- Formed in 2004
- The scope of the Consortium is the entire Advanced Function Presentation (AFP) architecture
- Currently 33 members from across the industry

Core Members	IBM, ISIS Papyrus, MPI Tech, Océ (Canon), Ricoh, Xerox
Participating Members	ASG, CDP, Compart, Crawford, CRE-DO, EFI, FIS, GMC, HP, Kodak, Lexmark, Oracle, Pitney Bowes, PrintSoft, Scriptura, Sefas, Solimar, TAGG, Xeikon
Associate Members	Assentis, DocPath, doxee, Gemadec, LRS, metaforce, NearStar, RISO

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Began with the AFP color architecture, then all of AFP
Showed that different interests could successfully work together to produce a common standard.

The AFP Consortium provides

- Collaboration - Membership breadth, depth and leadership
- Balance -Future strategy, grand scheme enablement vs pragmatic solutions
- Roles – Architecture / Compliance / Promotion

NEW AND UPDATED AFP ARCHITECTURE

AFP/A: Archive ISO Standard Approved!

–ISO 18565:2015

–Now published at

[http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?
csnumber=62901](http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=62901)

ISO 18565:2015 specifies the AFP document architecture by defining a subset appropriate for long-term preservation and retrieval. This subset will avoid ambiguity by assuring page independence and eliminating the use of resolution dependent fonts and images, device default fonts and external resources.

- Based on IS/3
 - except for device-dependent functions
 - resources must be inline
 - requires Metadata (MOCA)
- Create AFP that can be archived, retrieved and printed so it can safely be projected to have future longevity

AFP/A Summary

- Standard interchange set so documents can be retrieved and printed over time
 - Long “shelf life”
- Descriptive information to ease retrieval
- All the benefits of AFP



Bar Code Architecture

- BCOCA

- New Bar Code Architecture Reference published

- <http://afpcinc.org/wp-content/uploads/2015/06/BCOCA-Reference-09.pdf>

- POSTNET and PLANET Deprecated

- The USPS is retiring the use of POSTNET and PLANET Code on discounted mailings effective in January 2014. Customers that wish to continue to use these older barcodes can do so but they will not receive a discount.
 - The description of these bar code types will remain and BCOCA products can continue to use them

GOCA Graphics

- Custom Patterns
 - GOCA currently has a limited set of predefined patterns that can be used to fill an area
 - These patterns are not well defined and may produce different results in different implementations
- GOCA drawing orders will be used to define a custom pattern
 - Custom patterns are selected by the existing mechanism choosing pattern set and symbol.
 - Any vector drawing that can be created with GOCA orders can be used as a custom pattern to fill areas
 - Custom patterns will be implementation independent
 - Related function:
 - Gradients for Area Fill
 - IPDS Support for GOCA Custom Patterns
 - Based on Graphics Object Content Architecture for Advanced Function Presentation Reference, AFPC-0008-02, dated January 2012

Set Pattern Set extended range x'01' – x'FD' (253)

Set Pattern Symbol extended x'01' – x'FF

GOCA Custom Patterns

Begin Custom Pattern: Pattern set/symbol

GOCA drawing orders...



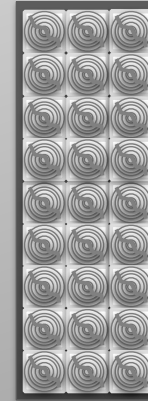
End Custom Pattern

Begin Area

Set Pattern Set to pattern set ID

Set Pattern Symbol to symbol ID

End Area



characters, markers, and patterns are not all the same
can't nest custom patterns
definition scope segment

IOCA Image

–Work Continues on nColor Color Model: FS48

- superset of FS45

- Define a new FS48 function set that is a superset of FS45 but adds the ability to include tiles that use the nColor color model.

 - new color model in IDE: $x'8n'$ nColor ($X'2' \leq n \leq X'F'$)

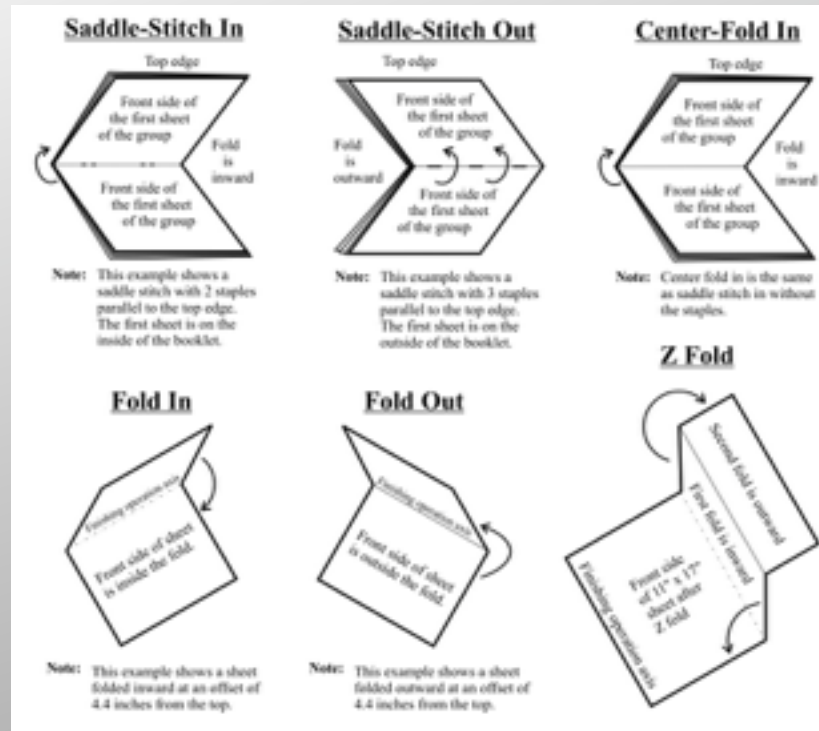
 - nColor means that each value is to be treated as a set of n separate intensity values. A color management resource from the controlling environment will be required to process the n values

MO:DCA

- Support for Crease Finishing
 - The AFP architecture supports many finishing operations but 'Crease' was not supported.
 - Crease is very similar to a fold, except that instead of doing a full fold, it simply creates a crease line in the paper
 - Crease was added as a finishing option that turns a fold operation into a crease operation. Any possible folding operation easily becomes a possible crease operation by simply specifying the correct finishing option.
 - Adds a 'fold out' operation for completeness
 - The Medium Finishing Control FORMDEF structured field reserved byte 3 now becomes Finishing Operation option:

Offset	Type	Name	Range	Meaning	M/O	Enc
3	CODE	FOpOpt	X'00', X'01'	Finishing operation option: X'00' No finishing option X'01' Crease	M	X'06'

Crease / Fold Finishing



MO:DCA Now Supports SVG

- Support for SVG (Scalable Vector Graphics) added to MO:DCA non-OCA object types
 - XML-based vector image format for two-dimensional graphics.
 - The SVG specification is an open standard developed by the World Wide Web Consortium.
 - SVG images and their behaviors are defined in XML text files.
 - This means that they can be searched, indexed, scripted, and compressed.
 - As XML files, SVG images can be created and edited with any text editor, but are more often created with drawing software.
 - For more information see https://en.wikipedia.org/wiki/Scalable_Vector_Graphics

MO:DCA GA (Graphic Arts)

- With the majority of transaction documents originating as AFP and the majority of creative messaging coming in the form of PDF, there is a huge demand for a universal VDP solution that combines these two presentation architectures in an effective way. An optimum approach would incorporate the best of both worlds, achieving:
 - High speed variable text, business graphics and bar code
 - Proven, managed production print integrity
 - Full ISO compliant latest level PDF with transparency for creative messaging
- This optimum approach is based on AFP with PDF containers.

MO:DCA GA (Graphic Arts)

- A new mechanism is established that allows simple characterization of the level of AFP and PDF support - AFP/GA - required to configure a leading-edge AFP + PDF workflow.
- AFP/ GA complements IS/3.
 - It is not expected that products support only AFP/GA
 - It is expected that products support IS/3 as the base level of AFP support, and then add support for AFP/GA.

It remains difficult for customers to configure an AFP + PDF workflow where all of the pieces – formatter, server, transform, and printer, have the proper level of PDF support in order to interoperate flawlessly. IS/3 helps but does not address the whole problem because it does not contain support for PDF containers. We need to make this integration easy for customers.

MO:DCA: Function Sets

- AFP Function Set concept is used to formally define AFP/GA
 - A MO:DCA function set is a set of constructs that are used to extend the functionality of a MO:DCA interchange set.
 - The function set is normally not sufficiently pervasive or complex to warrant definition of a new interchange set.
 - Therefore each function set is defined by its formal extensions to one or more interchange sets.
 - MO:DCA function sets are identified using the MO:DCA Function Set (X'8F') triplet.
 - Since MO:DCA interchange compliance is based on interchange sets, when an interchange set is extended with one or more function sets, compliance is based on the definition of the interchange set plus the function set(s).

The use and spread of PDF as a document format, in both paper-based and non-paper-based workflows and applications is well known. PDF has not been a major player in transaction printing, but the new ISO definition of PDF/VT attempts to change that. PDF/VT is aimed squarely at the transaction print market, where transaction documents are proving to be an effective vehicle for targeted marketing with advertising messages that contain high quality color and sophisticated graphics. There is evidence of some convergence of the graphic arts market – where PDF is dominant, and the transaction market – where AFP is dominant. The big question is - which presentation architecture is appropriate for such converged environments?

Several factors weigh in the balance:

- Designers are used to desktop publishing with PDF and will not compromise creativity.
- AFP is a high performance architecture for variable data printing.
- A full transparency model is essential for color promotional content but an unnecessary performance hindrance throughout the remaining document content.

With the majority of transaction documents originating as AFP and the majority of creative messaging coming in the form of PDF, there is a huge demand for a universal VDP solution that combines these two presentation architectures in an effective way. An optimum approach would incorporate the best of both worlds, achieving:

- High speed variable text, business graphics and bar codes
- Proven, managed production print integrity
- Full ISO compliant latest level PDF with transparency for creative messaging

We propose that this optimum approach is based on AFP with PDF containers.

MO:DCA Function Sets

- The MO:DCA Interchange Set (X'18') triplet on the BPF/BDT must specify the interchange set and indicate that the interchange set is extended with one or more function sets
 - The MO:DCA Function Set (X'8F') triplet on the BPF/BDT must specify the function set ID using the FctSetID parameter
- Two general classes of products may claim compliance with an interchange set, as follows:
 - Generator
 - Any product that is capable of producing print files containing a valid subset of the interchange set. A valid subset of an interchange set is one in which all generated structured fields belong to the interchange set and comply with all of its ordering and pairing requirements, and all parameter values fall within the ranges specified by the interchange set.
 - Receiver
 - Any product that is capable of properly interpreting all MO:DCA structured fields in print files that are compliant with the interchange set.
- Note that products, such as transforms, may act as both a generator and a receiver.

, e.g. ISid=X'0D80': IS/3 + function set(s)

, e.g. FctSetID=X'0001': MO:DCA GA.

Remind what interchange set is

PTOCA Text

- Clarify PTOCA Initial Text Conditions
 - Initial Text Conditions can appear in the Presentation Text Descriptor (PTD)
 - They should appear in a single chained set of commands, beginning with a PTOCA escape (x'2BD3') and terminated by an unchained text control
 - Now approved as final architecture
 - The Set Variable Space Character Increment (SVI) control sequence is modal, but is not an initial text condition.
 - For text major text, SVI is not supposed to be reset by AFP presentation servers when a MO:DCA BPT structured field is encountered, and therefore later text on the same page will inherit any SVI set previously on the page.
 - If no SVI is specified in a page, then the default variable space character increment of the active coded font is used.

New PTOCA Reference

- A new edition of the PTOCA Reference **is** published!
<http://afpcinc.org/wp-content/uploads/2016/04/PTOCA-Reference-03.pdf>
 - last edition was published in 1997, 19 years ago
 - a considerable amount of new architecture was added in the interval, including
 - New Control Sequences for Complex Text Support
 - New Exception id EC-1A03: Invalid Unicode Data
 - Highlight Color Space Clarifications
 - New PTOCA PT4 Function Set

PT4 raises limits such as maximum fonts/page, adds Unicode complex text processing

IPDS

- IPDS Support for Text Objects
- Allow PNG Images in an IPDS Data Stream
- New SGO Group Operation (Keep Group Together as a Recovery Unit)
- NACK for Invalid FQN Value
- IPDS Support for Bearer Bars in BCOCA Interleaved 2-of-5
- Exception ID for Saved Page Group No Longer Usable
- Color for Bi-Level and Grayscale Image
- Additional Fold Finishing Operations
- Media Feed Direction
- **Additional Secondary Resources and SVG Support**
- **Crease Finishing**
- Object Capture Extensions and Tools
- IPDS Support for GOCA Nonzero Winding Mode
- IPDS Support for GOCA Custom Line Types
- Object-Container Version Support SDF in OPC
- Object Area Orientation
- Additional Exception Information
- Identifying Exception IDs in Context
- Secondary Resources with Multi-Page PDF
- IPDS Support for GOCA Marker Size
- **IPDS Support for MO:DCA Graphic Arts Function Set**
- **Object Version Clarifications**

<http://afpcinc.org/wp-content/uploads/2014/07/IPDS-Reference-10.pdf>

Questions??

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