Introducing ISO standards for PDF “processing steps” and “print product metadata”

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Two companies (sharing office space)

axaio software

- Creator of workflow Plug-Ins for InDesign / Illustrator
- Automate and standardise repetitive export tasks
- Tool for better PDF/UA creation from Adobe InDesign

callas software

- Creator of pdfToolbox, pdfaPilot and Acrobat Preflight
- PDF automation for prepress, print and document processes
- Active at ISO for PDF based standards

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What are we talking about?

“processing steps metadata”

- metadata for “optional content groups” (layers)

- defining post processing steps in packaging industry, like cutting, gluing, embossing, …

“print product metadata”

- metadata based on pages / page ranges

- defining workflow options for print processing, e.g. which postal code range

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“Processing steps metadata”

ISO 19593-1

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What is "Processing steps metadata"

ISO 19593-1

- "Graphic technology — Use of PDF to associate processing steps and content data"

- Current status: FDIS ballot (to be released soon)

- Standardised PDF layer metadata for non-printing "processing steps"

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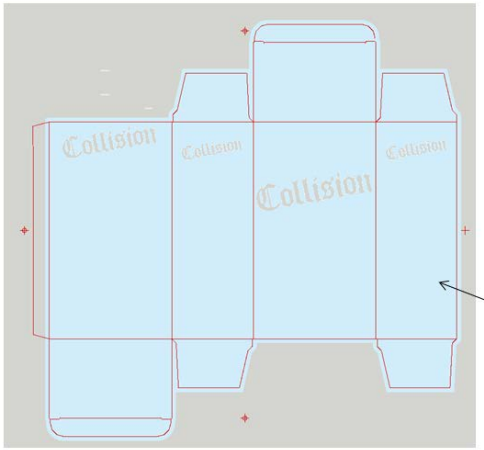
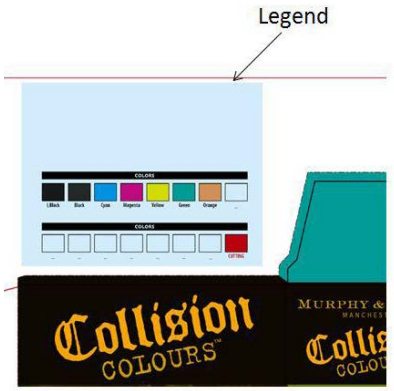
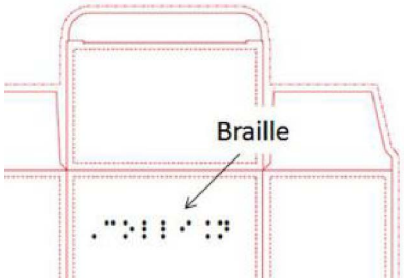
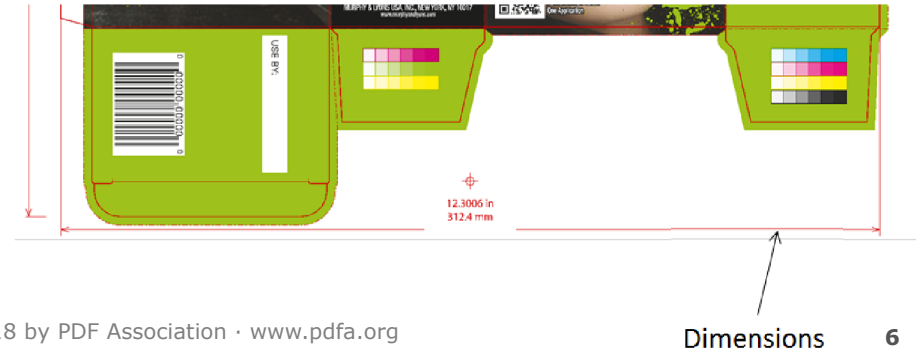
What is “Processing steps metadata”









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Current situation

Companies have solutions

- But no industry standard
- Using spot colours
- Using “standardised” (per company!) layer names
    - International?
    - … but, was it “die line”, or just “die”, or s.th. else?
    - Layer names are “designed” for display
- …

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Ghent Workgroup

- Packaging subcommittee of the Ghent Workgroup started to build a metadata standard
  - "Storing non printing contour data in PDF"
  - "Storing processing step data in PDF"
- Mainly designed for packaging industry
  - Also helpful for labels, large format, digital printing
  - Where ever "post production" is used

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Processing steps metadata

Compared to the Ghent Workgroup specification ISO 19593-1 applies additional rules

- How the "print surface" has to be determined in a PDF

- Which objects (on which layers) may overlap the print surface and which ones not

- What types of PDF objects may occur on a layer describing paths (e.g. a cut line)

- What types of PDF objects may occur on a layer describing a surface (e.g. gluing)

- Rules for layers describing path or surfaces

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Structure of “processing steps” hierarchy

Groups (GTS_ProcStepsGroup)

- Structural *
- Position *
- Dimensions
- White
- Braille
- Varnish
- Legend

* Structural and Position group does have types (GTS_ProcStepsType)

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Processing step “Structural”

- related to finishing processes

- Types (GTS_ProcStepsType)

Cutting	PartialCutting	ReversePartialCutting
Creasing	ReverseCreasing	
CuttingCreasing	ReverseCuttingCreasing	
PartialCuttingCreasing	ReversePartialCuttingCreasing	
Drilling	Gluing	
FoilStamping	ColdFoilStamping	
Embossing	Debasing	
Bleed	Perforating	
VarnishFree	InkFree	InkVarnishFree
Folding	Punching	Stapling

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Processing step “Positions”

- Contain contours of intended, allowed or forbidden positions

- Types (GTS_ProcStepsType)

  Hologram
  Barcode
  ContentArea
  CodingMarking
  Imprinting

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```
40 0 obj
<<
    /Type /OCG
    /Name (Cut lines)
    /GTS_Metadata
    <<
        /GTS_ProcStepsGroup /Structural
        /GTS_ProcStepsType /Cutting
    >>
>>
endobj
```

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Content in Processing Steps Groups

- Differs
  - Braille processing step contains actual data
  - Position processing steps (e.g. Position: barcode) contains positions (contour), not actual content

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Processing steps metadata

- The same Processing Steps metadata may be used with more than one layer

- Custom values may be used for group and type if no standardised value can be used

- Is “private data” for most PDF processors

- Is not defined in PDF 2.0

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Processing steps metadata

- No objects may be clipped (forms a major issue for creators)
- Patterns, Type 3 fonts and Text in rendering mode 3 are not permitted
- ISO 19593-1 has evolved from a metadata standard to defining detailed rules for objects on and interdependencies between Processing Steps layers
- The Committee decided to protect current workflows instead of enforcing them to enhance

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Advantages

- Standardised
- Interoperability
- Helping applications doing the right things
- For automated processing
  - Preflighting (Legend must not overlap with content)
  - Modifying (automatically place barcode)
  - Generating 3d previews

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Possible workflow

- Create layers in Illustrator with processing steps
- Proof
- Export to PDF
- Generate 3d preview
- Place barcode in Position: Barcode
- Preflight
- Print, cut, glue, fold, …

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Products supporting processing steps

- axaio MadeForLayers
- callas pdfToolbox
- enfocus Pitstop
- esko ArtPro+
- ...

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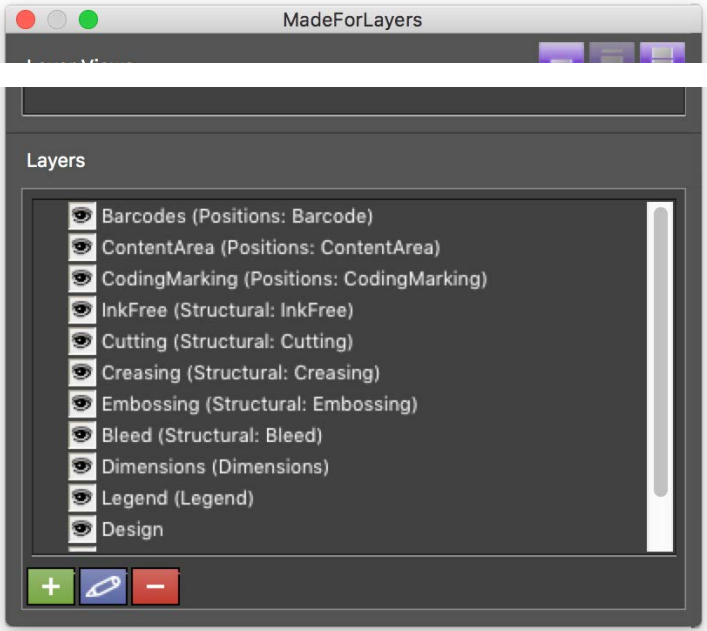
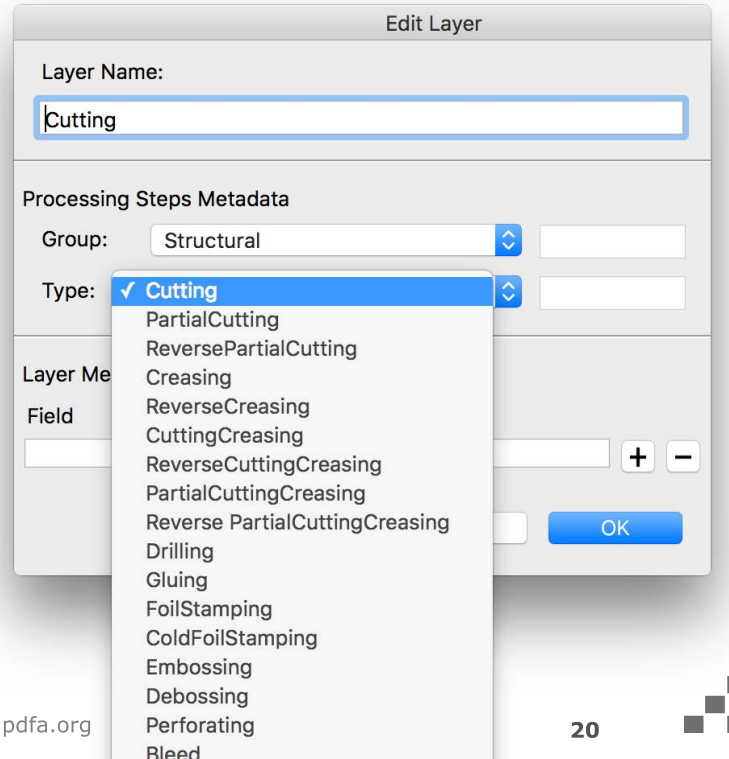
axaio MadeForLayers





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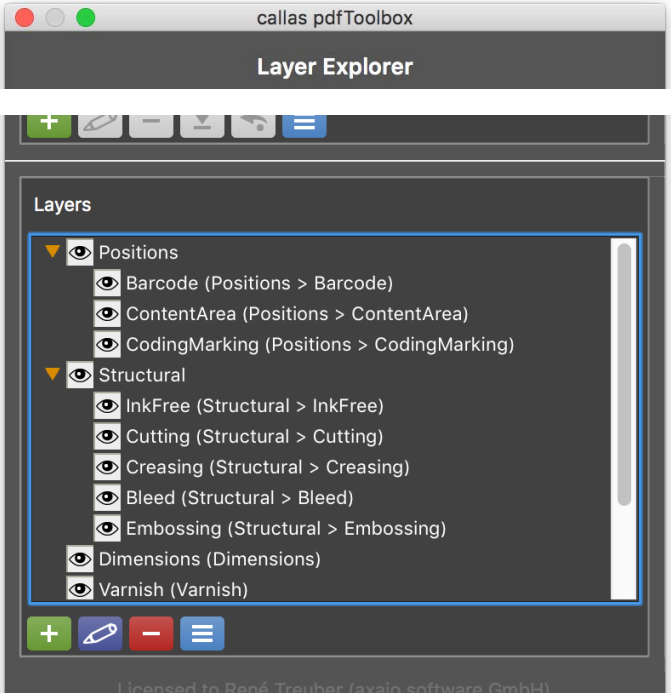
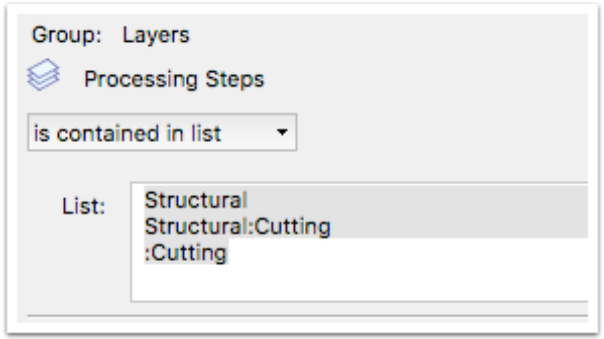
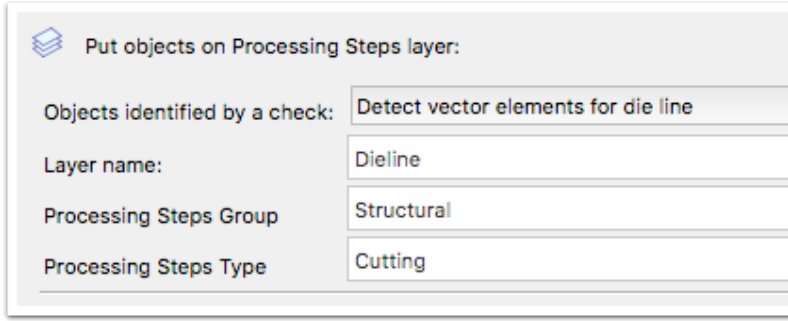
callas pdfToolbox







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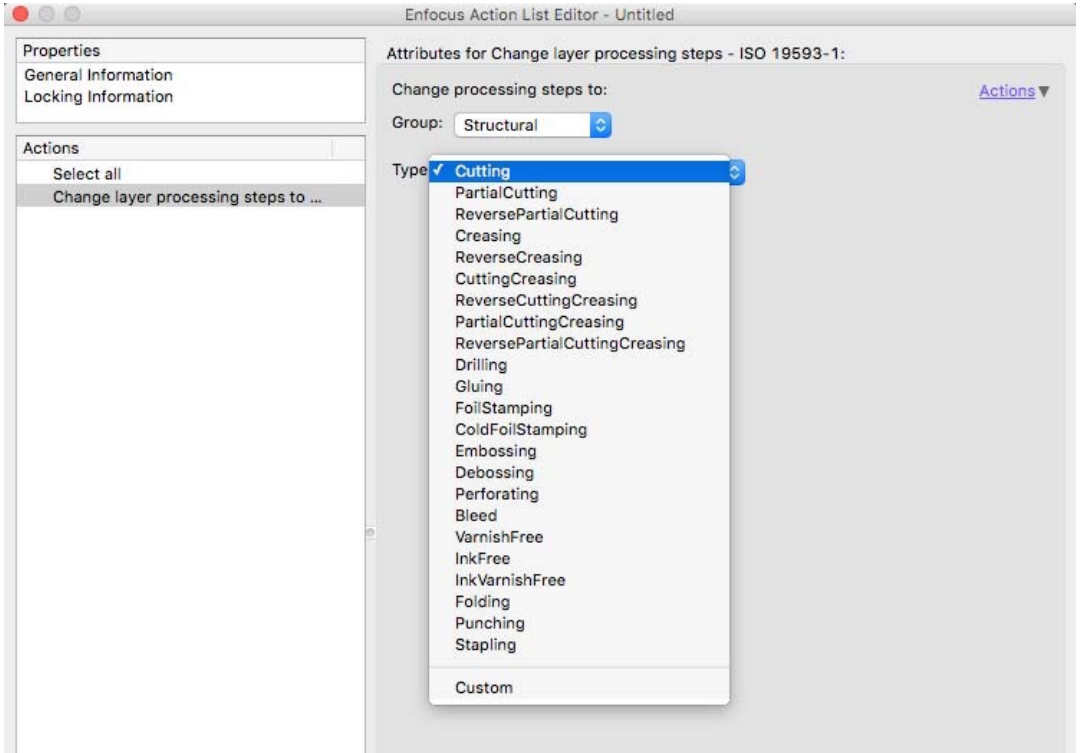
enfocus pitstop



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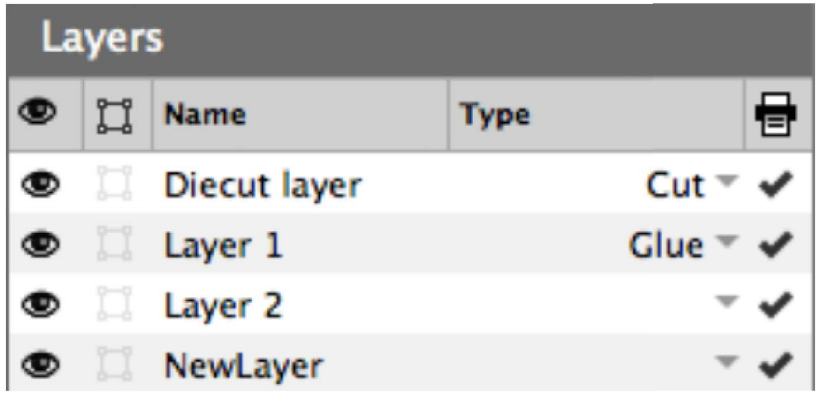
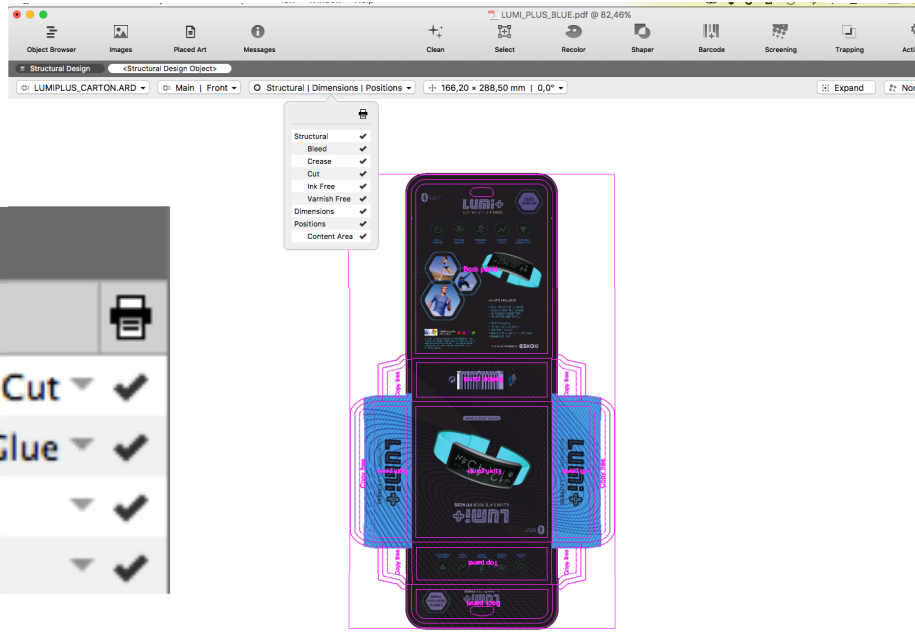
Esko ArtPro+

- Convert spot colours to processing steps
- Interactive
- Live proofing





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“Print product metadata for PDF files”

ISO 21812-1

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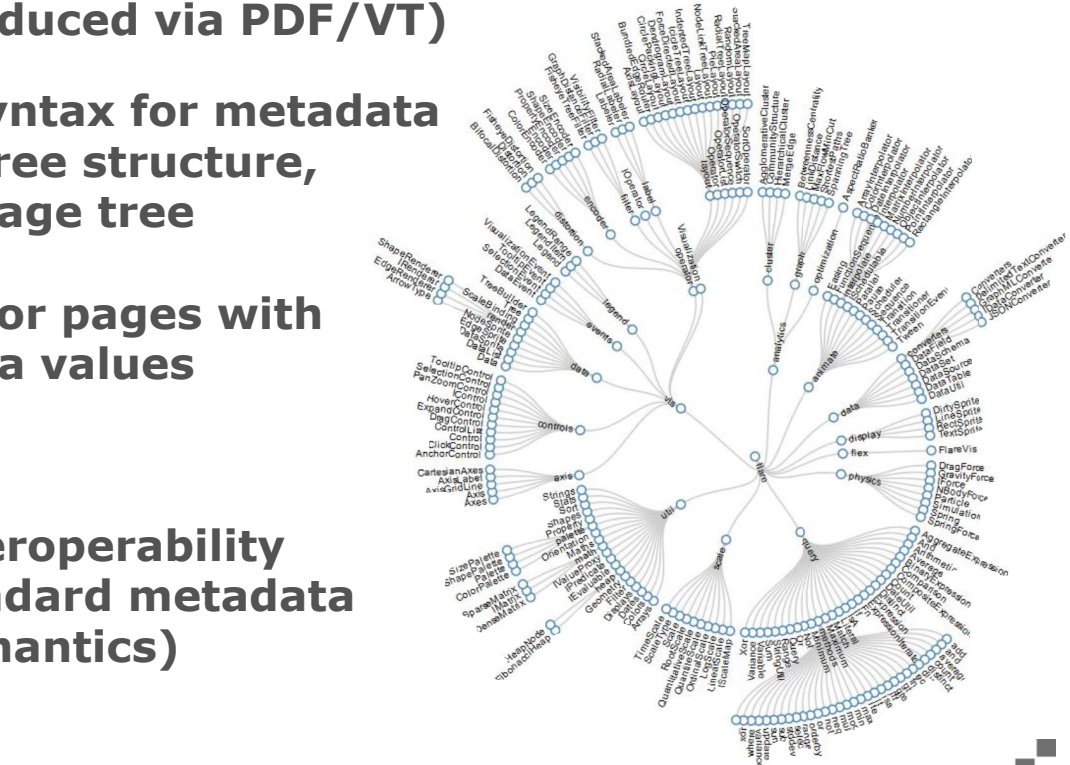
Background

- Based on PDF 2.0 Document Part (DPart) metadata (introduced via PDF/VT)

- DPart defines syntax for metadata organized in a tree structure, parallel to the page tree

  Easy to search for pages with certain metadata values



- No inherent interoperability because no standard metadata fields exist (semantics)

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Print product metadata

- Standardizes metadata fields to be used in DPart structures
- Based on XJDF, a common standard for jobtickets in the prepress and print world
- Examples:
  - CIP4_Recipient — Address information for recipient of pages, e.g. invoices
  - CIP4_ProductType — E.g. “Booklet”, “Brochure”
  - CIP4_MediaIntent — The media to be used for printing

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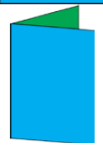
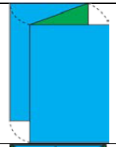
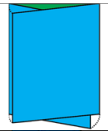
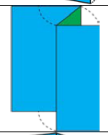
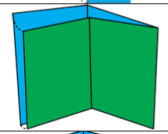
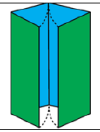
Example: CIP4_FoldCatalog

Name	Illustration	Description
F2-1		No fold
F4-1		Single fold
F6-1		Zigzag fold
F6-3		Altar fold

Whether or not the product will be folded and in which way

F6-4		Tri-fold.
F6-7		Z-Fold
F8-2		Parallel fold
F8-4		Gate fold.

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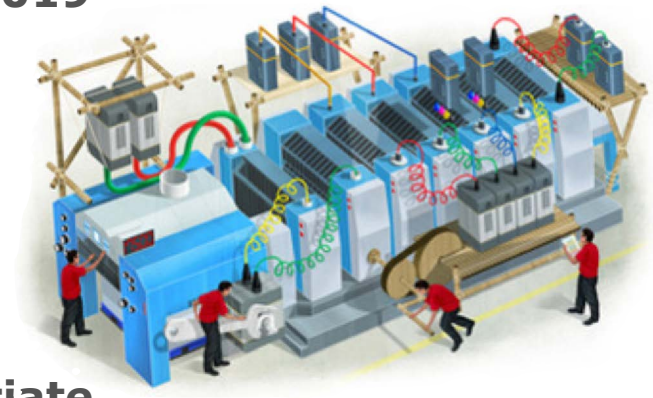
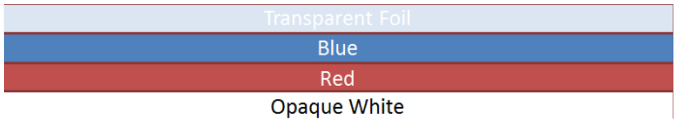
Print product metadata
Current work item at ISO as ISO 21812-1

- Now in it's second CD
- Plan is to go into DIS by end of 2018
- Might be published in mid/late 2019



Planned to become the basis for other standards

- Hybrid printing
  - Partly digital
    partly offset or flexo
  - Processing Steps not appropriate
    because color space can't be different for layers
- Sandwich printing



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Summary

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Summary

Processing Steps

- Processing Steps was a Ghent Workgroup specification that developed into an ISO standard (ISO 19593-1)
- It standardizes metadata for layers on pages to allow for interoperability between devices
- ISO standard also define additional rules for objects on and interdependencies between layers

Print product metadata

- Current work item ISO 21812-1
- It standardizes metadata for pages to allow for interoperability between devices

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Thank you! Any questions?

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