The Printer Working Group

IPP Workgroup Session, Day 1

February 10, 2015

PWG F2F Meeting

Sunnyvale, CA (Apple)

Agenda

February 10, 2016

When	What
1:00 - 1:15	IPP Workgroup Status
1:15 - 1:45	IETF IPP/1.1 Updates
1:45 - 4:00	IPP System Service

February 11, 2016

When	What
9:00 - 12:00	IPP 3D Printing Extensions
12:00 - 1:00	Lunch
1:00 - 1:30	IPP Job Password Repertoire
1:30 - 2:00	IPP Finishings 2.0 Errata
2:00 - 2:30	Next Steps

Charter

- The Internet Printing Protocol (IPP) workgroup is chartered with the maintenance of IPP, the IETF IPP registry, and to support new clients, network architectures, and service bindings for MFDs and Imaging Systems
- In addition, we maintain the IETF Finisher MIB, Job MIB, and Printer MIB registries, and handle synchronization with changes in IPP

Officers

- IPP WG Co-Chairs:
  - Paul Tykodi (TCS)
  - Ira McDonald (High North)
- IPP WG Secretary:
  - Michael Sweet (Apple)
- IPP WG Document Editors:
  - Ira McDonald (High North) – IPP System Service (SYSTEM), IETF IPP/1.1
  - Michael Sweet (Apple) – IPP System Service (SYSTEM), IETF IPP/1.1, IPP 3D Printing Extensions

Status (1/2)

- IETF RFCs in development:
  - IETF IPP/1.1: Encoding and Transport (obsoletes RFC 2910/3382)
    - Stable Draft, AD Sponsor
  - IETF IPP/1.1: Model and Semantics (obsoletes RFC 2911/3381/3382)
    - Stable Draft, AD Sponsor
- PWG Specifications in development:
  - IPP Everywhere Printer Self-Certification Manual 1.0 (SELFCERT)
    - Stable, PWG Formal Vote
  - IPP System Service (SYSTEM) - Interim Draft
  - IPP 3D Printing Extensions (3D) - Interim Draft

Status (2/2)

- Recent Full Standard:
  - PWG 5100.12-2015: IPP 2.0, 2.1, and 2.2
- Recent Candidate Standards:
  - PWG 5100.19-2015: IPP Implementor's Guide v2.0 (IG)
  - PWG 5100.18-2015: IPP Shared Infrastructure Extensions (INFRA)
- Recent IETF RFCs:
  - RFC 7612: LDAP Schema for Printer Services
  - RFC 7472: IPP over HTTPS Transport Binding and “ipps” URI Scheme
- Up-to-date pending IANA registrations online:
  - http://www.pwg.org/ipp/ipp-registrations.xml
  - Continue to maintain this in parallel for new specifications
  - Github repository:
    - https://github.com/istopwg/ippregistry

IPP Everywhere Printer Self-Certification (SELFCERT)

- Current stable draft, tools, and web site content:
  - http://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeveselfcert10-20151110.pdf
  - http://www.pwg.org/ipp/everywhere.html (for tools)
  - http://beta.pwg.org/ippeveselfcert (submission form)
  - http://beta.pwg.org/printers (printer list)
- Github repository for tools:
  - https://github.com/istopwg/ippeveselfcert
- PWG Formal Vote until February 19, 2016

IETF IPP/1.1 Updates

- Developing two new RFCs to replace (obsolete) RFCs 2910, 2911, 3381 (deprecated job progress attributes), and 3382 (collection attribute syntax)
- Stable drafts:
  - http://tools.ietf.org/html/draft-sweet-rfc2910bis
  - http://tools.ietf.org/html/draft-sweet-rfc2911bis
    - *Drafts are being AD-sponsored by Barry Leiba, IETF ART Director, for publication as IETF Proposed Standard*
    - *RFCs will eventually be advanced to IETF Internet Standard through status change (IETF process)*
- Proposed schedule:
  - IETF Last Call - Q1/Q2 2016
  - IESG Approval - Q2/Q3 2016

IPP System Service (SYSTEM)

- Current interim draft at:
  - http://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippsystem10-20160117-rev.pdf
- Proposed Schedule:
  - Prototype draft in Q1/Q2 2016

The Printer Working Group

IPP Workgroup Session, Day 2

February 10, 2015

PWG F2F Meeting

Sunnyvale, CA (Apple)

Agenda

February 10, 2016

When	What
1:00 - 1:15	IPP Workgroup Status
1:15 - 1:45	IETF IPP/1.1 Updates
1:45 - 4:00	IPP System Service

February 11, 2016

When	What
9:00 - 12:00	IPP 3D Printing Extensions
12:00 - 1:00	Lunch
1:00 - 1:30	IPP Job Password Repertoire
1:30 - 2:00	IPP Finishings 2.0 Errata
2:00 - 2:30	Next Steps

IPP 3D Printing Extensions

- Current draft (interim):
  - http://ftp.pwg.org/pub/pwg/ipp/wd/wd-ipp3d10-2016mmdd-rev.pdf
- Proposed schedule:
  - Prototype draft Q3 2016
- Items for discussion:
  - PDF 2.0 and PDF/E add 3D content to PDF files
    - How do we choose/identify content for printing (multiple U3D objects in file, potentially multiple objects per page or one object shared across multiple pages with different views)
    - How do we map materials between Job Ticket and PDF file?
      - PDF U3D content has named materials, same as AMF and 3MF...
  - Do we want to require or recommend any document formats for 3D printing over IPP? Or simply talk about how to support different formats with implementation guidance?
  - IEEE work on 3D Printing (next slide)
  - Collaborating with other standards bodies and industry groups

IEEE Projects Concerning 3D Printing

- IEEE P3030 - Standard for Consumer 3D Printing: Overview and Architecture
  - http://standards.ieee.org/develop/project/3030.html
  - *"This standard defines an architectural framework for consumer 3D printing, including descriptions of various domains (systems, services, devices, participants, etc.), definitions of domain abstractions, and identification of commonalities between different domains. The architectural framework for consumer 3D printing provides a reference model that defines relationships among various domains and common architecture elements. It also provides a blueprint for data abstraction, quality, protection and safety."*

IEEE Projects Concerning 3D Printing (con't)

- IEEE P3333.2.5 - Bio-CAD File Format for Medical Three-Dimensional (3D) Printing
  - https://standards.ieee.org/develop/project/3333.2.5.html
  - *"To establish the standardization of accurate and optimized Bio-CAD file format system for medical 3D Printing.This standard defines the Bio-CAD format for three-dimensional (3D) Printing based on Sectional Scan image data containing surface and volumetric information. Standardization is related to medical 3D printing services, including anatomic, pathologic models and medical instrument printing based on two-dimensional images, three-dimensional medical data and other medical data."*

IPP Job Password Repertoire

- Current draft (white paper):
  - http://ftp.pwg.org/pub/pwg/ipp/wd/wp-job-password-repertoire-20160101.pdf
- Next steps:
  - Approve attribute and value registrations Q1 2016

IPP Finishings 2.0 Errata

- PWG 5100.1-2015: IPP Finishings 2.0
  - http://ftp.pwg.org/pub/pwg/candidates/cs-ippfinishings20-20141219-5100.1.pdf
- HP has reported several issues in the published standard:
  - No way to differentiate between "finishing-template" values that vary based on media orientation ("orientation-requested")
  - The origin of punch holes and staples (stitches) is not defined
  - The orientation of staples (stitches) is not defined
- JDF (naturally) has Job Ticket elements for most of these things
  - Orientation: no notion of mapping "finishing-template" names to sets of finishing processes, just uses the "raw" values
  - Punching (HoleMaking): Center, CenterReference, Extent, HoleType, Shape
  - Stitching: StapleShape, StitchWidth, WireBrand, WireGauge

IPP Finishings 2.0 Errata

- Don't want to make IPP finishings as complicated as JDF
  - Hole and staple making capabilities are typically limited to the installed finisher and/or supplies
  - Focus on providing information to the Client for preview
- For punching:
  - Specify the origin of the holes as the center of each hole (matches JDF @HoleMakingParams/Center definition)
  - Specify that holes are round (JDF @HoleMakingParams/Shape=Round)
  - Define an attribute that specifies the diameter of the installed hole punch (JDF @HoleMakingParams/Extent for /Shape=Round holes)

IPP Finishings 2.0 Errata (con't)

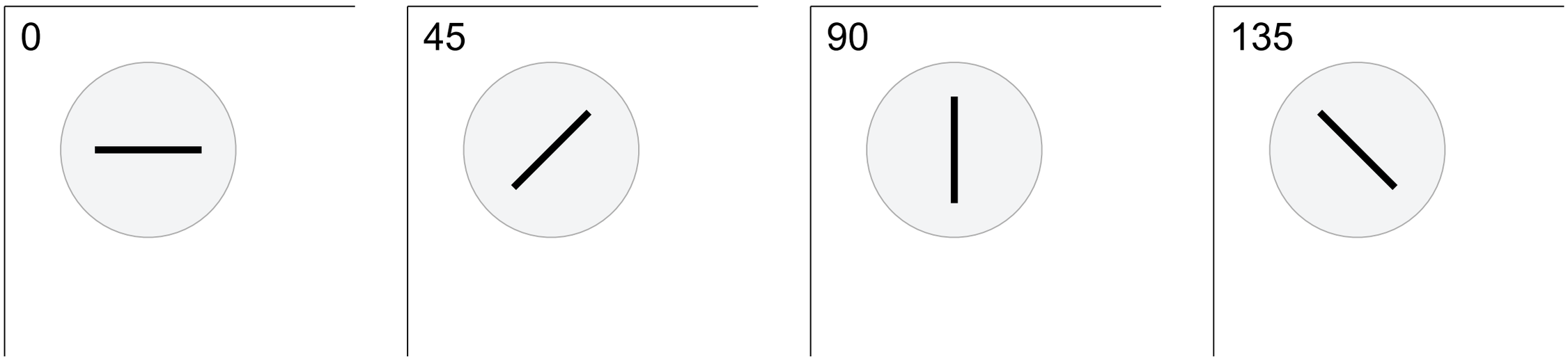
- For stitching:
  - Specify the origin of the staples as the center of each staple (matches JDF @StitchingParams/StitchPositions definition)
  - Specify that the staple shape is implementation-defined with the staple width representing the exposed portion of the staple on the front side of the Impression (matches JDF definition)
  - Define an attribute that specifies the width of the installed/configured staples (matches JDF @StitchingParams/StitchWidth)
  - Define an attribute that specifies the angle of the staples when applied (matches JDF @StitchingParams/Angle)

IPP Finishings 2.0: Proposed Changes

- Clarify origins of punch and stitch (staple):
  - Origin is at the center of the punch or stitch (staple)
- "finishings-col-database/ready (1setOf collection)":
  - Add "orientation-requested (type2 enum)" for different "finishings-template" values based on orientation
  - Example: 'punch' template defaults to 3-hole punch in portrait and 2-hole punch in landscape
- New "punch-diameter-configured (integer(0:MAX))" Printer Description attribute:
  - Specifies punch diameter in PWG units (hundredths of millimeters)

IPP Finishings 2.0: Proposed Changes (con't)

- New "stitch-angle-configured (integer(0:179))" Printer Description attribute:
  - Specifies stitch (staple) orientation in degrees counter-clockwise from right edge:



- New "stitch-size-configured (integer(0:MAX))" Printer Description attribute:
  - Specifies stitch (staple) size in PWG units (hundredths of millimeters)

IPP Finishings 2.0: Next Steps

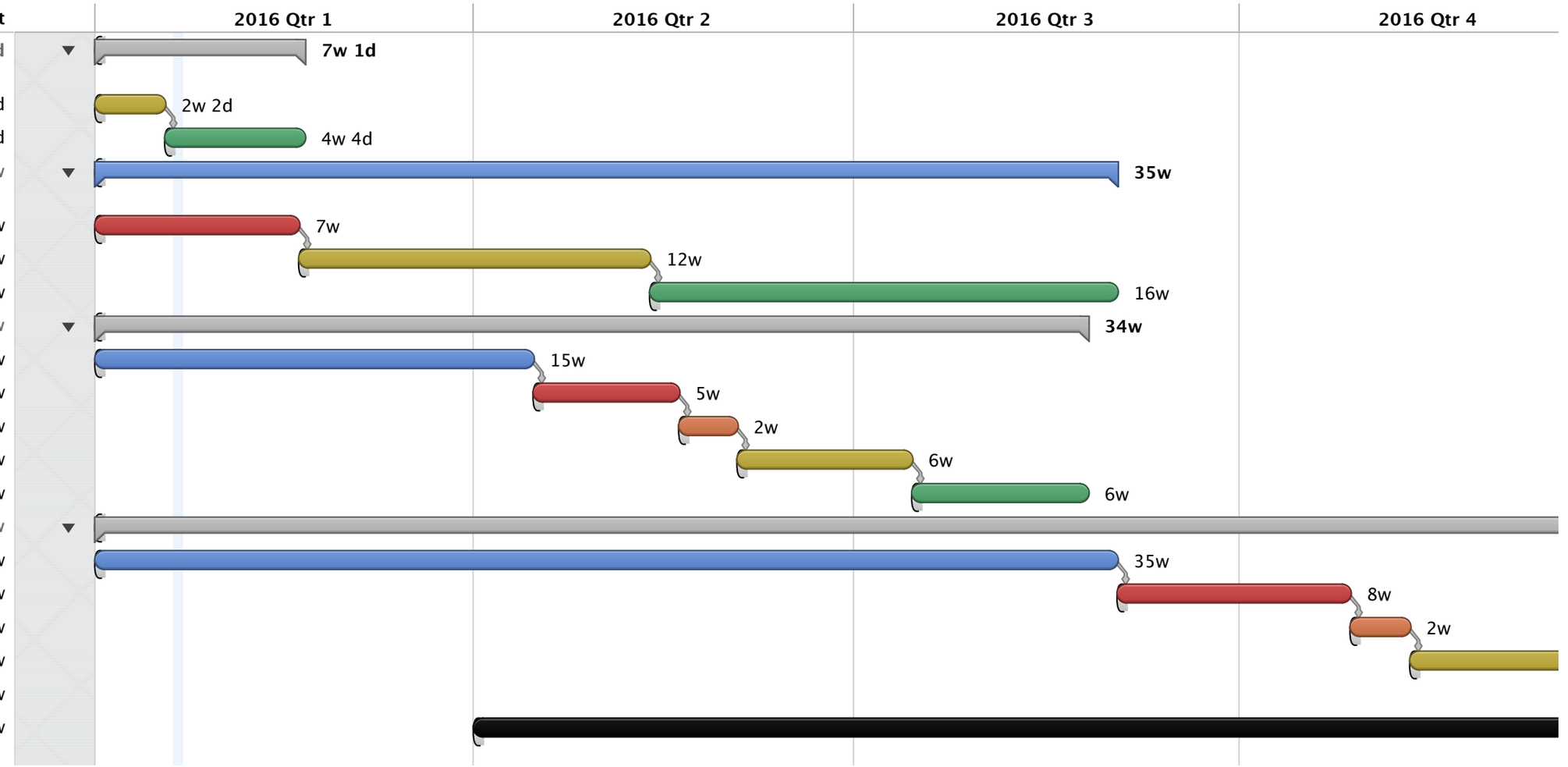
- Do we publish this as an errata to IPP Finishings 2.0?
  - Develop "IPP Finishings 2.1" draft
  - PWG Last Call and PWG Call for Objections process

The Printer Working Group

Next Steps

Next Steps

Title	Effort
1) IPP Everywhere Printer Self-Certification Manual	7w 1d
• 1.1) PWG Last Call	2w 2d
• 1.2) PWG Formal Approval	4w 4d
2) IETF IPP/1.1 Proposed Standard	35w
• 2.1) Preparation of Drafts	7w
• 2.2) IETF Last Call	12w
• 2.3) RFC Editor	16w
3) IPP System Service (SYSTEM)	34w
• 3.1) Interim Working Drafts	15w
• 3.2) Prototype Working Drafts	5w
• 3.3) Workgroup Last Call	2w
• 3.4) PWG Last Call	6w
• 3.5) PWG Formal Approval	6w
4) IPP 3D Printing Extensions	57w
• 4.1) Interim Working Drafts	35w
• 4.2) Prototype Working Drafts	8w
• 4.3) Workgroup Last Call	2w
• 4.4) PWG Last Call	6w
• 4.5) PWG Formal Approval	6w
• 5) Errata Updates (FAXOUT, MFDALERT, STATE)	52w



Next Steps

- IPP Everywhere Printer Self-Certification Manual 1.0
  - PWG Formal Vote concludes on February 19, 2016
- Advance IPP/1.1 to IETF Proposed Standard
  - IETF Last Call in Q1 2016
  - IETF process to advance to Internet Standard once published...
- IPP System Service
  - Prototype working draft in Q2 2016
- IPP 3D Printing Extensions
  - Prototype working draft in Q3 2016
- IPP Finishings 2.0 Errata?
- IPP Transform Service v1.0?

More Information

- We welcome participation from all interested parties
- IPP Working Group web page
  - http://www.pwg.org/ipp/index.html
- Subscribe to the IPP mailing list
  - https://www.pwg.org/mailman/listinfo/ipp
- IPP WG holds weekly phone conferences announced on the IPP mailing list
  - Next conference calls February 22, 2016 at 4pm ET to discuss 3D Printing and February 29, 2016 at 3pm ET for IPP System Service