



# The Printer Working Group

IPP Workgroup Session

November 2, 2021



# Before We Begin...

- **PWG Antitrust Policy:**
  - [https://www.pwg.org/chair/membership\\_docs/pwg-antitrust-policy.pdf](https://www.pwg.org/chair/membership_docs/pwg-antitrust-policy.pdf)
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  - TL;DR: Anything you say in a PWG meeting or email to a PWG address can be used in a PWG standard
  - (but please do read the IP policy above if you haven't done so)

# Agenda (1/2)



## November 2, 2021 (US Eastern Daylight Time)

When	What
10:00 - 10:45	PWG Plenary
10:45 - 11:00	IPP WG: Status
11:00 - 12:00	IPP WG: Prototype-Ready Specifications
12:00 - 12:45	Lunch
12:45 - 14:00	IPP WG: IPP/2.0 and IPP Everywhere v2.0

# Agenda (2/2)



## November 3, 2021 (US Eastern Daylight Time)

When	What
10:30 - 12:00	IPP WG: IPP Driverless Printing Extensions v2.0
12:00 - 12:45	Lunch
12:45 - 13:45	IPP WG: 3D Printing Liaisons/Discussions
13:45 - 14:00	IPP WG: Next Steps



- Current charter:
  - <https://ftp.pwg.org/pub/pwg/ipp/charter/ch-ipp-charter-20210409.pdf>
- The Internet Printing Protocol (IPP) workgroup is chartered with the maintenance of IPP and the IETF IPP registry, and support for new clients, network architectures (Cloud, SDN), MFD/Imaging service bindings, and emerging technologies such as 3D Printing
- In addition, we maintain the IETF Finisher MIB, Job MIB, and Printer MIB registries, the PWG MIBs, the PWG Semantic Model schema, and handle synchronization with changes in IPP



- **IPP WG Co-Chairs:**
  - Paul Tykodi (TCS)
  - Ira McDonald (High North)
- **IPP WG Secretary:**
  - Michael Sweet (Lakeside Robotics)
- **IPP WG Document Editors:**
  - Michael Sweet (Lakeside Robotics) – Internet Printing Protocol/2.x Fourth Edition, IPP Encrypted Jobs and Documents v1.0, IPP Production Printing Extensions v2.0
  - Smith Kennedy (HP Inc.) – IPP Driverless Printing Extensions v2.0, IPP Encrypted Jobs and Documents v1.0, IPP Enterprise Printing Extensions v2.0, IPP Finishings v3.0

# Status (1/3)



- PWG Specifications in development:
  - Internet Printing Protocol/2.x Fourth Edition - Interim
  - IPP Driverless Printing Extensions v2.0 - Interim
  - IPP Encrypted Jobs and Documents v1.0 - Prototype
  - IPP Enterprise Printing Extensions v2.0 - Prototype
  - IPP Finishings v3.0 - Prototype
  - IPP Production Printing Extensions v2.0 - Prototype
- Recently published:
  - PWG 5199.11-2021: Job Accounting with IPP v1.0
  - IPP Label Printing Extensions v1.0 (registration)
  - IPP System Service Discovery v1.0 (registration)
  - PWG 5100.14-2020: IPP Everywhere v1.1
  - PWG 5100.16-2020: IPP Transaction-Based Printing Extensions v1.1
  - PWG 5100.20-2020: IPP Everywhere Printer Self-Certification Manual v1.1

# Status (2/3)



- Up-to-date pending IANA registrations online:
  - <https://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-Certifications:
  - <https://www.pwg.org/printers>
  - ~~725~~ **752** printers currently listed from HP and Lexmark
  - 1.1 self-certification tools update 3 approved June 2021
    - *Update 4 in progress*
- IPP Sample Code:
  - Github repository:
    - <https://github.com/istopwg/ippsample>
  - Fork of CUPS code includes ipp3dprinter, ippeveprinter, ippfind, ippproxy, ippserver, ipptool, ipptransform, and ipptransform3d





- Pending Errata:

- PWG 5100.5-2019 (Document Object v1.1): 4 issues
- PWG 5100.6-2003 (Page Overrides v1.0): 2 issues
- PWG 5100.7-2019 (Job Extensions v2.0): 5 issues
- PWG 5100.8-2003 ("-actuals" v1.0): 1 issue
- PWG 5100.9-2009 (Printer State Extensions v1.0): 2 issues
- PWG 5100.15-2014 (FaxOut v1.0): 2 issues
- PWG 5100.18-2015 (Infrastructure Extensions v1.0): 6 issues
- PWG 5100.19-2015 (Implementor's Guide v2.0): 6 issues
- PWG 5100.22-2019 (System Service v1.0): 2 issues
- PWG 5107.3-2019 (MFD Alerts v1.1): 1 issue

- In-Progress Errata:

- PWG 5100.1-2017 (Finishings v2.1): 3 issues
- PWG 5100.3-2001 (Production Printing): 2 issues
- PWG 5100.11-2010 (JPS2 - Enterprise Printing): 7 issues
- PWG 5100.12-2015 (IPP 2.0, 2.1, and 2.2): 2 issues
- PWG 5100.13-2012 (JPS3 - Driverless Printing): 15 issues



# Prototype-Ready Specifications

- IPP Encrypted Jobs and Documents v1.0 (TRUSTNOONE)
  - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ipptrustnoone10-20210428.pdf>
- IPP Enterprise Printing Extensions v2.0 (EPX)
  - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippepx20-20210817-rev.pdf>
- IPP Finishings v2.0 (FIN)
  - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippfinishings30-20210808-rev.pdf>
- IPP Production Printing Extensions v2.0 (PPX)
  - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippppx20-20210817-rev.pdf>



# The Printer Working Group

Lunch Break

*Resuming at 12:45pm ET*



# IPP/2.x Fourth Edition

- Current interim draft:
  - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippbase23-20210424-rev.pdf>
- Errata update of PWG 5100.12-2015:
  - Updated document references, including an informative reference to IPP Everywhere
  - Simplified reference tables and conformance requirements
  - New history of the development of the Internet Printing Protocol content to explain how we ended up with different protocol versions with the same encoding
- Proposed schedule:
  - Prototype draft after EPX 2.0, FIN 3.0, and PPX 2.0



# IPP Everywhere v2.0

- Initial draft:
  - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeve20-202110DD.pdf>
- New/updated requirements:
  - TLS support
  - IPP Privacy Attributes v1.0
  - PWG 5100.1-20XX: IPP Finishings v3.0 (FIN)
  - PWG 5100.7-2019: IPP Job Extensions v2.0 (JOBEXT)
  - PWG 5100.13-20XX: IPP Driverless Printing Extensions v2.0 (NODRIVER)
  - PWG 5199.10-2019: IPP Authentication Methods v1.0
  - PWG 5199.11-2020: Job Accounting with IPP v1.0
- Conditional requirements:
  - PWG 5100.3-20XX: IPP Production Printing Extensions v2.0 (PPX)
  - PWG 5100.11-20XX: IPP Enterprise Printing Extensions v2.0 (EPX)
  - PWG 5100.22-2019: IPP System Service v1.0 (SYSTEM)

# IPP Everywhere Printer Self-Certification Manual v2.0



- No draft yet
- Will add new tests:
  - Pages with different orientations
  - Duplex printing
  - Finishings - staple, punch, and fold
  - Copies + duplex/finishings
  - Enterprise extensions
  - System Service tests (for print servers)



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# IPP Driverless Printing Ext v2.0

- Current interim draft:
  - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippnodriver20-20201029-rev.pdf>
- Updates PWG 5100.13-2012: IPP Job and Printer Extensions - Set 3 (JPS3)
- Proposed schedule:
  - Prototype draft in Q3/Q4 2021



# The Printer Working Group

Lunch Break

*Resuming at 12:45pm ET*



# 3D Printing Organizations/Liaisons

- 3MF Consortium: <https://www.3mf.io>
- AMSC: <https://www.americamakes.us/>
  - AMNOW: <https://www.americamakes.us/ncdmm-and-catalyst-connection-announce-next-phase-of-amnow-program-to-support-additive-manufacturing-technology-insertion-into-the-u-s-army-supply-chain/>
- ASTM Committee F42: <https://www.astm.org/COMMITTEE/F42.htm>
- INCITS: <https://www.incits.org>
  - Potential 3D Printing Protection Profile (with IDS workgroup)
  - Looking at AMSC-identified gaps, particularly 3D scanning
- ISO/IEC JTC 1 WG 12: <https://www.iso.org/committee/45020.html>
  - ISO TR 22100-4: Best Practice document already published
- PDF Association + ISO/IEC TC171: <https://www.iso.org/committee/53674.html>
- SAE ITC Additive Manufacturing Data Consortium: <https://www.sae-itc.com/amdc>
- SME iRAMP: <https://www.sme.org/iramp/>



# 3D Printing and Scanning Discussions

- Current documents:
  - PWG 5100.21-2019: IPP 3D Printing Extensions v1.1
  - PWG 5199.5-2017: PWG 3D Print Job Ticket and Associated Capabilities v1.0 (PJT3D)
- Proposed future work (2021-2022):
  - IPP 3D Scan Service v1.0 specification to address 3D scanning
  - IPP 3D Production Printing Extensions v1.0 specification to address AMSC AMNOW efforts
  - Updated PWG 3D Print Job Ticket and Associated Capabilities v2.0 (PJT3D) best practice to incorporate production extensions and IPP 3D v1.1



# The Printer Working Group

## Next Steps



# Next Steps

- IPP/2.x Fourth Edition (Mike)
  - Prototype draft in Q1 2022
- IPP Everywhere v2.0 (Mike)
  - Prototype draft in Q3 2022
- IPP Driverless Printing Extensions v2.0 (Smith)
  - Prototype draft in Q4 2021
- IPP Encrypted Jobs and Documents v1.0 (Mike/Smith)
  - Stable draft in Q1 2022
- IPP Enterprise Printing Extensions v2.0 (Smith)
  - Stable draft in Q4 2021
- IPP Finishings v3.0 (Smith)
  - Stable draft in Q4 2021
- IPP Production Printing Extensions v2.0 (Mike)
  - Stable draft in Q4 2021



# More Information

- We welcome participation from all interested parties
- IPP Working Group web page
  - <https://www.pwg.org/ipp/index.html>
- Subscribe to the IPP mailing list
  - <https://www.pwg.org/mailman/listinfo/ipp>
- IPP WG holds bi-weekly phone conferences announced on the IPP mailing list
  - Next conference calls scheduled for Thursday, November 18, December 2, and December 16, 2021 at 3pm ET