The Printer Working Group

PWG February 2023 Face-to-Face Plenary Session

Jeremy Leber, PWG Chair

February 7, 2023

- **Please Note: This PWG Meeting is Being Recorded**

- Administrivia

- PWG Steering Committee Updates

- PWG Workgroup Status [WG Chairs]

- Liaison Status

- Questions / Next Meeting / Any Other Business

Administrivia

- Welcome and Introductions
- Meeting Recording Notice
- Confirm Minutes Taker
- Review PWG Antitrust Policy, PWG IP Policy and Inappropriate Topics
- Agenda

PWG Antitrust Policy

- "This meeting is being held in accordance with the PWG Antitrust Policy"
  - https://www.pwg.org/chair/membership_docs/pwg-antitrust-policy.pdf

- The IEEE-ISTO Printer Working Group ("PWG") will not become involved in the business decisions of its Members. The PWG strictly complies with applicable antitrust laws. Every PWG Member shall comply with this policy. The PWG Officers and PWG Workgroup Officers are responsible to ensure that this policy is adhered to in all PWG activities.

PWG IP Policy

- "This meeting is being held in accordance with the PWG Intellectual Property Policy"
  - https://www.pwg.org/chair/membership_docs/pwg-ip-policy.pdf

- 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)

PWG Patent Statement

PWG standards may include the known use of essential patents and patent applications provided the PWG Chair receives assurance from the patent holder or applicant with respect to patents whose infringement is, or in the case of patent applications, potential future infringement the applicant asserts will be, unavoidable in a compliant implementation of either mandatory or optional portions of the standard. This assurance shall be provided without coercion.

PWG Patent Statement

This assurance shall be either:

- A general disclaimer to the effect that the patentee will not enforce any of its present or future patent(s) whose use would be required to implement either mandatory or optional portions of the proposed PWG standard against any person or entity complying with the standard; or

- A statement that a license for such implementation will be made available without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination.

PWG Patent Statement

The PWG is not in a position to give authoritative or comprehensive information about evidence, validity or scope of patents or similar rights, but it is desirable that any available information should be disclosed. Therefore, all PWG members shall, from the outset, draw PWG's attention to any relevant patents either their own or of other organizations including their Affiliates that are known to the PWG members or any of their Affiliates, although PWG is unable to verify the validity of any such information.

Inappropriate Topics for
PWG Working Group Meetings

Do Not Discuss:

- Validity or essentiality of patents or patent claims

- Cost of specific patent use

- Licensing terms or conditions

- Product pricing, territorial restrictions, or market share

- Ongoing litigation or threatened litigation

<u>DO raise an objection</u> if inappropriate topics are discussed

Agenda Overview – Day 1

(All times Eastern Standard Time)

Tuesday, February 7

10:00 – 10:45	PWG Plenary
10:45 – 11:00	IPP WG : Status
11:00 – 12:00	IPP WG : Last Call / Formal Votes:
	IPP Driver Replacement Extensions v2.0
	IPP Production Printing Extensions v2.0
	IPP Job Extensions v2.1
12:00 – 12:45	Break / Lunch
12:45 – 2:00	IPP WG : Evolution of IPP/2.0 and IPP Everywhere 2.0

Agenda Overview – Day 2

(All times Eastern Standard Time)

Wednesday, February 8

10:00 – 11:00   IPP WG : Prototype Ready:

IPP Encrypted Jobs and Documents v1.0

IPP Enterprise Printing Extensions v2.0

11:00 – 12:00   IPP WG : Evolution of OAuth and IPP - Session 1

12:00 – 12:45   Break / Lunch

12:45 –   2:30   IPP WG : Evolution of OAuth and IPP - Session 2

(All times Eastern Standard Time)

Thursday, February 9

10:00 – 12:00	IDS WG : Status and Discussion – PWG Hardcopy Device Security Guidelines v1.0
12:00 – 12:45	Break / Lunch
12:45 – 1:45	IPP WG : 3D Printing Liaisons – Status & Guidance
1:45 – 2:00	IPP WG : Next Steps

The Printer Working Group

Steering Committee Updates

Officers (2021-2023 Term)

- PWG Chair: Jeremy Leber, Lexmark

- PWG Vice Chair: Smith Kennedy, HP Inc.

- PWG Secretary: Ira McDonald, High North

2022-2023 Membership

30 Members

Alan Sukert	directprint.io	**intel** Intel	**Microsoft** Microsoft	**SNBC** SNBC
Apple Inc.	**EPSON** Epson	**KONICA MINOLTA** Konica Minolta	**OKI PRINTING SOLUTIONS** Oki Electric Industry Co., Ltd	**synaptics** Synaptics
brother at your side Brother Industries, Ltd.	**FUJIFILM** FUJIFILM Business Innovation Corp.	**KYOCERA** Kyocera	**PaperCut** PaperCut Software	Technical Interface Consulting
Canon Canon	**Google** Google	**Lakeside Robotics** Lakeside Robotics	PrinterLogic	**TOSHIBA Leading Innovation** Toshiba Business Solutions
Danny Brennan	**High North Inc** High North, Inc.	**Lexmark** Lexmark	**Qualcomm** Qualcomm	**TCS** Tykodi Consulting Services LLC. Tykodi Consulting Services LLC
DIGITAL CHECK Digital Check Corp	**hp** HP Inc.	**meteor network** Meteor Network	**RICOH** Ricoh	**xerox** Xerox

Thanks to all of you for contributing your time and efforts to the PWG!

Future Meeting Schedule

2023

- May 16-18 (Joint w/ OpenPrinting - TBD – Lexington?)

- August 8-10 – Virtual? TBD

- November 14-16 – Virtual? TBD

2024

- February 6-8 – Virtual - TBD

Contact chair@pwg.org if you are interested in hosting a PWG F2F event

IPP Everywhere™ Certified Printers

- https://www.pwg.org/ipp/everywhere.html

- **944** printers now certified!
  - https://www.pwg.org/printers/
  - New printers from Digital Check, OKI, HP, Lexmark, Ricoh, and Samsung
  - More on the way!

- IPP Everywhere™ Self Certification 1.1 Update 4
  - → Announced Sept. 2, 2022
  - → **IPP Everywhere v1.0 Certifications no longer accepted**

Process 4.0 and Policy Updates

- Process v4.0
  - Multi-year effort to update Process 3.0
  - Latest Stable draft: wd-pwg-process-4-20230109.pdf
    - Ready for broader review and approval procedures
  - Detailed definitions moved to separate PWG Policy documents to simplify update approval process
    - PWG Roles and Responsibilities Policy
    - PWG Document Management Policy
    - PWG Meetings Policy
    - PWG Workgroup Decisions Policy

- PWG Policy Document Status
  - PWG Roles and Responsibilities Policy : Approved (20230109)
  - PWG Workgroup Decisions Policy : Approved (20230109)
  - PWG Meetings Policy : SC Call For Objections (20230109)
  - PWG Document Management Policy : Nearing Stable Draft (20230123)

- PWG About Page Lists All Approved PWG Policy Documents
  - https://www.pwg.org/about.html

Projects on GitHub

- PWG on GitHub:
  - https://github.com/istopwg

- IPP Sample Code
  - https://github.com/istopwg/ippsample

- IPP Everywhere Self Certification Tools
  - https://github.com/istopwg/ippeveselfcert

- IPP Registry
  - https://github.com/istopwg/ippregistry

- PWG Books:
  - https://github.com/istopwg/pwg-books

The Printer Working Group

Workgroup Status

Work in Progress
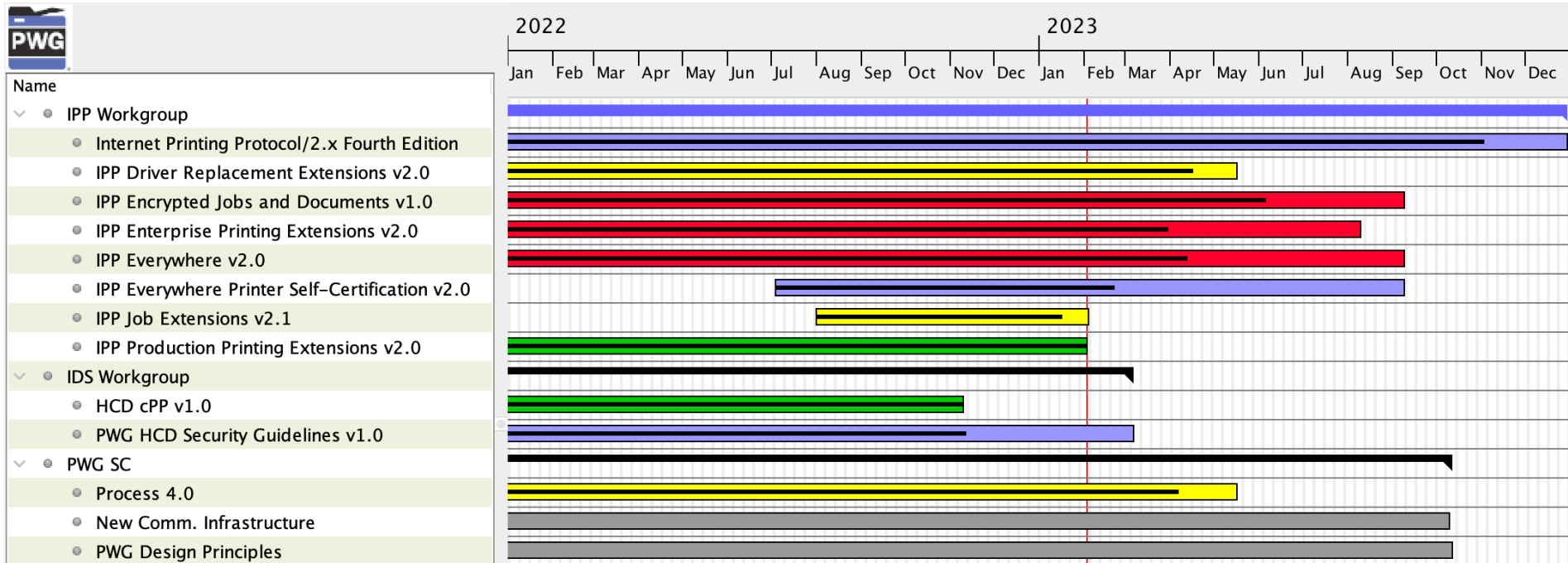
IDS Workgroup Status

Alan Sukert

IDS WG: Officers

- IDS WG Chair:
  - Alan Sukert
- IDS WG Vice-Chair
  - TBD
- IDS WG Secretary:
  - Alan Sukert
- IDS WG Document Editors:
  - Ira – HCD Security Guidelines

- IDS Charter updated to reflect development of Hardcopy Device (HCD) Security Guidelines by Ira and new focus on Common Criteria HCD Protection Profiles (PPs), HCD Security Guidelines and Hardcopy Device security standards

  - Want to focus the IDS WG on outreach with standards bodies involved in HCD security issues.

    - Monitoring development of Hardcopy Device collaborative PP (cPP) / Supporting Document (SD)

    - Looking at initiating interface with other standards efforts related to hardcopy devices

  - IDS WG Meetings

    - Since last IDS F2F on Nov 17, 2022, IDS WG Meetings held on 12/1 & 12/15 in 2022 and 1/12 & 1/26 in 2023

    - Next IDS WG Meeting scheduled for 2/23/2023

IDS: Current Status

- HCD international Technical Committee (iTC):
  - Since the publishing of HCD cPP v1.0 and HCD SD 1.0 on 10/31/22, the HCD iTC non holds HCD iTC Meetings every other week
  - Will discuss the current status of the HCD iTC, the status of the HCD Interpretation Team and plans for future updates to the published HCD cPP and HCD SD at the IDS F2F Session on Thursday February 9th

- Developing HCD Security Guidelines to provide guidance on current HCD security technology and security issues

  - Will review the latest status at the IDS F2F session

- IDS F2F Session will have a special topic summarizing cybersecurity efforts in the US and in the European Union (EU) with respect to cybersecurity

- Finally, IDS F2F Session will review current status of HCD-related standards efforts of the Trusted Computing Group (TCG) and Internet Engineering Task Force (IETF)

IDS WG: More Information

- We welcome participation from all interested parties
- IDS Working Group web page
  - https://www.pwg.org/ids/
- Subscribe to the IDS mailing list
  - https://www.pwg.org/mailman/listinfo/ids
- IDS WG holds bi-weekly meetings via WebEx announced on the IDS mailing list
  - Next meeting is scheduled for Thursday, February 23, 2023 at 3pm ET

The Printer Working Group

IPP Workgroup Status

Paul Tykodi (TCS), Ira McDonald (High North), Michael Sweet (Lakeside Robotics)

IPP WG: Officers

- **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 Everywhere v2.0, IPP Job Extensions v2.1
  - Smith Kennedy (HP Inc.) – IPP Driver Replacement Extensions v2.0, IPP Encrypted Jobs and Documents v1.0, IPP Enterprise Printing Extensions v2.0

IPP WG: Status

- PWG Specifications in development:
  - Internet Printing Protocol/2.x Fourth Edition   - Interim
  - IPP Driver Replacement Extensions v2.0 - PWG Formal Vote
  - IPP Encrypted Jobs and Documents v1.0 - Prototype
  - IPP Enterprise Printing Extensions v2.0   - Prototype
  - IPP Everywhere™ v2.0   - Prototype
  - IPP Everywhere™ Printer Self-Certification Manual v2.0
                                                                       - Interim
  - IPP Job Extensions v2.1   - PWG Call for Obj.

- Recently approved:
  - PWG 5100.3-2023: IPP Production Printing Extensions v2.0 (PPX)

- Up-to-date pending IANA registrations online:
  - https://www.pwg.org/ipp/ipp-registrations.xml
  - Continue to maintain this in parallel for new specifications

IPP WG: More Information

- We welcome participation from all interested parties
- IPP workgroup 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, February 16 and March 2, 2023 at 3pm ET

The Printer Working Group

Liaison Status – February 2023

Linux Foundation OpenPrinting

- **OpenPrintingGoogle Summer of Code 2023 (Aveek/Till)**
  - **https://developers.google.com/open-source/gsoc/timeline**
  - **Aveek/Till are the coordinators for all Linux Foundation projects**
  - **Mentoring organization applications submitted 23 January 2023 to 7 February 2023**
- **OpenPrintingGoogle Summer of Code 2022 (Aveek/Till)**
  - **Aveek/Till are the coordinators for all Linux Foundation projects**
  - **Coding started 13 June 2022 and ended 24 October 2022 (extended four to six weeks)**
- **OpenPrinting CUPS (Zdenek Dohnal, RedHat)**
  - **https://openprinting.github.io/cups-2.4.2/**
  - **Current stable release is OP CUPS v2.4.2 on 26 May 2022.**
- **OpenPrinting CUPS Filters (Till)**
  - **https://github.com/OpenPrinting/cups-filters/releases/tag/1.28.16**
  - **Current release is OP CUPS Filters v1.28.16 on 24 August 2022.**
- **OpenPrinting PAPPL (Printer Application) (Mike)**
  - **https://github.com/michaelrsweet/pappl/releases/tag/v1.3.1**
  - **Current release is PAPPL v1.3.1 on 30 December 2022.**
- **OpenPrinting LPrint Label Printer Application (Mike)**
  - **https://github.com/michaelrsweet/lprint/releases/tag/v1.1.0**
  - **Current release is LPrint v1.1.0 on 23 December 2021**
- **OpenPrinting PostScript, Ghostscript, Gutenprint, HPLIP Printer Apps (Till)**
  - **https://github.com/OpenPrinting/ps-printer-app**
  - **https://github.com/OpenPrinting/ghostscript-printer-app**
  - **https://github.com/OpenPrinting/gutenprint-printer-app**
  - **https://github.com/OpenPrinting/hplip-printer-app**
- **OpenPrinting CUPS Legacy Driver Retro-Fitting Printer Applications (Till)**
  - **https://github.com/OpenPrinting/pappl-retrofit**

Mopria Alliance

- Mopria Alliance liaison to PWG: Michael Rhines (Qualcomm)

- [PWG State of the Union 2022](#) presentation made at the Mopria October 2022 Member Meeting
  - Summarized activities from IDS and IPP Workgroups

- Coordinating on OAuth 2.0 Updates

- Duann Scott (Bits to Atoms) is the new Executive Director of the 3MF Consortium
- Mike Sweet (Lakeside Robotics) is the PWG liaison to the 3MF
- Had an introductory meeting on December 9, 2022 to discuss goals for 2023:
  - Create sample 3MF files with embedded job tickets
  - Work on getting IPP 3D and 3MF+PJT3D support in applications, printers, and services

3D / Additive Manufacturing Liaisons

- America Makes & ANSI Additive Manufacturing Standardization Collaborative (AMSC) -
  - https://www.ansi.org/standards-coordination/collaboratives-activities/additive-manufacturing-collaborative.
    - The IEEE-ISTO Printer Working Group is participating in the AMSC version 3 update. The proposed schedule has version 3 being published in June 2023.

- ASTM Committee F42 on Additive Manufacturing Technologies -
  - https://www.astm.org/COMMITTEE/F42.htm

- The ASTM International Conference on Additive Manufacturing (ICAM 2023 – Oct 30-Nov3, 2023 – Washington DC) -
  - https://amcoe.org/event/icam2023/
    - Alan Sukert chairperson of the IEEE-ISTO PWG Imaging Device Security(IDS) Workgroup participated in the **Industry 4.0: Cyber Security Aspects of AM** track within the 2022 ICAM conference.
    - Opportunity to potentially build on Alan's effort from 2022 and give another Common Criteria Cyber Security focused presentation this year.

- Women in 3D Printing 2023 TIPE Virtual Conference (Technology, Industry, People, Economics) co-sponsored by SME <January 24-26, 2023>
  - Takeaway from Cybersecurity Sessions - Ways of ensuring the protection and authenticity of digital files is a critical need for digital supply chains
    - Possible topic for ICAM 2023 could be illustration of how Common Criteria concept could be used to develop criteria a digital manufacturing organization could use for conformance showing the level of protection it was offering for digital assets received from customers

- INCITS Expert Group of Digital Manufacturing -
  - INCITS Executive Board decided to disband the group at its January 2023 monthly meeting
    - An INCITS email with further information on the disbanding of the EG was shared with the PWG SC.
    - Opportunity to consider establishing a direct Category C liaison with ISO/IEC JTC 1 WG 12 3D Printing and scanning as a replacement for the access PWG was obtaining previously via INCITS EG

3D / Additive Manufacturing Liaisons

- American Concrete Institute Committee 564 - 3-D Printing with Cementitious Materials
  - https://www.concrete.org/committees/directoryofcommittees/acommitteehome.aspx?committee_code=C0056400
    - Paul Tykodi is investigating whether it might be possible for the IEEE-ISTO Printer Working Group to make a presentation on its Safe G-Code best practice document to ACI 564 members via an ACI Training Webinar.

- 3D PDF at the PDF Association -
  - https://www.pdfa.org/3d-pdf-at-the-pdf-association/
    - Paul Tykodi is representing the IEEE-ISTO Printer Working Group in the activities of the PDF Association 3D PDF Technical Working Group (TWG) and as time permits the 3D PDF User Liaison Working Group (LWG) as well.
      - Participation in the work of the PDF Association allows the PWG to monitor the activities of ISO TC171 SC2 - *Document file formats, EDMS systems and authenticity of information* https://www.iso.org/committee/53674.html, which is the committee responsible for PDF file format standardization

- VDMA OPC UA for Additive Manufacturing - Joint Working Group 40 540
  - https://www.vdma.org/events-trade-fairs/-/event/view/70649
    - Paul Tykodi is representing the IEEE-ISTO Printer Working Group in the activities of the Joint Working Group. The JWG has a potential interest in referencing IPP 3D standard for secure remote job submission
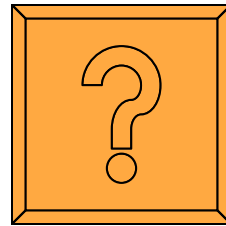
Next PWG Face-to-Face Meeting

May 16 – 18: Joint w/ OpenPrinting – Virtual?

Monitor pwg-announce@pwg.org or the [PWG meeting page](#) for more info.