



The Printer Working Group

PWG February 2024 Face-to-Face Plenary Session

Jeremy Leber, PWG Chair
February 14, 2024

Plenary Agenda



- **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
- 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.



- "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.



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

DO raise an objection if inappropriate topics are discussed

Agenda Overview – Day 1



(All times Eastern Standard Time)

Wednesday, February 14

| | |
|---------------|--|
| 10:00 – 11:30 | PWG Plenary / IDS Status |
| 11:30 – 12:00 | IPP WG: Status / Charter / IPP OAuth Extensions v1.0 |
| 12:00 – 12:45 | Break / Lunch |
| 12:45 – 2:00 | IPP WG: IPP Enterprise Printing Extensions v2.0 |

Agenda Overview – Day 2



(All times Eastern Standard Time)

Thursday, February 15

| | |
|---------------|---|
| 10:00 – 10:30 | IDS WG: Liaison Status |
| 10:30 – 12:00 | IPP WG: Strong Device Identity BoF |
| 12:00 – 12:45 | Break / Lunch |
| 12:45 – 1:45 | IPP WG: IPP System Service v1.1 / IPP Shared Infrastructure Extensions v1.1 |
| 1:45 – 2:15 | IPP WG: 3D Printing Liaisons – Status & Guidance |
| 2:15 – 2:30 | IPP WG: Next Steps |



The Printer Working Group

Steering Committee Updates



Officers (2023-2025 Term)

- PWG Chair: Jeremy Leber, Lexmark
- PWG Vice Chair: Smith Kennedy, HP Inc.
- PWG Secretary: Ira McDonald, High North

Those interested in serving in PWG Officer roles should contact chair@pwg.org.

2023 Membership



28 Members

| | | | | |
|------------------------------|--|-----------------------|------------------------------------|------------------------------------|
| Alan Sukert | Epson | Konica Minolta | Oki Electric Industry Co., Ltd | Technical Interface Consulting |
| Apple Inc. | Fiery, LLC | Kyocera | PaperCut Software | Toshiba Business Solutions |
| Brother Industries, Ltd. | FUJIFILM Business Innovation Corp. | Lakeside Robotics | PrinterLogic | Tykodi Consulting Services LLC |
| Canon | Google | Lexmark | Qualcomm | Xerox |
| Danny Brennan | High North, Inc. | Meteor Network | Ricoh | |
| Digital Check Corp | HP Inc. | Microsoft | Synaptics | |



Reminder: 2024 Fees

- Invoices sent 11/1/2023
- Membership fees were due 1/31/2024
- 8 overdue payments
- If you run into issues with the ISTO payment process, please reach out!
 - Missing invoices
 - Missing payments
 - Lost checks
 - Etc.

Thank You For Participating!



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

Future Meeting Schedule



2024

- May 6-8 – Virtual (Joint with OP)
- August 6-8 – Virtual
- November 12 -14 - Virtual

2025

- February 4-6 – Virtual

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>
- **1237** printers now certified!
 - <https://www.pwg.org/printers/>
 - New printers from Canon, 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**



Projects on GitHub

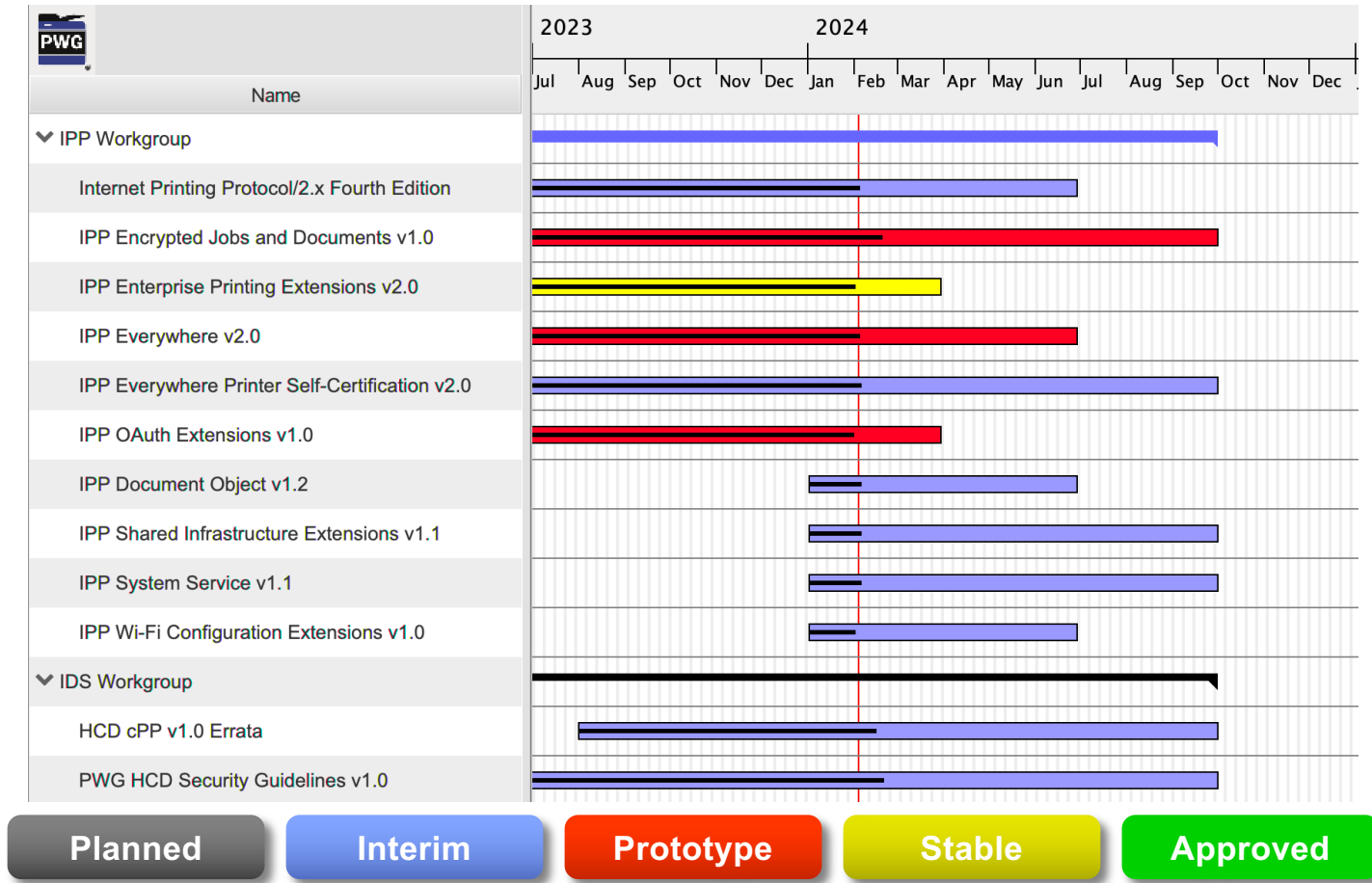
- PWG on GitHub:
 - <https://github.com/istopwg>
- IPP Sample Code
 - <https://github.com/istopwg/ippsample>
- IPP Everywhere Self Certification Tools
 - <https://github.com/istopwg/ippeveselfcert>
- IPP Registry
 - <https://github.com/istopwg/ippregistry>
- PWG Books:
 - <https://github.com/istopwg/pwg-books>



The Printer Working Group

Workgroup Status

Work in Progress





The Printer Working Group

IDS Workgroup Status

Alan Sukert



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

IDS: Current Status



- IDS activities include:
 - Updating PWG members on activities related to:
 - Common Criteria Hard Copy Device (HCD) Protection Profiles (PPs) and the HCD international Technical Community (iTC)
 - Security Developments affecting Hard Copy Devices and Services in other organizations including the Trusted Computing Group (TCG) and Internet Engineering Task Force (IETF),
 - Developing HCD Security Guidelines to provide guidance on current HCD security technology and security issues
- Individual IDS Working Group Sessions are currently on hold until May 2024



HCD ITC / HCD Interpretation Team (HIT) Status



HCD iTC activities since the November 2023's PWG Virtual Face-to-Face have been primarily focused on two efforts:

- Obtaining Endorsements to HCD cPP v1.0 and HCD SD v1.0 by NIAP, the Korean Scheme and the Japanese Scheme
 - The Canadian Scheme already provided its Endorsement to HCD cPP v1.0 and HCD SD v1.0 soon after the two documents were published
- Completing and publishing the Errata to HCD cPP v1.0 and HCD SD v1.0

Endorsement Status:

- All three schemes have indicated that they will, in all likelihood, endorse HCD cPP v1.0e and HCD SD v1.0e (the two Errata versions) as soon as two documents are released

- **HCD international Technical Committee (iTC):**

- The HCD iTC published the Hard Copy Device Collaborative Protection Profile (HCD cPP v1.0) and Supporting Documents (HCD SD 1.0) on 31 October 2022.
- The HCD cPP is currently listed in the Common Criteria Portal (<https://www.commoncriteriaportal.org/pps/collaborativePP.cfm?cpp=1>), with cPPs that include SDs that have not yet completed review for compliance with the CC and CEM and do not yet have a Certification Report. Schemes may certify a cPP upon first use in combination with an IT product evaluation.
- Several product evaluations are in progress and, along with review comments, have identified certain issues (Requests for Interpretation, RfIs)
- The HCD Interpretation Team (HIT) maintains the HCD cPP v1.0 and HCD SD v1.0, provides timely responses to RfIs and is responsible for proposing and formulating updates to the documents. The HIT developed a Version 1.0e of the documents that addresses those RfIs as necessary to allow completion of current product evaluation.
- These drafts are now available on the HCD-iTC-Template GitHub site.
 - https://github.com/HCD-iTC/HCD-iTC-Template/blob/Working/cPP_HCD_v1.0e-DRAFT.pdf
 - https://github.com/HCD-iTC/HCD-iTC-Template/blob/Working/SD_HCD_v1.0e-Draft.pdf

HCD cPP v1.0 / HD SD v1.0 Errata Status



- The goal of the Errata was to address all issues that fell into the following two categories:
 - Issues that were raised by one of the Schemes (NIAP or the Canadian, Korean or Japanese Schemes)
 - Issues that were raised by an Evaluation Lab as part of an on-going certification of an HCD against the HCD cPP v1.0 / HCD SD v1.0
- Final drafts of HCD cPP v1.0e and HCD SD v1.0e have been completed and were circulated on Feb 9th to the four schemes (NIAP and the Canadian, Korean and Japanese Schemes) and to the full HCD iTC membership for their review and comment
- The following two slides indicate the issues that are resolved by the two Errata documents.



HIT Issues Resolved by the Errata

| Issue # | Issue Summary |
|-------------------------|---|
| HCD-IT #2 | In HCD SD Section 2.6.1 FPT_SBT_EXT.1 Extended: Secure Boot, 2.6.1.3 Tests, need clarification that the algorithm verification for Root of Trust should be avoided |
| HCD-IT #4- HCD-IT #7 | These four issues were a set of four comments from NIAP stating areas such as improperly defined Extended Component Definitions and bolding of the selection prompt where the HCD cPP did not follow the conventions stated in Section 5.1 |
| HCD-IT #9 | This issue is about the test cases for SFR FDP_DSK_EXT.1 in the HCD SD requiring an “operational TSFI” (i.e., an external human interface such as a web interface) when user and confidential data stored on nonvolatile data on the HCD is only accessed by the OS and required no human interface |
| HCD-IT #12 | This issue is from the Canadian Scheme and was for the fact that three threats - T.TSF_FAILURE, T.UNAUTHORIZED_UPDATE, and T.WEAK_CRYPTO did not have the required asset information in their definition |
| HCD-IT #16 | This issue documents three comments – two editorial and one technical – from the required CCMB review of the HCD SD v1.0 |

HIT Issues Resolved by the Errata

| Issue # | Issue Summary |
|------------|---|
| HCD-IT #18 | The issue is that the TSS Assurance Activity for SFR FCS_CKM.1/SKG Cryptographic key generation (Symmetric Keys) has to clarify a disconnect how the TOE obtains a symmetric key through direct generation from a random bit generator between the two standards referenced in the SFR. |
| HCD-IT #19 | This issue is whether Tests 1 and 2 for SFR FCS_CKM.4 Cryptographic key destruction apply to only volatile memory |
| HCD-IT #21 | This issue is to clarify when Tests 3 and 4 for SFR FDP_DSK_EXT.1 are required to be run |
| HCD-IT #22 | <p>cPP Section 5.8.4. "FPT_TST_EXT.1 Extended: TSF testing" has the following two paragraphs under Application Note, which has minor consistency among each other:</p> <p>Application Note:</p> <p>Power-on self-tests may take place before the TSF is operational, in which case this SFR can be satisfied by verifying the TSF image by digital signature as specified in FCS_COP.1/SigGen, or by hash specified in FCS_COP.1/Hash. Self-test is intended to detect malfunctions which may compromise the TSF. Since the integrity of the firmware/software is guaranteed by FPT_SBT_EXT, the function for FPT_TST_EXT should address the malfunction detection like DRBG self-test defined in ISO/IEC 18031:2011.</p> <p>Is it sufficient to only run an integrity test (no other tests) on start-up/power on?</p> |



Planned Schedule for Errata Release:

- Feb 13th – HCD iTC Meeting to review Errata final draft
- Feb 22nd – All comments against Errata drafts due to HCD iTC
- Feb 29th – Formal release of HCD cPP v1.0e and HCD SD v1.0e

This, of course, assumes no technical comments and only minor editorial comments

HCD iTC Status - Key Next Steps



- Continue HIT activities for maintaining HCD cPP/SD v1.0e and issue the necessary TDs/TRs to address all documented RfIs once they are released
- Get HCD cPP/SD v1.0e certified by June 30, 2024
- Develop an HCD cPP/HCD SD release plan for future versions of the HCD cPP and HCD SD
- Determine the content for and then create the next HCD cPP/SD version after HCD cPP/SD v1.0e
- Fully engage the HCD iTC to work on the next update to the HCD cPP and HCD SD
- Engage in long-range planning to determine what content will be needed in the HCD cPP/SD in the 3-5 year range and beyond



IDS: Current Status

- 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>
- The IDS Session on 15 February will address
 - Current status of HCD-related standards efforts of the Trusted Computing Group (TCG) and Internet Engineering Task Force (IETF)
 - Developing HCD Security Guidelines to provide guidance on current HCD security technology and security issues
- IDS Workgroup Bi-weekly Meetings
 - IDS meetings are currently suspended and will resume in the Spring
 - Announcement will be made via the IDS mailing list (ids@pwg.org) when meetings will resume.



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 Document Object v1.2, IPP Encrypted Jobs and Documents v1.0, IPP Everywhere v2.0, IPP Everywhere Printer Self-Certification Manual v2.0, IPP OAuth Extensions v1.0, IPP Shared Infrastructure Extensions v1.1, IPP System Service v1.1, IPP Wi-Fi Configuration Extensions v1.0
 - Smith Kennedy (HP Inc.) – IPP Encrypted Jobs and Documents v1.0, IPP Enterprise Printing Extensions v2.0



- **PWG Specifications in development:**
 - Internet Printing Protocol/2.x Fourth Edition (Interim)
 - IPP Document Object v1.2 (Interim)
 - IPP Encrypted Jobs and Documents v1.0 (Prototype)
 - IPP Enterprise Printing Extensions v2.0 (Completed PWG Last Call)
 - IPP Everywhere™ v2.0 (Prototype)
 - IPP Everywhere™ Printer Self-Certification Manual v2.0 (Interim)
 - IPP OAuth Extensions v1.0 (Prototype)
 - IPP Shared Infrastructure Extensions v1.1 (Interim)
 - IPP System Service v1.1 (Interim)
- **Recently approved:**
 - PWG 5100.3-2023: IPP Production Printing Extensions v2.0 (PPX)
 - PWG 5100.7-2023: IPP Job Extensions v2.1 (JOBEXT)
 - PWG 5100.13-2023: IPP Driver Replacement Extensions v2.0 (NODRIVER)
 - PWG 5101.1-2023: PWG Media Standardized Names v2.1 (MSN)
- **Up-to-date pending IANA registrations online:**
 - <https://www.pwg.org/ipp/ipp-registrations.xml>

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 29 and March 14, 2024 at 3pm ET



The Printer Working Group

Liaison Status – February 2024



Linux Foundation OpenPrinting (1 of 2)

- **OpenPrinting CUPS (Zdenek Dohnal, RedHat)**
 - Current v2.x release is OP CUPS v2.4.7 on 20 October 2023
<https://openprinting.github.io/cups-2.4.7>
 - Current v3.x beta release is OP CUPS v3.0b2 on 5 October 2023
<https://github.com/OpenPrinting/libcups/releases/v3.0b2>
- **OpenPrinting CUPS Filters (Till)**
 - Current v1.x release is OP CUPS Filters v1.28.17 on 24 January 2023
<https://github.com/OpenPrinting/cups-filters/releases/tag/1.28.17>
 - Current v2.x final release is OP CUPS Filters v2.0.0 on 22 September 2023
<https://openprinting.github.io/cups-filters-Second-Generation-Final-2.0.0-Release/>
- **OpenPrinting PAPPL (Printer Application) (Mike)**
 - Current release is PAPPL v1.4.6 on 9 February 2024
<https://github.com/michaelsweet/pappl/releases/tag/v1.4.6>
- **OpenPrinting LPrint Label Printer Application (Mike)**
 - Current release is LPrint v1.3.0 on 31 January 2024
<https://github.com/michaelsweet/lprint/releases/tag/v1.3.0>
- **OpenPrinting Postscript, Ghostscript, Gutenprint, HPLIP Apps (Till)**
 - Printer Applications
<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)**
 - Retrofitting Printer Applications
<https://github.com/OpenPrinting/pappl-retrofit>



Linux Foundation OpenPrinting (2 of 2)

- **OpenPrinting Website, News, and Minutes**
 - OpenPrinting Website
<https://openprinting.github.io/>
 - OpenPrinting Monthly News
<https://openprinting.github.io/news/>
 - OpenPrinting Monthly Minutes
<http://ftp.pwg.org/pub/pwg/liaison/openprinting/minutes/>
- **OpenPrinting Google Summer of Code 2023 (Aveek/Till)**
 - Coding started 29 May 2023 and ended 30 October 2023 – 4 passed / 1 failed
<https://developers.google.com/open-source/gsoc/timeline>
 - Akarshan Kapoor – PAPPL Scanning
<https://dev.to/kappuccino111/sandboxing-scanners-a-leap-into-the-driverless-realm-gsoc-23-report-3eci>
 - Kushagra Sharma – CPDB in Chromium Print Dialog
<https://github.com/kushagra20251/GSoC/>
 - Mohit Verma – GNOME Control Center: List IPP print services for New Architecture
<https://github.com/vermamohit13/GSOC-2023>
 - Pratyush Ranjan – CI: Test Programs ibccupsfilters, libpappl-retrofit, libpppd, CPDB
<https://github.com/pranjanpr/GSoC-23>
 - Gayatri Kapse, Yuvraj Aseri – Native gutenprint Printer Application - FAILED
- **OpenPrinting Google Summer of Code 2024 (Aveek/Till)**
 - GSoC 2024 Timeline
<https://developers.google.com/open-source/gsoc/timeline>
 - DONE – 22 January to 6 February 2024 – GSoC 2024 Mentoring Org Applications
 - 21 February 2024 – GSoC 2024 List of Accepted Mentoring Organizations
 - 18 March to 2 April 2024 – GSoC 2024 Contributor Applications
 - 27 May 2024 – GSoC 2024 Coding Officially Begins



- Anthony Suarez (Kyocera): Mopria Alliance liaison to PWG
- Smith Kennedy (HP Inc.): PWG liaison to Mopria Alliance
- PWG presented "Recent Significant Changes to IPP" at Mopria Member Meeting November 9, 2023
- No active collaboration efforts but opportunities exist

3MF Consortium



- Duann Scott (Bits to Atoms) is the Executive Director of the 3MF Consortium
- Mike Sweet (Lakeside Robotics) is the PWG liaison to the 3MF
- No updates since the November 2023 virtual Face-to-Face meeting

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 updating PWG presentation slides from fall 2019. The updated presentation is meant to be available to ACI Committee 564 members prior to their Spring 2024 conference in New Orleans, LA.
 - PWG steering committee has determined that the most efficient way to deliver information about the relevance of PWG Safe G-code, in the preparation of 3D Concrete Printing test files, is for Paul Tykodi to prepare a training video on the subject and make the resulting video file available from the PWG GitHub site.
- 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 participated in the AMSC version 3 update activities. ANSI announced publication of version 3 on July 17th, 2023.
- ASTM Committee F42 on Additive Manufacturing Technologies -
 - <https://www.astm.org/COMMITTEE/F42.htm>

3D / Additive Manufacturing Liaisons



- The ASTM International Conference on Additive Manufacturing (ICAM 2023 – Oct 30-Nov 3, 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: Security Aspects of AM** track within the 2023 ICAM conference. The title of his presentation was "*Developing Cyber Security Certification for the Additive Manufacturing Process*".
 - Alan's presentation leveraged some new capabilities recently added to the Common Criteria standard, which can be used to develop Common Criteria certification for a whole digital thread workflow. The new capabilities can be used to validate some of the latest Additive Manufacturing Security efforts being undertaken by NIST.
- Drupa Next Age
 - https://www.drupa.com/en/Media_News/Press/Press_Material/Press_releases/drupa_next_age_Platform_for_networking_and_new_business
 - The PWG is waiting to hear whether a proposed drupa next age presentation on how PWG 3D Standards are likely to assist continued growth of the 3D Printing market has been accepted.
- TCT 3Sixty Conference
 - <https://tct3sixty.com/>
 - The PWG is waiting to hear whether the abstract it submitted in December 2023 (Construction & Architecture - Safe G-Code for sharing test files) has been accepted.

3D / Additive Manufacturing Liaisons



- VDMA OPC UA for Additive Manufacturing - Joint Working Group 40540
 - <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
- 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
 - Current PDF Standards Supporting 3D Content
 - ISO 32000-2:2020 PDF 2.0 <https://pdfa.org/resource/iso-32000-pdf/#pdf-2>
 - ISO 21757 (ECMAScript for PDF) <https://pdfa.org/resource/iso-21757-ecmascript/>
 - ISO 14739-1:2014 PRC <https://pdfa.org/resource/3d-formats/#prc-1>
 - ISO/TS 24064:2023 STEP (AP242) <https://www.iso.org/standard/77686.html>
 - In Process PDF Standards Supporting 3D Content
 - ISO/CD TS 32007 Document management — Portable Document Format — RichMedia annotations conforming to glTF assets <https://www.iso.org/standard/45880.html>

Other Questions / Comments



Next PWG Face-to-Face Meeting



- May 6-8 – Virtual (Joint with OP)

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

Lunch/Break



- Will return at 12:45!