

Charter of the PWG

IPP Workgroup

Status: [Stable](#)
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<http://ftp.pwg.org/pub/pwg/ipp/wd/wd-ipp-charter-20151119.pdf>

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Problem Statement:

New mobile devices (e.g., cellphones, PDAs, netbooks, tablets, etc.) do not follow the traditional use models for printing services. For mobile devices, discovery of available printers and their capabilities is both more difficult than for traditional desktop systems and more important (because of dynamically changing network attachment points).

New network architectures (e.g., Cloud, SASS, Software-Defined Networks, etc.) do not follow the traditional use models for enterprise networks. In shared infrastructure environments, enterprise services and databases are often configured on external networks accessible only via the public Internet. Client enrollment, printer registration, user access control, job and document forwarding, and job accounting features are inherently more difficult to deploy than for traditional enterprise networks (because perimeter firewalls are both insufficient for security and difficult to traverse for Internet-based services).

Emerging manufacturing devices ("3D Printers") are just beginning to address network connectivity and pose new safety concerns. Current solutions depend on vendor specific software and low-level device control languages, hindering interoperability and operational safety.

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Current IPP WG Projects:

Current IPP WG projects include the following new or updated specifications:

(a) IPP/1.1 (draft-sweet-rfc2911bis-xx.txt and draft-sweet-rfc2910bis-xx.txt) – define IETF standards-track updates to the original IPP/1.1 Model and Semantics (RFC 2911) and IPP/1.1 Encoding and Transport (RFC 2910), incorporating appropriate content from [IPP Job Progress \(RFC 3381\)](#) and IPP ‘collection’ [Attribute Syntax](#) (RFC 3382) into each IPP/1.1 base specification for the purpose of advancing IPP/1.1 to [IETF Internet Standard](#);

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(b) IPP Everywhere Printer Self-Certification Manual v1.0 (SELFCERT) (wd-ippeveselfcert10-yyyymmdd) – define IPP Everywhere Printer self-certification test procedures, the process required for registering the test results in order to use the PWG "IPP Everywhere" logo on a product, and a license agreement for the use of this logo;

Deleted: (b) IPP over HTTPS Transport Binding and ‘ipps’ URI Scheme (IETF draft-mcdonald-ipps-uri-scheme-xx.txt) – define a standards-track IETF ‘ipps’ URI scheme for IPP over HTTPS that will always **start** TLS first **before** the HTTP session layer, designed to be coherent with the original IPP URL Scheme (RFC 3510) and IPP Everywhere (PWG 5100.14-2013); - (... [1])

(c) IPP System Service v1.0 (SYSTEM) (wd-ippsystem10-yyyymmdd) – define an IPP System service that extends IPP Job and Printer Administrative Operations (RFC 3998) and provides **read-write** access to the status, configuration, description, counters, etc. defined in the PWG SM System object and PWG System Control Service, operations on Job Services, Resources, and Cloud registration, designed to be coherent

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67 with PWG SM System Control Service (PWG 5108.06-2012), PWG SM Resource Service (PWG 5108.03),
68 and IPP Shared Infrastructure Extensions (INFRA);

69 [\(d\) IPP 3D Printing Extensions v1.0 \(wd-ipp3d10-yyyymmdd\) - define IPP extensions and make PDL and](#)
70 [service discovery recommendations to support manufacturing devices, "3D Printers" and Cloud-based](#)
71 [manufacturing services, with a corresponding service type.](#)

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74 [\(e\) IPP FaxOut Service v1.1 \(FAXOUT\) \(wd-ippfaxout11-yyyymmdd\) – define an errata update to IPP](#)
75 [FaxOut Service v1.0 \(PWG 5100.14-2014\) to address known errata, add missing attributes or values, avoid](#)
76 [increasing any conformance requirements, and align with PWG IPP Scan Service \(PWG5100.SCAN\);](#)
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78 [\(f\) IPP Transform Service v1.0 \(XFORM\) \(wd-ippxform10-yyyymmdd\) – define an IPP Transform service](#)
79 [based on existing PWG SM Transform Service drafts and PWG F2F discussions, to extend the set of](#)
80 [services supported by IPP System Service and IPP Everywhere Multifunction;](#)

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82 [\(g\) IPP Printer State Extensions v1.1 \(PSX\) \(wd-ippstate11-yyyymmdd\) – define an errata update to IPP](#)
83 [Printer State Extensions v1.0 \(PWG 5100.9-2009\) to address known errata, add missing attributes or](#)
84 [values, avoid increasing any conformance requirements, align with IPP Shared Infrastructure Extensions](#)
85 [\(PWG5100.INFRA\), and submit IANA Printer TC registrations for new xxx-missing PrtAlertCodeTC](#)
86 [values;](#)
87

88 [\(h\) Printer MIB and IPP MFD Alerts v1.1 \(MFDALERTS\) \(wd-pmpmfdalerts11-yyyymmdd\) – define an](#)
89 [errata update to Printer MIB and IPP MFD Alerts v1.0 \(PWG 5107.3-2012\) to address known errata, add](#)
90 [missing attributes or values, avoid increasing any conformance requirements, align with IPP Shared](#)
91 [Infrastructure Extensions \(PWG5100.INFRA\) and submit IANA Printer TC registration for](#)
92 [PrtAlertCodeTC new comments on fax-modem-protocol-error and xxx-recoverable-storage-error and new](#)
93 [values of xxx-missing \(drop suffix from IPP keyword w/ corresponding suffix \(-error, -report, -warning\)](#)
94 [and add appropriate suffix depending on the Printer state over the wire\);](#)
95

96 [\(i\) IPP Finishings v2.1 \(FIN\) \(wd-ippfinishings21-yyyymmdd\) - define an errata update to IPP Finishings](#)
97 [v2.0 \(FIN\) \(PWG 5100.1-2015\) to address known editorial issues, clarify finishing processes for things](#)
98 [such as the staple/stitch origin, and add OPTIONAL "xxx-configured" Printer Description attributes to](#)
99 [allow Clients to accurately preview the results of finishing processes, e.g., staple/stitch width and](#)
100 [orientation, punch hole diameter, etc.](#)
101

102 [\(j\) IPP Everywhere Multifunction v1.0 \(EVEMFD\) \(wd-ippevemfd10-yyyymmdd\) – define an update to](#)
103 [IPP Everywhere v1.0 for multifunction devices that incorporates IPP 2.0, 2.1, and 2.2 \(IPP2X\), IPP](#)
104 [Transaction-Based Printing Extensions, "ipps:" URI Scheme, LDAP Printer Schema, IPP JPS3, IPP](#)
105 [Finishings v2.1, IPP Shared Infrastructure Extensions, IPP FaxOut, IPP Scan, IPP Transform, and IPP](#)
106 [System Service.](#)
107

108 Potential IPP WG Projects:

109 Potential IPP WG projects include the following new or updated specifications:

110
111 (a) TBD – define errata updates to IETF and PWG IPP protocol extensions as necessary, to address known
112 errata, add missing attributes or values, and avoid increasing any conformance requirements;

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114 (b) TBD – define errata updates to IETF and PWG SNMP MIBs as necessary, to address known errata, add
115 missing values, and avoid increasing any conformance requirements;

116
117 (c) IPP Concise – define a whitepaper on a new IPP Transport and Encoding (alternative to RFC 2910)
118 optimized for smartphones, vehicles, embedded systems, and other Internet of Things devices that includes:

- 119 • rationale, use cases with feasibility and constraints (e.g., limited CPU/RAM and intermittent
120 connectivity), and design requirements;
- 121 • transport (w/out HTTP) via Transport Layer Security 1.2 (TLS) (RFC 5246) and Datagram TLS
122 1.2 (DTLS) (RFC 6347) or later versions (see <https://datatracker.ietf.org/wg/tls/documents/>);
- 123 • encoding in Concise Binary Object Representation (CBOR) (RFC 7049);
- 124 • schema for operations, objects, and attributes in CBOR Data Definition Language (CDDL) (see
125 IETF I-D draft-greevenbosch-appsawg-cbor-cddl);

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Deleted: (h) IPP Shared Infrastructure Extensions (INFRA) (wd-ippinfra10-yyyymmdd) – define new IPP Client, IPP Proxy, and/or IPP Printer operations and attributes designed to support IPP-based network printing in Cloud, Software Defined Network (SDN), and other shared infrastructure environments; .

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- potential non-IP network layer protocols, e.g. DTLS over cellular Short Message Service (SMS, aka “text messages”) (see IETF I-D draft-fossati-dtls-over-gsm-sms).

Deleted: (d) IPP 3D Printing – define a whitepaper on a new IPP 3D Printing extension. [↔](#)

150 **Out-of-scope:**

151 The following projects and activities are out-of-scope for the IPP WG:

- 153 • OOS-1 Definitions of new device discovery or service advertising protocols, although new profiles or subsets of existing device discovery or service advertising protocols are appropriate and encouraged.
- 154 • OOS-2 Definitions of new device management protocols (except for IPP System Service above), although new profiles or subsets of existing device management protocols are appropriate and encouraged.
- 155 • OOS-3 Definitions of new IPP transport bindings (except for potential IPP Concise above), although the design of IPP projects MUST NOT preclude additional transport bindings.
- 156 • OOS-4 Definitions of new work on the following potential IPP projects is suspended until use cases, editors, and interested vendors have been identified: IPP FaxIn Service.
- 157 • OOS-5 Definitions of new work on the following potential IPP projects is abandoned: IPP Copy Service, IPP EmailIn Service, IPP EmailOut Service.

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166 **Objectives:**

167 The following objectives should guide all new IPP WG projects:

- 169 • OBJ-1 Optimize all IPP extensions for small memory and resource footprints for IPP Clients and IPP Printers.
- 170 • OBJ-2 Design all IPP extensions to allow for other future protocol bindings (e.g., Web Services, CBOR).
- 171 • OBJ-3 Design all IPP extensions to allow the use of vendor-neutral generic print software by IPP Clients.
- 172 • OBJ-4 Design all IPP extensions to allow ease of integration with shared infrastructure environments and Internet-based services.
- 173 • OBJ-5 Define the set of new IPP specifications enumerated in the current projects list in Problem Statement clause above.
- 174 • OBJ-6 Define errata, updates, and extensions to existing IETF and PWG IPP specifications and SNMP MIBs as necessary.

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182 **Milestones:**

183 **Charter Stage:**

- 184 • CH-1 ~~Interim~~ draft of IPP WG Charter – ~~DONE~~
- 185 • CH-2 Stable draft of IPP WG Charter – ~~DONE~~
- 186 • CH-3 PWG Approval of IPP WG Charter - ~~Q4 2015~~

187 **Definition Stage:**

- 188 • SELFCERT-1 Initial draft of IPP Everywhere ~~Printer~~ Self-Certification – ~~DONE~~
- 189 • SELFCERT-2 Prototype draft of IPP Everywhere ~~Printer~~ Self-Certification – ~~DONE~~
- 190 • SELFCERT-3 Stable draft of IPP Everywhere ~~Printer~~ Self-Certification - ~~DONE~~
- 191 • SYSTEM-1 Initial draft of IPP System Service v1.0 – ~~DONE~~
- 192 • SYSTEM-2 Prototype draft of IPP System Service v1.0 - ~~Q2 2016~~
- 193 • SYSTEM-3 Stable draft of IPP System Service v1.0 - ~~Q3 2016~~
- 194 • JPP11-1 Initial drafts of IETF IPP/1.1 specs (for IETF ~~Internet~~ Standard) – ~~DONE~~

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- 225 • IPP11-2 Stable drafts of IETF IPP/1.1 specs (for IETF Internet Standard) - Q1 2016
- 226 • ~~IPP11-3~~ IETF Last Call of IETF IPP/1.1 specs (for IETF Internet Standard) - Q1/Q2 2016
- 227
- 228 • IPP3D-1 Interim draft of IPP 3D Printing Extensions v1.0 - Q1 2016
- 229 • IPP3D-2 Prototype draft of IPP 3D Printing Extensions v1.0 - Q3 2016
- 230 • IPP3D-3 Stable draft of IPP 3D Printing Extensions v1.0 - Q3/Q4 2016
- 231
- 232 • XFORM-1 Initial draft of IPP Transform Service v1.0 - Q2/Q3 2016
- 233 • XFORM-2 Prototype draft of IPP Transform Service v1.0 - Q2/Q3 2016
- 234
- 235 • IPPSTATE-1 Interim draft of IPP Printer State Ext v1.1 (Errata) - TBD
- 236 • IPPSTATE-2 Stable draft of IPP Printer State Ext v1.1 (Errata) - TBD
- 237
- 238 • MFDALERTS-1 Interim draft of MFD Alerts v1.1 (Errata) - TBD
- 239 • MFDALERTS-2 Stable draft of MFD Alerts v1.1 (Errata) - TBD
- 240
- 241 • FAXOUT-1 Interim draft of IPP FaxOut v1.1 (Errata) - TBD
- 242 • FAXOUT-2 Stable draft of IPP FaxOut v1.1 (Errata) - TBD
- 243
- 244 • FINISHINGS-1 Interim draft of IPP Finishings v2.1 (Errata) - TBD
- 245 • FINISHINGS-2 Stable draft of IPP Finishings v2.1 (Errata) - TBD
- 246
- 247 • EVEMFD-1 Initial draft of IPP Everywhere Multifunction v1.0 - TBD
- 248 • EVEMFD-2 Prototype draft of IPP Everywhere Multifunction v1.0 - TBD

249 **Implementation Stage:**

- 250 • INTEROP-1 Interoperability testing of IPP Everywhere implementations - Q2 2016
- 251 • INTEROP-2 Interoperability testing of IPP INFRA implementations - TBD
- 252 • INTEROP-3 Interoperability testing of IPP 3D Printing implementations - Q3/Q4 2017
- 253 • INTEROP-4 Interoperability testing of IPP Scan Service implementations - TBD
- 254 • INTEROP-5 Interoperability testing of IPP System Service implementations - TBD
- 255 • INTEROP-6 Interoperability testing of IPP Transform Service implementations - TBD
- 256 • INTEROP-7 Interoperability testing of IPP Everywhere Multifunction implementations - TBD

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XFORM-2 - Prototype draft of IPP Transform Service v1.0 - TBD -
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(b) IPP over HTTPS Transport Binding and ‘ipps’ URI Scheme (IETF draft-mcdonald-ipps-uri-scheme-xx.txt) – define a standards-track IETF ‘ipps’ URI scheme for IPP over HTTPS that will always **start** TLS first **before** the HTTP session layer, designed to be coherent with the original IPP URL Scheme (RFC 3510) and IPP Everywhere (PWG 5100.14-2013);

(c) Lightweight Directory Access Protocol (LDAP): Schema for Printer Services (IETF draft-mcdonald-ldap-printer-schema-xx.txt) – define an IETF informational update to the original LDAP Schema for Printer Services (RFC 3712), adding new discovery attributes (e.g., geolocation) needed for IPP Everywhere (PWG 5100.14-2013);

(d) IPP 2.0, 2.1, and 2.2 (IPP2X) (wd-ipp20-yyyymmdd) – define an errata update to IPP 2.0 Second Edition (PWG5100.12-2012) to address known errata, add missing attributes or values, and avoid increasing any conformance requirements for the purpose of advancing IPP/2.0 to full IEEE Standard;

(e) IPP Implementor’s Guide v2.0 (IG) (wd-ippig20-yyyymmdd) – define update to IPP/1.1 Implementor’s Guide (RFC 3196) that specifies best practices for interoperability in implementations of IPP Client and IPP Printer software and considers all of the IETF and PWG IPP extensions published since 2000;

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URI-2	IETF Last Call of IPP over HTTPS and ‘ipps’ URI Scheme – Q4 2014 – DONE
LDAP-2	IETF RFC ISE review of LDAP Printer Schema – Q4 2014 – DONE
IPP2X-1	Initial draft of IPP 2.0, 2.1, and 2.2 (for IEEE Standard) – Q1 2015

Page 5: [3] Deleted **Michael Sweet** **2015-11-06 12:02 PM**

FAXOUT-1	Initial draft of IPP FaxOut v1.1 – Q1/Q2 2015
IPP2X-2	Stable draft of IPP 2.0, 2.1, and 2.2 (for IEEE Standard) – PWG Formal Vote – Q2/Q3 2015
IPPSTATE-2	Stable draft of IPP Printer State Ext – Call for Objections – Q2/Q3 2015