

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.

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;

(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;

(c) IPP System Service v1.0 (SYSTEM) ([wd-ippssystem10-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

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

50
51 (d) IPP 3D Printing Extensions v1.0 (wd-ipp3d10-yyyymmdd) - define IPP extensions and make PDL and
52 service discovery recommendations to support manufacturing devices ("3D Printers") and Cloud-based
53 manufacturing services, with a corresponding service type.

54
55 (e) IPP FaxOut Service v1.1 (FAXOUT) (wd-ippfaxout11-yyyymmdd) – define an errata update to IPP
56 FaxOut Service v1.0 (PWG 5100.14-2014) to address known errata, add missing attributes or values, avoid
57 increasing any conformance requirements, and align with PWG IPP Scan Service (PWG5100.SCAN);

58
59 (f) IPP Transform Service v1.0 (XFORM) (wd-ippxform10-yyyymmdd) – define an IPP Transform service
60 based on existing PWG SM Transform Service drafts and PWG F2F discussions, to extend the set of
61 services supported by IPP System Service and IPP Everywhere Multifunction;

62
63 (g) IPP Printer State Extensions v1.1 (PSX) (wd-ippstate11-yyyymmdd) – define an errata update to IPP
64 Printer State Extensions v1.0 (PWG 5100.9-2009) to address known errata, add missing attributes or
65 values, avoid increasing any conformance requirements, align with IPP Shared Infrastructure Extensions
66 (PWG5100.INFRA), and submit IANA Printer TC registrations for new xxx-missing PrtAlertCodeTC
67 values;

68
69 (h) Printer MIB and IPP MFD Alerts v1.1 (MFDALERTS) (wd-pmpmfdalerts11-yyyymmdd) – define an
70 errata update to Printer MIB and IPP MFD Alerts v1.0 (PWG 5107.3-2012) to address known errata, add
71 missing attributes or values, avoid increasing any conformance requirements, align with IPP Shared
72 Infrastructure Extensions (PWG5100.INFRA) and submit IANA Printer TC registration for
73 PrtAlertCodeTC new comments on fax-modem-protocol-error and xxx-recoverable-storage-error and new
74 values of xxx-missing (drop suffix from IPP keyword w/ corresponding suffix (-error, -report, -warning)
75 and add appropriate suffix depending on the Printer state over the wire);

76
77 (i) IPP Finishings v2.1 (FIN) (wd-ippfinishings21-yyyymmdd) - define an errata update to IPP Finishings
78 v2.0 (FIN) (PWG 5100.1-2015) to address known editorial issues, clarify finishing processes for things
79 such as the staple/stitch origin, and add OPTIONAL "xxx-configured" Printer Description attributes to
80 allow Clients to accurately preview the results of finishing processes, e.g., staple/stitch width and
81 orientation, punch hole diameter, etc.

82
83 (j) IPP Everywhere Multifunction v1.0 (EVEMFD) (wd-ippevemfd10-yyyymmdd) – define an update to
84 IPP Everywhere v1.0 for multifunction devices that incorporates IPP 2.0, 2.1, and 2.2 (IPP2X), IPP
85 Transaction-Based Printing Extensions, "ipps:" URI Scheme, LDAP Printer Schema, IPP JPS3, IPP
86 Finishings v2.1, IPP Shared Infrastructure Extensions, IPP FaxOut, IPP Scan, IPP Transform, and IPP
87 System Service.

88 **Potential IPP WG Projects:**

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

90
91
92 (a) TBD – define errata updates to IETF and PWG IPP protocol extensions as necessary, to address known
93 errata, add missing attributes or values, and avoid increasing any conformance requirements;

94
95 (b) TBD – define errata updates to IETF and PWG SNMP MIBs as necessary, to address known errata, add
96 missing values, and avoid increasing any conformance requirements;

97
98 (c) IPP Concise – define a whitepaper on a new IPP Transport and Encoding (alternative to RFC 2910)
99 optimized for smartphones, vehicles, embedded systems, and other Internet of Things devices that includes:

- 100 • rationale, use cases with feasibility and constraints (e.g., limited CPU/RAM and intermittent
- 101 connectivity), and design requirements;
- 102 • transport (w/out HTTP) via Transport Layer Security 1.2 (TLS) (RFC 5246) and Datagram TLS
- 103 1.2 (DTLS) (RFC 6347) or later versions (see <https://datatracker.ietf.org/wg/tls/documents/>);
- 104 • encoding in Concise Binary Object Representation (CBOR) (RFC 7049);
- 105 • schema for operations, objects, and attributes in CBOR Data Definition Language (CDDL) (see
- 106 IETF I-D draft-greevenbosch-appsawg-cbor-cddl);

- 107 • potential non-IP network layer protocols, e.g. DTLS over cellular Short Message Service (SMS,
108 aka “text messages”) (see IETF I-D draft-fossati-dtls-over-gsm-sms).
109

110 **Out-of-scope:**

111 The following projects and activities are out-of-scope for the IPP WG:
112

- 113 • OOS-1 Definitions of new device discovery or service advertising protocols, although new
114 profiles or subsets of existing device discovery or service advertising protocols are
115 appropriate and encouraged.
- 116 • OOS-2 Definitions of new device management protocols (except for IPP System Service above),
117 although new profiles or subsets of existing device management protocols are appropriate
118 and encouraged.
- 119 • OOS-3 Definitions of new IPP transport bindings (except for potential IPP Concise above),
120 although the design of IPP projects MUST NOT preclude additional transport bindings.
- 121 • OOS-4 Definitions of new work on the following potential IPP projects is suspended until use
122 cases, editors, and interested vendors have been identified: IPP FaxIn Service.
- 123 • OOS-5 Definitions of new work on the following potential IPP projects is abandoned: IPP Copy
124 Service, IPP EmailIn Service, IPP EmailOut Service.
125

126 **Objectives:**

127 The following objectives should guide all new IPP WG projects:
128

- 129 • OBJ-1 Optimize all IPP extensions for small memory and resource footprints for IPP Clients and
130 IPP Printers.
- 131 • OBJ-2 Design all IPP extensions to allow for other future protocol bindings (e.g., Web Services,
132 CBOR).
- 133 • OBJ-3 Design all IPP extensions to allow the use of vendor-neutral generic print software by IPP
134 Clients.
- 135 • OBJ-4 Design all IPP extensions to allow ease of integration with shared infrastructure
136 environments and Internet-based services.
- 137 • OBJ-5 Define the set of new IPP specifications enumerated in the current projects list in
138 Problem Statement clause above.
- 139 • OBJ-6 Define errata, updates, and extensions to existing IETF and PWG IPP specifications and
140 SNMP MIBs as necessary.
141

142 **Milestones:**

143 **Charter Stage:**

- 144 • CH-1 Interim draft of IPP WG Charter – DONE
145 • CH-2 Stable draft of IPP WG Charter – DONE
146 • CH-3 PWG Approval of IPP WG Charter - Q4 2015

147 **Definition Stage:**

- 148
- 149 • SELFCERT-1 Initial draft of IPP Everywhere Printer Self-Certification – DONE
150 • SELFCERT-2 Prototype draft of IPP Everywhere Printer Self-Certification – DONE
151 • SELFCERT-3 Stable draft of IPP Everywhere Printer Self-Certification - DONE
152
- 153 • SYSTEM-1 Initial draft of IPP System Service v1.0 – DONE
154 • SYSTEM-2 Prototype draft of IPP System Service v1.0 - Q2 2016

- 155 • SYSTEM-3 Stable draft of IPP System Service v1.0 - Q3 2016
- 156
- 157 • IPP11-1 Initial drafts of IETF IPP/1.1 specs (for IETF Internet Standard) – DONE
- 158 • IPP11-2 Stable drafts of IETF IPP/1.1 specs (for IETF Internet Standard) - Q1 2016
- 159 • IPP11-3 IETF Last Call of IETF IPP/1.1 specs (for IETF Internet Standard) – Q1/Q2 2016
- 160
- 161 • IPP3D-1 Interim draft of IPP 3D Printing Extensions v1.0 - Q1 2016
- 162 • IPP3D-2 Prototype draft of IPP 3D Printing Extensions v1.0 - Q3 2016
- 163 • IPP3D-3 Stable draft of IPP 3D Printing Extensions v1.0 - Q3/Q4 2016
- 164
- 165 • XFORM-1 Initial draft of IPP Transform Service v1.0 – Q2/Q3 2016
- 166 • XFORM-2 Prototype draft of IPP Transform Service v1.0 – Q2/Q3 2016
- 167
- 168 • IPPSTATE-1 Interim draft of IPP Printer State Ext v1.1 (Errata) – TBD
- 169 • IPPSTATE-2 Stable draft of IPP Printer State Ext v1.1 (Errata) – TBD
- 170
- 171 • MFDALERTS-1 Interim draft of MFD Alerts v1.1 (Errata) – TBD
- 172 • MFDALERTS-2 Stable draft of MFD Alerts v1.1 (Errata) – TBD
- 173
- 174 • FAXOUT-1 Interim draft of IPP FaxOut v1.1 (Errata) – TBD
- 175 • FAXOUT-2 Stable draft of IPP FaxOut v1.1 (Errata) - TBD
- 176
- 177 • FINISHINGS-1 Interim draft of IPP Finishings v2.1 (Errata) - TBD
- 178 • FINISHINGS-2 Stable draft of IPP Finishings v2.1 (Errata) - TBD
- 179
- 180 • EVEMFD-1 Initial draft of IPP Everywhere Multifunction v1.0 – TBD
- 181 • EVEMFD-2 Prototype draft of IPP Everywhere Multifunction v1.0 – TBD

182 **Implementation Stage:**

- 183 • INTEROP-1 Interoperability testing of IPP Everywhere implementations –Q2 2016
- 184 • INTEROP-2 Interoperability testing of IPP INFRA implementations – TBD
- 185 • INTEROP-3 Interoperability testing of IPP 3D Printing implementations - Q3/Q4 2017
- 186 • INTEROP-4 Interoperability testing of IPP Scan Service implementations – TBD
- 187 • INTEROP-5 Interoperability testing of IPP System Service implementations – TBD
- 188 • INTEROP-6 Interoperability testing of IPP Transform Service implementations – TBD
- 189 • INTEROP-7 Interoperability testing of IPP Everywhere Multifunction implementations – TBD