

# Charter of the PWG

## IPP Working Group

Status: PWG Approved

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<http://ftp.pwg.org/pub/pwg/ipp/charter/ch-ipp-charter-20150305.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).

### 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 ‘collection’ (RFC 3382) into each IPP/1.1 base specification for the purpose of advancing IPP/1.1 to full IETF Standard;

(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);

46 (d) IPP 2.0, 2.1, and 2.2 (IPP2X) (wd-ipp20-yyyymmdd) – define an errata update to IPP 2.0 Second  
47 Edition (PWG5100.12-2012) to address known errata, add missing attributes or values, and avoid  
48 increasing any conformance requirements for the purpose of advancing IPP/2.0 to full IEEE Standard;  
49

50 (e) IPP Implementor’s Guide v2.0 (IG) (wd-ippig20-yyyymmdd) – define update to IPP/1.1 Implementor’s  
51 Guide (RFC 3196) that specifies best practices for interoperability in implementations of IPP Client and  
52 IPP Printer software and considers all of the IETF and PWG IPP extensions published since 2000;  
53

54 (f) IPP Everywhere Printer Self-Certification Manual v1.0 (SELFCERT) (wd-ippeveselfcert10-yyyymmdd)  
55 – define IPP Everywhere Printer self-certification test procedures, the process required for registering the  
56 test results in order to use the PWG "IPP Everywhere " logo on a product, and a license agreement for the  
57 use of this logo;  
58

59 (g) IPP System Service v1.0 (SYSTEM) (wd-ippsystem10-yyyymmdd) – define an IPP System service that  
60 extends IPP Job and Printer Administrative Operations (RFC 3998) and provides **read-write** access to the  
61 status, configuration, description, counters, etc. defined in the PWG SM System object and PWG System  
62 Control Service, operations on Job Services, Resources, and Cloud registration, designed to be coherent  
63 with PWG SM System Control Service (PWG 5108.06-2012), PWG SM Resource Service (PWG 5108.03),  
64 and IPP Shared Infrastructure Extensions (INFRA);  
65

66 (h) IPP Shared Infrastructure Extensions (INFRA) (wd-ippinfra10-yyyymmdd) – define new IPP Client,  
67 IPP Proxy, and/or IPP Printer operations and attributes designed to support IPP-based network printing in  
68 Cloud, Software Defined Network (SDN), and other shared infrastructure environments;  
69

70 (i) IPP FaxOut Service v1.1 (FAXOUT) (wd-ippfaxout11-yyyymmdd) – define an errata update to IPP  
71 FaxOut Service v1.0 (PWG 5100.14-2014) to address known errata, add missing attributes or values, avoid  
72 increasing any conformance requirements, and align with PWG IPP Scan Service (PWG5100.SCAN);  
73

74 (j) IPP Transform Service v1.0 (XFORM) (wd-ippxform10-yyyymmdd) – define an IPP Transform service  
75 based on existing PWG SM Transform Service drafts and PWG F2F discussions, to extend the set of  
76 services supported by IPP System Service and IPP Everywhere Multifunction;  
77

78 (k) IPP Printer State Extensions v1.1 (PSX) (wd-ippstate11-yyyymmdd) – define an errata update to IPP  
79 Printer State Extensions v1.0 (PWG 5100.9-2009) to address known errata, add missing attributes or  
80 values, avoid increasing any conformance requirements, align with IPP Shared Infrastructure Extensions  
81 (PWG5100.INFRA), and submit IANA Printer TC registrations for new xxx-missing PrtAlertCodeTC  
82 values;  
83

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

92 (m) IPP Everywhere Multifunction v1.0 (EVEMFD) (wd-ippevemfd10-yyyymmdd) – define an update to  
93 IPP Everywhere v1.0 for multifunction devices that incorporates IPP 2.0, 2.1, and 2.2 (IPP2X), IPP  
94 Transaction-Based Printing Extensions, “ipps:” URI Scheme, LDAP Printer Schema, IPP JPS3, IPP  
95 Finishings v2.0, IPP Shared Infrastructure Extensions, IPP FaxOut, IPP Scan, IPP Transform, and IPP  
96 System Service.  
97

## 98 **Potential IPP WG Projects:**

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

100  
101 (a) TBD – define errata updates to IETF and PWG IPP protocol extensions as necessary, to address known  
102 errata, add missing attributes or values, and avoid increasing any conformance requirements;  
103

- 104 (b) TBD – define errata updates to IETF and PWG SNMP MIBs as necessary, to address known errata, add  
105 missing values, and avoid increasing any conformance requirements;  
106  
107 (c) IPP Concise – define a whitepaper on a new IPP Transport and Encoding (alternative to RFC 2910)  
108 optimized for smartphones, vehicles, embedded systems, and other Internet of Things devices that includes:  
109
  - 110 • rationale, use cases with feasibility and constraints (e.g., limited CPU/RAM and intermittent  
111 connectivity), and design requirements;
  - 112 • transport (w/out HTTP) via Transport Layer Security 1.2 (TLS) (RFC 5246) and Datagram TLS  
113 1.2 (DTLS) (RFC 6347) or later versions (see <https://datatracker.ietf.org/wg/tls/documents/>);
  - 114 • encoding in Concise Binary Object Representation (CBOR) (RFC 7049);
  - 115 • schema for operations, objects, and attributes in CBOR Data Definition Language (CDDL) (see  
116 IETF I-D draft-greevenbosch-appsawg-cbor-cddl);
  - 117 • potential non-IP network layer protocols, e.g. DTLS over cellular Short Message Service (SMS,  
118 aka “text messages”) (see IETF I-D draft-fossati-dtls-over-gsm-sms).  
119 (d) IPP 3D Printing – define a whitepaper on a new IPP 3D Printing extension.

## 120 **Out-of-scope:**

121 The following projects and activities are out-of-scope for the IPP WG:  
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- 123 • OOS-1 Definitions of new device discovery or service advertising protocols (except for updated  
124 LDAP Printer Schema above), although new profiles or subsets of existing device discovery or service  
125 advertising protocols are appropriate and encouraged.
- 126 • OOS-2 Definitions of new device management protocols (except for IPP System Service above),  
127 although new profiles or subsets of existing device management protocols are appropriate and  
128 encouraged.
- 129 • OOS-3 Definitions of new IPP transport bindings (except for IPP over HTTPS and potential IPP  
130 Concise above), although the design of IPP projects MUST NOT preclude additional transport  
131 bindings.
- 132 • OOS-4 Definitions of new work on the following potential IPP projects is suspended until use cases,  
133 editors, and interested vendors have been identified: IPP FaxIn Service.
- 134 • OOS-5 Definitions of new work on the following potential IPP projects is abandoned: IPP Copy  
135 Service, IPP EmailIn Service, IPP EmailOut Service.

## 136 **Objectives:**

137 The following objectives should guide all new IPP WG projects:  
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- 140 • OBJ-1 Optimize all IPP extensions for small memory and resource footprints for IPP Clients and IPP  
141 Printers.
- 142 • OBJ-2 Design all IPP extensions to allow for other future protocol bindings (e.g., Web Services,  
143 CBOR).
- 144 • OBJ-3 Design all IPP extensions to allow the use of vendor-neutral generic print software by IPP  
145 Clients.
- 146 • OBJ-4 Design all IPP extensions to allow ease of integration with shared infrastructure environments  
147 and Internet-based services.
- 148 • OBJ-5 Define the set of new IPP specifications enumerated in the current projects list in Problem  
149 Statement clause above.
- 150 • OBJ-6 Define errata, updates, and extensions to existing IETF and PWG IPP specifications and  
151 SNMP MIBs as necessary.  
152

## 153 Milestones:

### 154 Charter Stage:

- 155 • CH-1 Initial draft of IPP WG Charter – January 2015 – DONE
- 156 • CH-2 Stable draft of IPP WG Charter – Q1 2015
- 157 • CH-3 PWG Approval of IPP WG Charter

### 158 Definition Stage:

- 159
- 160 • URI-1 Initial draft of IPP over HTTPS and ‘ipps’ URI Scheme – Q3 2010 – DONE
- 161 • LDAP-1 Initial draft of updated LDAP Printer Schema – Q4 2011 – DONE
- 162 • IG-1 Initial draft of IPP Implementor’s Guide v2.0 – Q4 2012 – DONE
- 163 • INFRA-1 Initial draft of IPP INFRA – Q1 2013 – DONE
- 164 • SELFCERT-1 Initial draft of IPP Everywhere Self-Certification – Q2 2013 – DONE
- 165 • INFRA-2 Prototype draft of IPP INFRA – Q3 2013 – DONE
- 166 • SELFCERT-2 Prototype draft of IPP Everywhere Self-Certification – Q2 2014 – DONE
- 167 • IG-2 Prototype draft of IPP Implementor’s Guide v2.0 – Q2 2014 – DONE
- 168 • SYSTEM-1 Initial draft of IPP System Service v1.0 – Q3 2014 – DONE
- 169 • URI-2 IETF Last Call of IPP over HTTPS and ‘ipps’ URI Scheme – Q4 2014 – DONE
- 170 • LDAP-2 IETF RFC ISE review of LDAP Printer Schema – Q4 2014 – DONE
- 171 • IPP2X-1 Initial draft of IPP 2.0, 2.1, and 2.2 (for IEEE Standard) – Q1 2015
- 172 • IPP11-1 Initial drafts of IETF IPP/1.1 specs (for IETF Standard) – Q1/Q2 2015
- 173 • IPPSTATE-1 Initial draft of IPP Printer State Ext – Q1/Q2 2015
- 174 • MFDALERTS-1 Initial draft of MFD Alerts v1.1 – Q1/Q2 2015
- 175 • FAXOUT-1 Initial draft of IPP FaxOut v1.1 – Q1/Q2 2015
- 176 • IPP2X-2 Stable draft of IPP 2.0, 2.1, and 2.2 (for IEEE Standard) – PWG Formal Vote – Q2/Q3 2015
- 177 • IPPSTATE-2 Stable draft of IPP Printer State Ext – Call for Objections – Q2/Q3 2015
- 178 • MFDALERTS-2 Stable draft of MFD Alerts v1.1 – Call for Objections– Q2/Q3 2015
- 179 • SYSTEM-2 Prototype draft of IPP System Service v1.0 – Q3/Q4 2015
- 180 • FAXOUT-2 Stable draft of IPP FaxOut v1.1 – Call for Objections – Q2/Q3 2015
- 181 • IPP11-2 IETF Last Call of IETF IPP/1.1 specs (for IETF Standard) – Q3/Q4 2015
- 182 • XFORM-1 Initial draft of IPP Transform Service v1.0 – TBD
- 183 • XFORM-2 Prototype draft of IPP Transform Service v1.0 – TBD
- 184 • EVEMFD-1 Initial draft of IPP Everywhere Multifunction v1.0 – TBD
- 185 • EVEMFD-2 Prototype draft of IPP Everywhere Multifunction v1.0 – TBD

### 186 Implementation Stage:

- 187 • INTEROP-1 Interoperability testing of IPP Everywhere implementations – Q1/Q2 2015
- 188 • INTEROP-2 Interoperability testing of IPP INFRA implementations – Q4 2015
- 189 • INTEROP-3 Interoperability testing of IPP Scan Service implementations – Q4 2015
- 190 • INTEROP-4 Interoperability testing of IPP System Service implementations – Q1 2016
- 191 • INTEROP-5 Interoperability testing of IPP Transform Service implementations – TBD
- 192 • INTEROP-6 Interoperability testing of IPP Everywhere Multifunction implementations – TBD