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The Printer Working Group

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PWG Semantic Model/Schema
Extension and Revision Process

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22 **Version 0.02**
23 **March 22, 2004**

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29 # The Printer Working Group

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31
PWG Semantic Model and Schema

32 Extension and Revision Process

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34 **Version 0.02**

35 **March 22, 2004**

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41 Abstract: This document defines the process that guides and controls the extensions and revisions of the PWG
42 Semantic Model and associated Schema. This document covers both the formal extension of the Model and Schema
43 by approved by the PWG as well as the process for private extensions by vendors or sites.   Sections relating to
44 Intellectual Property and Confidentiality are taken directly from the PWG Standards Development Process [PWG-
45 Proc]. This is a process defining document, not an industry standard.

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47 This version of the PWG Semantic Model/Schema Extension and Revision Process is available electronically at:
48 ftp://ftp.pwg.org/pub/pwg/standards/process/pwg-sm-process-20040304.pdf, .doc

78   **About the IEEE-ISTO**

79   The IEEE-ISTO is a not-for-profit corporation offering industry groups an innovative and flexible operational forum
80   and support services. The IEEE-ISTO provides a forum not only to develop standards, but also to facilitate activities
81   that support the implementation and acceptance of standards in the marketplace. The organization is affiliated with
82   the IEEE (http://www.ieee.org/) and the IEEE Standards Association (http://standards.ieee.org/).

83   For additional information regarding the IEEE-ISTO and its industry programs visit http://www.ieee-isto.org.

84   **About the IEEE-ISTO PWG**

85   The Printer Working Group (or PWG) is a Program of the IEEE Industry Standards and Technology Organization
86   (ISTO) with member organizations including printer manufacturers, print server developers, operating system
87   providers, network operating systems providers, network connectivity vendors, and print management application
88   developers. The group is chartered to make printers and the applications and operating systems supporting them
89   work together better. All references to the PWG in this document implicitly mean "The Printer Working Group, a
90   Program of the IEEE ISTO." In order to meet this objective, the PWG will document the results of their work as open
91   standards that define print related protocols, interfaces, procedures and conventions. Printer manufacturers and
92   vendors of printer related software will benefit from the interoperability provided by voluntary conformance to these
93   standards.

94   In general, a PWG standard is a specification that is stable, well understood, and is technically competent, has
95   multiple, independent and interoperable implementations with substantial operational experience, and enjoys
96   significant public support.

97   For additional information regarding the Printer Working Group visit: http://www.pwg.org

98   **Contact information:**
99   Semantic Model Web Page: http://www.pwg.org/sm/
100   Semantic Model Mailing List: sm@pwg.org

101 To subscribe to the Semantic Model mailing list, send the following email:
102   1) send it to majordomo@pwg.org
103   2) leave the subject line blank
104   3) put the following two lines in the message body:
105   subscribe sm
106   end
107
108 Members of the PWG and interested parties are encouraged to join the Semantic Model Mailing List in order to
109 participate in any discussions of clarifications or review of the PWG Process.

110 Implementers of the PWG Semantic Model specification and associated Schema are encouraged to join the
111 Semantic Model Mailing List in order to participate in any discussions of clarifications or review of registration
112 proposals for additional names. Requests for additional extensions, for inclusion in this specification, should be sent
113 to the Semantic Model Mailing list for consideration.

114 # Contents

129

130 # 1 Introduction

131 This document establishes the process that is followed to extend or revise the PWG Semantic Model or its
132 associated Schema. The Printer Working Group (or PWG) is a Program of the IEEE Industry Standards and
133 Technology Organization (ISTO) and is an alliance among printer manufacturers, print server developers, operating
134 system providers, network operating systems providers, network connectivity vendors, print and print management
135 application developers chartered to make printers and the applications and operating systems supporting them work
136 together better. All references to the PWG in this document implicitly mean "The Printer Working Group, a Program
137 of the IEEE ISTO."   In order to meet this objective, the PWG will document the results of their work as open
138 standards that define print related protocols, interfaces, procedures and conventions. Printer manufacturers, vendors
139 of printer related software and the consuming public will benefit from the interoperability provided by voluntary
140 conformance to these standards.
141
142 The PWG Semantic Model and associated Schema specifies a stable, well understood, technically competent and
143 has multiple, independent implementations with substantial operational experience, demonstrated interoperability
144 and significant public support. In developing this standard, the Semantic Model Working group of the PWG defined
145 durable documents covering the abstract Semantic Model and an associated Schema at persistent URLs.
146
147 This process document establishes
148   1.   The maintenance stage of the PWG Semantic Model and associated Schema.
149   2.   Versioning of the Semantic Model and Schema
150   3.   The process for Public (i.e. PWG approved) and Private extensions to the PWG Semantic Model and
151   associated Schema
152
153 This document can be updated and a new version can be produced following the Formal PWG Approval process.
154

155 ## 1.1 PWG Semantic Model Meetings

156 It is common to hold face-to-face meetings every 6 to 10 weeks with phone and web based conferencing during the
157 interim. Meeting location details are published in advance of meetings as are the agenda for the working groups that
158 will meet. The Semantic Model will meet when warranted. New documents must be introduced at least a week prior
159 to a face-to-face. Telephone and web based conferences are held as needed and announced on the Semantic Model
160 mailing list. Decisions made at PWG administrative, business, or plenary meetings require a simple majority, 1 vote
161 per member organization.
162
163 Dial-up and web conference details, agenda and reference materials are to be published at least 48 hours in
164 advance when work is being conducted via remote conferencing.
165

166 ## 1.2 PWG Semantic Model Communications Infrastructure

167 The PWG Semantic Model Working Group will maintain
168   1.   A page on the PWG web site (http://www.pwg.org/sm) where the working group information, and document
169   links and other pertinent information may be found.
170   2.   A PWG ftp site (ftp://ftp.pwg.org/pub/pwg/Semantic-Model/) where PWG Semantic Model and associated
171   Schema working drafts, standards, procedures, schema, templates and other useful and necessary
172   documents may be accessed.
173   3.   An e-mail reflector (sm@pwg.org), and an archive (http://www.pwg.org/hypermail/sm/) .
174

175 2   Overview of Maintenance and Extension

176 There are 3 main phases to standards development in the PWG – Charter, Development and Maintenance. The
177 PWG Semantic Model and associated Schema are in the Maintenance phase. In this phase clarifications and errors
178 that are discovered will be corrected and any extensions or registrations will be made. See the following two
179 sections for details on how these apply to the PWG Semantic Model and its associated Schema.
180 The Semantic Model Editor for each document will be responsible for reflecting the decisions of the working group,
181 rather than their own personal views. Ultimately, the editor has responsibility for the quality of the document, making
182 sure that it is readable and has a coherent style, even when it has multiple authors or contributors.

183 2.1   PWG Semantic Model Specification

184 The PWG Semantic Model Specification is expected to be updated from time to time. Minor updates must maintain
185 upward and downward compatibility and require a minor version change. Updates that prevent upward or downward
186 interoperability require a major version change and should occur rarely. Change requests will be discussed,
187 approved and collected in a Working Draft until the Working Group feels it is time to revise the official specification.
188 The details discussed below.

189 2.2   PWG Schema

190 The PWG Schema is expected to be extended and updated. Extensions can be made in private namespaces or in
191 the PWG namespace. Details on this are below. The Schema contains a registry of PWG approved keywords. Any
192 approved extensions will be immediately placed in the appropriate file. After approval and testing, the extensions will
193 be incorporated into the Schema itself. As long as upward and downward interoperability are maintained the
194 namespace for the Schema will not change. Each file contains an attribute that specifies its version. This version
195 number will be incremented each time a change is made.

196 2.3   PWG Semantic Model and Schema relationship

197 The Semantic Model specification and the Schema are closely related. The elements and their values in the Schema
198 are described in the Semantic Model Specification. Furthermore the Semantic Model Specification only provides a
199 summary on the elements and values in the Semantic Model. The detailed description is provided in an external
200 document and referenced in the PWG Semantic Model Specification. The external document can take many forms.
201 Examples include PWG IPP Specifications, any standards body specification (e.g. IEEE, PWG, IETF, ISO, IANA), or
202 a white paper or technical brief created specifically for the extension. Even a mail note is acceptable if it meets the
203 criteria outlined in section 4.2. Note that mail notes, white papers and technical briefs will be collected into a single
204 document to simplify semantic references when the Semantic Model specification is updated.

205 3   Maintenance

206 Many PWG standards are extensible and provide the ability for additional keyword or enumerated values to be
207 registered. When approved, these have the same status as the standard to which the feature is being added. In
208 addition, as implementation work proceeds, clarifications may be required to guarantee interoperability. This section
209 addresses the process to be followed for:
210 •   registrations of new operations and type 2 enums, keywords, and attributes, and
211 •   clarifications of the standard and any approved registrations
212 Major changes or additions to a standard are not considered maintenance, but require engagement of the PWG
213 standards development process described above.
214
215 Proposals for registrations and clarifications will follow the following process:
216 1. Each WG will appoint a Maintenance Editor for their PWG Standard.
217 2. Anyone can initiate a proposal for a clarification or registration by starting a discussion on the appropriate project
218   mailing list.

219   3. After there is some agreement on the mailing list for the need of a clarification or the suitability of a registration,
220   the proposer and the standard's Maintenance Editor work out a proposal. Such a proposal should include:
221   •   Status of the proposal, including previous reviews.
222   •   A description of the requirement being met or the problem being solved.
223   •   Description of the proposed solution.
224   •   The exact text to be incorporated into the standard at some future date.
225   4. To make the status of proposed registrations and clarifications clear to PWG participants and others, the
226   Maintenance Editor will keep them in the appropriate sub-directory
227   ftp://ftp.pwg.org/pub/pwg/xxx/proposed-registrations
228   ftp://ftp.pwg.org/pub/pwg/xxx/proposed-clarifications
229   where xxx is the project.
230   5. All proposals must be published according to section **Error! Reference source not found.** of this document.
231   6. Reviews of proposed registrations and clarifications may occur at a meeting or on the MAILING LIST.
232   7. The proposal will undergo sufficient reviews and updates until, in the opinion of the WG Chair, there is rough
233   consensus that the proposal is ready for Last Call as described in section **Error! Reference source not found.**
234   followed by Formal Approval as described in section **Error! Reference source not found.**.
235   8. If, in the opinion of the WG Chair, the Last Call discussions and Formal Approval meet the voting requirements
236   described in section **Error! Reference source not found.**, the Maintenance Editor will move the approved
237   registration or clarification to the appropriate sub-directory for each project
238   ftp://ftp.pwg.org/pub/pwg/xxx/approved-registrations
239   ftp://ftp.pwg.org/pub/pwg/xxx/approved-clarifications
240   and announce the Formal Approval to the entire PWG via the PWG-ANNOUNCE MAILING LIST.
241   9. Periodically, the Maintenance Editor will incorporate the approved registrations and clarifications into the version
242   of the standard that the PWG keeps to record all approved registrations and clarifications. Such an updated
243   version of the standard will have a new minor version of the standard, along with a Change History Appendix that
244   lists each change.

245   4   PWG Semantic Model and Schema Extensions

246   The PWG Semantic Model and associated Schema are extensible and intended to be extended to meet the needs of
247   the industry. When approved, these semantic elements or values have the same status as the PWG Semantic
248   Model and Schema. In addition, as implementation work proceeds, clarifications may be required to guarantee
249   interoperability. Section 3 covers maintenance in general. This section addresses PWG Semantic Model and
250   Schema extension specific aspects.
251   The PWG Semantic Model and associated Schema are also vendor and site extensible (see below). These private
252   vendor and site extensions require no formal PWG approval process. It is recommended that vendor publish their
253   extensions through the PWG and petition to make them PWG endorsed extensions.
254   Major changes or additions to a are defined as any changes that prevent upward and downward interoperability.
255   Major changes require engagement of the PWG standards development process described above.

256   4.1   Federation of vendor extensions (Namespace)

257   Any vendor or site is permitted to extend the PWG Schema. Extensions are federated through the use of
258   namespaces. Any new semantic element or value MUST be qualified by the extendor's namespace. The only
259   exception to this are the values for elements that have a specific pattern for extensions. The exceptions are
260   MediaColor, MediaType, MediaSizeName, OperatingSystemName and OutputBin. Vendors are responsible for
261   managing their own namespace to prevent collisions. When an extension is approved by the PWG the element or
262   value will be in the PWG namespace.
263   The PWG's namespace for the Semantic Model Schema (i.e. http://www.pwg.org/schemas/sm/1.0/) is expected to
264   remain constant. The PWG Schema was designed as an Open Content schema. An open content schema is one
265   that allows instance documents to contain additional elements beyond what is declared in the schema. The PWG
266   Schema implements Localized Openness that allows extension at specific points. The namespace for the PWG
267   Schema needs to remain constant and change infrequently to foster deployment. The namespace for the PWG
268   Schema will only change when aq major change is required that prevents upward or downward interoperability.

269　To accommodate minor updates each schema file contains the *schema* element with an attribute that specifies the
270　version. The *version* attribute will be incremented each time a PWG approved extension is added. Note that the
271　namespace does not change but by examining the schema file the exact version can be determined.

272　## 4.2 PWG Semantic Model and Schema Extension Process

273　Proposals for extensions will follow the following process:
274　1. Anyone can initiate a proposal for an extension by starting a discussion on the Semantic Model mailing list.
275　2. After there is some agreement on the mailing list for the suitability of the extension, the proposer creates a
276　　　proposal. Such a proposal should include:
277　　　　• 　Status of the proposal, including previous reviews.
278　　　　• 　A description of the requirement being met or the problem being solved.
279　　　　• 　Description of thenes semantic element(s) or value(s).
280　　　　• 　The exact text to be incorporated into the PWG Semantic Model specification at some future date.
281　　　　• 　The exact XML Schema fragment to be included in the updated Schema
282　3. To make the status of proposed extensions clear to PWG participants and others, the Maintenance Editor will
283　　　keep them in the ftp://ftp.pwg.org/pub/pwg/sm/proposed-registrations sub-directory
284　4. All proposals must be published according to section **Error! Reference source not found.** of this document.
285　5. Reviews of proposed extensions may occur at a meeting or on the MAILING LIST.
286　6. The proposal will undergo sufficient reviews and updates until, in the opinion of the SM Chair, there is rough
287　　　consensus that the proposal is ready for Last Call as described in section **Error! Reference source not found.**
288　　　followed by Formal Approval as described in section **Error! Reference source not found.**.
289　7. If, in the opinion of the SM Chair, the Last Call discussions and Formal Approval meet the voting requirements
290　　　described in section **Error! Reference source not found.**, the Maintenance Editor will move the approved
291　　　extension to the ftp://ftp.pwg.org/pub/pwg/sm/approved-registrations sub-directory and update the appropriate
292　　　schema file.
293　　　The SM Chair will announce the Formal Approval and updates to the entire PWG via the PWG-ANNOUNCE
294　　　MAILING LIST.
295　8. Periodically, the Maintenance Editor will incorporate the approved extensions, registrations and clarifications into
296　　　the PWG Semantic Model Specification. Such an updated version of the standard will have a new minor version
297　　　of the standard, along with a Change History Appendix that lists each change.
298
299

300　# 5   Intellectual Property and Confidentiality

301　Confidentiality, IP rights, Intellectual Property Procedures and Patent Statement policies are covered in the PWG
302　Standards Development Process specification [PWG-Proc]. The Semantic Model maintenance and extensions
303　conform to those policies.
304

305　# 6   References

306　[PWG5105.1] IEEE-ISTO 5105.1-2004, "The Printer Working Group(PWG) Semantic Model", January 20, 2004, T.
307　　　　Hastings, S. Albright, and P. Zehler, ftp://ftp.pwg.org/pub/pwg/standards/pwg5105.1.pdf

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309　　　　Hall, and H. Lewis, ftp://ftp.pwg.org/pub/pwg/standards/pwg510X.X.pdf

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