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The Printer Working Group

PWG Policy

Definition of the Standards Development Process



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Version 2.0
February 25, 2004

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February 25, 2004**

Abstract: This document defines the standards development process that guides and controls the work of the IEEE-ISTO Printer Working Group, an organization developing open standards for the Print, Imaging, MFP and related Services industries. This document organizes the flow of standards creation from Brainstorming, Requirements gathering and Charter definition through Working Drafts, Candidate Standards and Standards. Herein are the guidelines for conducting Last Call, assuring interoperability and establishing levels of formal approval. PWG Process v2.0 builds on the original PWG Process document but has been rewritten for greater clarity. Sections relating to Intellectual Property and Confidentiality are unaltered but the overall process has been streamlined, compared to the original, and sound file naming and document versioning guidelines defined. This is a process defining document, not an industry standard.

This version of the PWG Standards Development Process is available electronically at:
<ftp://ftp.pwg.org/pub/pwg/standards/process/pwg-process20-20040225.pdf>, .doc

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85 and support services. The IEEE-ISTO provides a forum not only to develop standards, but also to facilitate activities
86 that support the implementation and acceptance of standards in the marketplace. The organization is affiliated with
87 the IEEE (<http://www.ieee.org/>) and the IEEE Standards Association (<http://standards.ieee.org/>).

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

89 About the IEEE-ISTO PWG

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

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

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

103 Contact information:

104 PWG Web Page: <http://www.pwg.org/>
105 PWG Mailing List: pwg@pwg.org

106 To subscribe to the PWG mailing list, send the following email:

- 107 1) send it to majordomo@pwg.org
- 108 2) leave the subject line blank
- 109 3) put the following two lines in the message body:
110 subscribe pwg
111 end

112
113 Members of the PWG and interested parties are encouraged to join the PWG Mailing List in order to participate in
114 any discussions of clarifications or review of the PWG Process.

115

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166 **1 Introduction**

167 This document establishes the process that is followed as open industry standards are developed by the IEEE ISTO
168 Printer Working Group. The Printer Working Group (or PWG) is a Program of the IEEE Industry Standards and
169 Technology Organization (ISTO) and is an alliance among printer manufacturers, print server developers, operating
170 system providers, network operating systems providers, network connectivity vendors, print and print management
171 application developers chartered to make printers and the applications and operating systems supporting them work
172 together better. All references to the PWG in this document implicitly mean "The Printer Working Group, a Program
173 of the IEEE ISTO." In order to meet this objective, the PWG will document the results of their work as open
174 standards that define print related protocols, interfaces, procedures and conventions. Printer manufacturers, vendors
175 of printer related software and the consuming public will benefit from the interoperability provided by voluntary
176 conformance to these standards.
177

178 A PWG standard is a specification that is stable, well understood, technically competent and has multiple,
179 independent implementations with substantial operational experience, demonstrated interoperability and significant
180 public support. The PWG may issue a standard as a PWG standard and/or when appropriate submit the standard to
181 other standards organizations, such as the IETF, ISO, ITU, W3C, IEEE, or ECMA. In developing a standard, a
182 working group of the PWG may define durable documents such as WSDL, Schema or common industry semantics
183 that need to have well known, persistent filenames and file paths.
184

185 This process document establishes

- 186 1. The stages, or maturity levels a standard will go through from Charter and Requirements through Drafts,
187 Candidates and Standard to the final, Maintenance stage of an established standard.
- 188 2. Working documents naming and versioning
- 189 3. Standards naming and numbering
- 190 4. File name and path conventions for durable documents such as WSDL and schema.
191

192 This document can be updated and a new version can be produced. As long as section 11 is not modified, the new
193 version must be approved through the Formal Approval process described in section 8.2.1. If section 11 is modified,
194 100% of all PWG members must approve the new document (abstentions/non-votes are not allowed).

195 **2 Organization of the PWG**

196 The Printer Working Group is composed of representatives from printer manufacturers, print server developers,
197 operating system providers, network operating system providers, network connectivity vendors, and print and print
198 management application developers. Member organizations are those companies, individuals or other groups (i.e. a
199 university) that have agreed to participate and operate under the processes and procedures of the ISTO by-laws, the
200 ISTO-PWG Program Participation Agreement and this document and have paid the annual assessment. Multiple
201 individuals employed by the same company or other organization cannot join the PWG as individual members.
202 Associates or affiliates of member organizations which are beneficially controlled or owned by said member
203 organization with more than fifty percent (50%) of the voting stock or equity shall not be considered a separate entity
204 and are not eligible for separate membership in the PWG. The annual assessment is set each year by the PWG
205 itself.
206

207 **2.1 PWG Officers**

208 The PWG has a Chair position responsible for organizing the overall agenda of the PWG. The PWG chair is elected
209 in odd numbered years by a simple majority of the PWG members to a two-year term of office that begins on
210 September 1st. Responsibilities of the PWG chair include creating working groups, appointing working group chairs,
211 assuring that working groups maintain adequate leadership, making local arrangements for PWG meetings (this may

212 be delegated as appropriate), setting the high level PWG agenda, chairing the PWG plenary session, ensuring that
213 the PWG web and FTP site are maintained (see section 4.10), and assisting working group chairs to accomplish their
214 tasks. The PWG Chair must be a representative of a PWG Member Organization. The PWG Chair is an ex officio
215 member of all working groups.
216

217 The PWG Vice Chair is elected in odd numbered years by a simple majority of the PWG members to a two year term
218 of office, beginning September 1st. The Vice Chair's responsibilities are to act in the absence of the chair and
219 provide assistance to the Chair in carrying out his or her role, as required. The PWG Vice Chair must be a
220 representative of a PWG Member Organization. The PWG Vice Chair is an ex officio member of all working groups.
221

222 The PWG Secretary is elected in odd numbered years to a two-year term of office by a simple majority of the PWG
223 members. It is the Secretary's responsibility to record and distribute the minutes of all PWG plenary sessions and
224 other meetings, as required, to support the PWG chair. The PWG Secretary must be a representative of a PWG
225 Member Organization. The PWG Secretary is responsible, in cooperation with the IEEE ISTO, for managing number
226 blocks for standards naming and maintaining a PWG Member Organization roster including contact information and
227 company profile information, including logo, as it pertains to representation on the PWG web site.
228

229 The PWG Steering Committee is composed of the PWG Chair, Vice Chair, Secretary, and chairs of all active working
230 groups. The Steering Committee shall meet upon the call of the PWG Chair or by a majority of its members to
231 discuss matters of concern of the PWG. Where matters come to a vote in the Steering Committee, decisions are
232 made by simple majority of the entire committee (abstentions/non-votes are counted as no votes), with one vote per
233 person.

234 **2.2 Working Group Officers**

235 Under the PWG Chair are a number of working groups (WG), which are chartered for the purpose of developing a
236 specific standard. Working groups are chartered as required to address specific areas of standardization. A working
237 group is considered active until it satisfies its charter or is otherwise terminated by the Working Group Chair with the
238 agreement of the Steering Committee.
239

240 The Chair of a WG is appointed by the PWG Chair, with approval (simple majority) at a PWG plenary. The WG
241 Chair's term is indefinite and would normally extend through the period of time during which there is active
242 maintenance on the standard(s) developed by the working group. The Working Group Chair must be a representative
243 of a PWG Member Organization. The working group Chair is responsible for appointing a Vice Chair and Secretary
244 for the WG, creating the WG Charter, setting the agenda for meetings of the WG, chairing WG meetings, appointing
245 editors for WG documents, driving the work of the WG to completion, and reporting status of the WG at PWG plenary
246 sessions.
247

248 The Vice Chair of a WG is appointed by the WG chair, with approval (simple majority) of the WG. The WG Vice
249 Chair's term is indefinite. The Vice Chair acts in the absence of the Chair and assists, as appropriate, in carrying out
250 the responsibilities of the Chair.
251

252 A WG Secretary is appointed by the WG Chair, with approval (simple majority) of the WG. The term of office is
253 indefinite. The responsibilities of the Secretary are to record and distribute minutes of working group meetings and to
254 record attendance for members of that working group.

255 **2.3 PWG Meetings**

256 The annual face-to-face meeting schedule for the PWG is set in October of each year. As a guideline, it is common
257 to hold face-to-face meetings every 6 to 10 weeks with phone and web based conferencing during the interim. Face-
258 to-face meetings are to be distributed geographically to try and distribute the travel burden among members. Meeting
259 schedule and locations are determined through a proposal / consensus process and no other specific process or
260 guarantees are implied. Meeting location details are to be published at least 4 weeks in advance of meetings. New
261 documents must not be introduced under any circumstances less than 1 week prior to a face-to-face as this only
262 leads to confusion and ineffective meeting results. Decisions made at PWG administrative, business, or plenary
263 meetings require a simple majority, 1 vote per member organization.

264
265 Dial-up and web conference details, agenda and reference materials are to be published at least 48 hours in
266 advance when work is being conducted via remote conferencing.
267

268 **2.4 PWG Communications Infrastructure**

269 The PWG will maintain
270 1. A PWG web site <http://www.pwg.org> where PWG working group information, meeting schedules and
271 document links and other pertinent information may be found.
272 2. A PWG ftp site <ftp://ftp.pwg.org> where PWG working drafts, standards, procedures, schema, templates and
273 other useful and necessary documents may be accessed.
274 3. An e-mail reflector, including archive, for each active project.
275

276 **3 PWG Standards development and maintenance**

277 There are 3 main phases to standards development in the PWG – Charter, Development and Maintenance (Table 1).
278 These phases are a guideline to the activities and types of documents a working group should expect to encounter.
279 There are no specific exit criteria from these phases. Exit criteria apply to PWG Standards documents and are
280 outlined in section 4.
281
282
283
284

285 **Table 1 - Three Phases to developing a PWG Standard**

Phase	Activities in this Stage	Internal Documents	PWG Standards Documents
Charter	Identify need Brainstorm Develop Charter Gather Requirements	White Papers	Charter Requirements Statement Preliminary Working Draft
Development	Develop PWG Working Drafts Prototype Promote to Candidate Standard Demonstrate Interoperability Promote to PWG Standard	White Papers Proposals Developer Guides Interop Test Plans	PWG Working Drafts Candidate Standards Supporting durables such as WSDL, Schema
Maintenance	Maintain PWG Standard	Errata Registration of new keywords, enums	Standard Supporting durables

286

287 **4 Formal PWG standards-track publications**

288 Standards development is guided, largely, by the progression of documents used to define and articulate the
289 Standard. Formal documents consist of the Charter, a set of Requirements, Working Drafts, Candidate Standards

290 and, ultimately, the Standard, itself. Due to their highly influential nature, informative documentation of Best Practice
291 is also treated as a formal document. Publication of these formal PWG standards-track documents requires Last Call
292 and/or Formal Approval (vote) by the membership of the PWG as described in Section 8. The standards process
293 may be augmented by a set of informal technical briefs and proposals reading on the standard. While helpful and
294 encouraged, these are not treated as formal documents and do not require formal approval. Standards-track
295 publications and the criteria for exit are defined below. Because the synchronization of Standard version, standard
296 document maturity, document naming, support file namespace and file path names can be quite complex, Table 3
297 provides an example of how these items are orchestrated throughout the standards process.

298 **4.1 Editing Documents**

299 The Working Group Chair will appoint an editor for each standards-track document. The editor will be approved by a
300 simple majority vote of the working group. Normally an editor will work in this capacity throughout the life cycle of the
301 standard, although exceptions may occur. Editors are responsible for reflecting the decisions of the working group,
302 rather than their own personal views. Ultimately, the editor has responsibility for the quality of the document, making
303 sure that it is readable and has a coherent style, even when it has multiple authors or contributors.

304 **4.2 Organizing and Naming Documents**

305 Early versions of a Working Group Charter, Requirements, whitepapers and other supporting documentation may
306 circulate on the pwg@pwg.org e-mail reflector. Once a Working Group is formalizing their Charter and Requirements
307 and, certainly, by the time an initial Working Draft is in progress, the Working Group will have chosen an abbreviation
308 (usually 2 to 4 characters) which will be used to preface their document names. The Working Group can pick the
309 abbreviation which is subject to approval by the PWG Steering Committee.
310

311 **4.3 Working Group Charter**

312 The first order of business for any working group is to create a charter that clearly describes the scope of their work.
313 Brainstorming, fact finding, guest speakers and other enlightening activities often precede or coincide with Charter
314 development. In addition to scope, the Charter should define milestones and schedule, including an expiration date.
315 Extensions may be granted by the PWG Steering Committee, based on perception of progress and commitment of
316 the working group. In some cases the working group may choose to publish their standard in affiliation with an
317 outside standards organization such as the IETF or W3C. If this is evident, the Charter should indicate the desire for
318 formal affiliation with another standards organization and include a liaison plan with the other organization. Charter
319 definition, requirements gathering and outlining a preliminary Working Draft may occur simultaneously. In many
320 cases, this is encouraged, as new information gleaned from these activities may alter perception of the Charter.
321

322 A Working Group Charter requires Formal Approval (see Section 8).

323 **4.4 Statement of Requirements**

324 Prior to completion of the first Working Draft, a clear statement of requirements for the standard to be produced is
325 required. A requirements statement documents the best effort collection of known requirements on a particular
326 protocol, interface, procedure or convention. The requirements statement is important as it leads to a clear, common
327 understanding of the goals, provides a guide for developing the standard, and can be used as a final test to measure
328 the completeness of the resulting specification. It is not necessary that the resulting standard meet every stated
329 requirement, but the standard should be explicit about which requirements it does not meet, and why. Requirements
330 may be updated during the development of the standard, as they become clearer. As with Charter (above),
331 brainstorming, fact finding and associated activities frequently accompany the process of requirements gathering.
332 Often, at the beginning of a project, the Charter, Requirements and early versions of an initial Working Draft are all
333 undergoing simultaneous revision until a clear direction emerges and the Charter and Requirements are formally
334 approved.
335

336 A Working Group Statement of Requirements requires Formal Approval (see Section 8).
337

338 **4.5 Working Draft**

339 When rough consensus has been reached on the Charter, Requirements and general approach, and there is
 340 sufficient information to begin writing a standard, the initial Working Draft will be written. Charter and Requirements
 341 must be formally approved prior to completion of the first Working Draft. A PWG Working Draft facilitates reaching
 342 consensus on how to approach the PWG Standard and provides a backdrop for discussion and agreement on details
 343 of the specification. The initial Working Draft should be reasonably complete and drives a stake in the ground as the
 344 basis for further work on the Standard.

345
 346 Working Drafts correspond to a specific version of the Standard they are defining. Unless the working group is
 347 engaged in an effort to revise an existing PWG Standard, the Working Drafts are always defining PWG Standard
 348 Version 1.0.

349
 350 A PWG Working Draft cannot progress ahead of any given normative reference that it contains.

351
 352 A PWG Working Draft requires Last Call, and Formal Approval to transition to PWG Candidate Standard.
 353

354 **4.5.1 Maturity Level**

355 In the interest of providing some subjective indication of the maturity of a PWG Working Draft, a Maturity Level will
 356 appear on the title page as:

357 Maturity: <keyword>
 358

359 Although the maturity level will not appear on PWG Candidate Standards or PWG Standards, if a Candidate
 360 Standard needs to be revised, any resulting PWG Working Drafts will have a maturity level indicated on their title
 361 page.

362 **Table 2 – Maturity Level keywords**

<i>Maturity Level keyword</i>	<i>Indicates</i>
Initial	Initial attempt to specify the standard.
Interim	Standard in development. Significant changes to the standard expected in the future.
Prototype	Content of the standard is functionally complete and ready for prototyping.
Stable	Standard is very close to completion. Standard is either getting ready for, is in, or has completed Last Call.

363
 364 Normally, the Working Drafts of a standard would progress from “Initial” to “Stable” in stages, although stages could
 365 be skipped for small standards efforts. However, it is possible for the Working Drafts to become less mature: if a
 366 large problem was found in a standard that was considered “Prototype”, it might have to go back to “Interim” while
 367 that problem is solved. Note also that for all four maturity levels, multiple, consecutive Working Drafts might have the
 368 same maturity level.

369
 370 The current maturity level of a Working Draft will be decided upon by the working group.

371
 372 Table 2 above should appear in the “boilerplate” of every Working Draft as a handy reference for readers to
 373 understand the significance of the maturity level keyword on the title page.

374 **4.6 Candidate Standard**

375 When agreement has been reached among the participants about the details of a Standard, the current Working
 376 Draft is ready to transition to a PWG Candidate Standard. A Candidate Standard should not be approved unless it is
 377 supported by prototypes and thought to be ready for implementation. A PWG Candidate Standard forms the basis for
 378 comments from outside of the working group and the PWG, and provides the foundation for initial product
 379 development and interoperability testing. Implementations can comfortably proceed from a PWG Candidate

380 Standard, knowing that it will not undergo significant change as it matures to a PWG Standard. However, should
381 changes to a Candidate Standard be necessary, these changes will be accomplished via Working Drafts that must
382 once again go through Last Call and Formal Approval. The Working Draft will then and only then regain Candidate
383 Standard status.
384

385 Candidate Standards correspond to a specific version of the Standard they are defining. Unless the working group is
386 engaged in an effort to revise an existing PWG Standard, the Candidate Standards are always defining PWG
387 Standard Version 1.0.
388

389 When a document becomes a Candidate Standard, it is assigned an IEEE-ISTO standard number, which it keeps
390 forever. To indicate the standard is at Candidate Standard status, the prefix "CS" is attached to the standard
391 number, resulting in a number such as "PWG CS 5105.2". If the Candidate Standard goes back to Working Draft
392 status, the prefix "CS" is replaced by "WD", resulting in a number such as "PWG WD 5105.2". IEEE-ISTO standard
393 numbers are tracked and assigned by the PWG Secretary.
394

395 A PWG Candidate Standard cannot progress ahead of any given normative reference that it contains.
396
397

398 A PWG Candidate Standard requires Last Call, demonstration of Interoperability and Formal Approval to transition to
399 PWG Standard.
400

401 **4.7 Standard**

402 When a PWG Candidate Standard has passed Last Call, demonstrated interoperability and acquired Formal
403 Approval, it is promoted to the final status of a PWG Standard. At this point, the prefix "CS" is replaced by "STD" in
404 the IEEE-ISTO standard number and "PWG" is replaced by "IEEE-ISTO", resulting in a number such as "IEEE-ISTO
405 STD 5105.2".

406 **4.8 Extensions to standards**

407 When a document has reached the PWG Candidate Standard or PWG Standard status, documents can be written
408 that are extensions to that standard. Such extension documents start immediately at Working Draft status and then
409 follow all rules above for progression to Candidate Standard and Standard. Note that the extension to a Candidate
410 Standard cannot progress to Standard before the Candidate Standard it is extending has progressed to Standard.
411

412 It is also possible that the PWG will decide to formalize PWG extensions for any (IETF, IEEE, or other printing
413 industry) external standard (e.g. RFC2911). As above, such extension documents start immediately at Working Draft
414 status and then follow all rules in earlier sections above for progression to Candidate Standard and Standard.

415 **4.9 Best Practices**

416 Best Practice documents, while not normative, are often heavily referenced during implementation. Because we want
417 Best Practice to be reliable and accurate we treat these as formal Working Group documents that under go naming,
418 Last Call and Formal Approval just like a Working Draft.

419 **4.10 FTP site procedures**

420 Table 3 below illustrates both the filename and the location on the PWG FTP site to be used for every version of a
421 document. Because it is not always straightforward for a reader to find the latest version of a document, an
422 additional directory will be created on the FTP site for each working group, and the latest version of all documents
423 will be located there, with a durable URL. To go along with the example used in Table 3, the durable URL would be:
424 <ftp://ftp.pwg.org/pub/pwg/xyz/xyz10-latest.doc>

425 Therefore, for every row in Table 3, the new version of the document would be stored with the filename and location
426 shown in the table, *and also* would be stored with the filename and location of the durable URL.
427

428 An additional procedure to be followed on the FTP site is that in both the 'ftp://ftp.pwg.org/pub/pwg/candidates' and
429 'ftp://ftp.pwg.org/pub/pwg/standards' directories, an index file (index.txt) will be added that lists all standards
430 contained in the directory. Due to the fact that the files that correspond to published Candidate Standards and
431 Standards will remain in these directories forever, the index file will list the current status of each standard, so that
432 readers can realize at least the following:

- 433 • A Candidate Standard has been modified and is currently being worked on as a Working Draft.
- 434 • A Candidate Standard has transitioned to Standard.

435 A new version of a Standard is currently being worked on (e.g. version 1.0 of the Standard is in the FTP directory, but
436 version 1.1 is currently being worked on).

In Filename	X	X	X			X		
In Path			X		(For WSDL)			
On title page	X	X		X		X	X	X
Publication	Spec Ver	Spec Doc Revision	Status	Maturity Level	WSDL Interface File / Ver	PWG Num	Document Filename *	Document Path
Working Draft	XYZ 1.0	2002/01/01	WD	Initial	2002/01/01	N/A	wd-xyz10-20020101.doc	ftp://ftp.pwg.org/pub/pwg/xyz/wd/
Working Draft	XYZ 1.0	2002/01/15	WD	Interim	2002/01/15	N/A	wd-xyz10-20020115.doc	ftp://ftp.pwg.org/pub/pwg/xyz/wd/...
Working Draft	XYZ 1.0	2002/07/15	WD	Prototype	2002/07/15	N/A	wd-xyz10-20020715.doc	ftp://ftp.pwg.org/pub/pwg/xyz/wd/...
Working Draft - Last Call, Formal Approval	XYZ 1.0	2003/02/07	WD	Stable	2003/02/07	N/A	wd-xyz10-20030207.doc	ftp://ftp.pwg.org/pub/pwg/xyz/wd/...
Candidate Standard	XYZ 1.0	2003/02/21	CS	N/A	2003/02/07	PWG CS 510n.m	cs-xyz10-20030221-510nm.doc	ftp://ftp.pwg.org/pub/pwg/candidates/...
Working Draft, no interface changes	XYZ 1.0	2003/03/01	WD	Prototype	2003/02/07	PWG WDWD 510n.m	wd-xyz10-20030301-510nm.doc	ftp://ftp.pwg.org/pub/pwg/xyz/wd/...
Working Draft, * interface change	XYZ 1.0	2003/03/15	WD	Prototype	* 2003/03/15	PWG WDWD 510n.m	wd-xyz10-20030315-510nm.doc	ftp://ftp.pwg.org/pub/pwg/xyz/wd/...
Working Draft, no interface change - Last Call, Formal Approval	XYZ 1.0	2003/04/15	WD	Stable	2003/03/15	PWG WDWD 510n.m	wd-xyz10-20030415-510nm.doc	ftp://ftp.pwg.org/pub/pwg/xyz/wd/...
Candidate Standard – Interop Last Call, Formal Approval	XYZ 1.0	2003/06/20	CS	N/A	2003/03/15	PWG CS 510n.m	cs-xyz10-20030620-510nm.doc	ftp://ftp.pwg.org/pub/pwg/candidates/...
Standard	XYZ 1.0	2003/08/20	STD	N/A	2003/03/15	IEEE-ISTO STD 510n.m	std-xyz10-20030820-510nm.doc	ftp://ftp.pwg.org/pub/pwg/standards/...

437 Table 3 - Sample flow of documents including versions and naming

438

439 * **Note:** In the filenames above, the substring “xyz10” is: [project][spec][version]. For version 1.0 of the main spec for the “xyz” project, the string
 440 could be “xyz10” (that is, the [spec] part is left out). For all other specs created in the “xyz” project, the name would include the [spec] part; for
 441 example, “xyzattr10” might be used if a separate document was detailing attributes for use in the “xyz” project.

442 **5 Informal supporting PWG documents**

443 The following are considered informal, working documents that contribute to the development or clarification of a
444 PWG Standard. As such, these documents require no Formal Approval process.

445 **5.1 White Papers and Technical Briefs**

446 During the standards process, PWG members are encouraged to document their proposals for various elements of a
447 standard in a White Paper or Technical Brief. These documents provide an informal means of communicating
448 technical proposals among PWG members. It is strongly recommended that no item be opened for discussion on the
449 agenda of a PWG meeting without first having been documented and made available for review at least one week
450 prior to the meeting where the paper is to be discussed. White Papers are particularly useful when two or more
451 approaches to a standard exist and need to be debated. White Papers may be updated to reflect group consensus or
452 individual positions on a particular topic. Since a white paper represents current thought and individual contribution,
453 they do not require any form of approval and have no formal status. White Papers and Technical Brief are subject to
454 change or withdrawal at any time. Other documents, such as Best Practices, Hints, Tips, Developer's Guides and
455 FAQ fall into the same category as White Papers and Technical Briefs. These documents should be posted to the
456 PWG FTP site and announced on the working group mailing list prior to discussion at a PWG meeting. Discussion
457 will be most fruitful when people have taken adequate time to review the papers prior to the meeting.
458

459 **6 Modifications to process**

460 To handle exceptional cases, the Steering Committee may decide that some or all of the steps in the standards
461 process may be shortened or eliminated.

462 **7 Publication of PWG documents**

463 All of the PWG standards-track and supporting documents described in sections 4 and 5 must be available in either
464 PDF or HTML format (others may be provided as well) and published on the PWG FTP site. Any document identified
465 as PWG Charter, PWG Requirements, PWG Working Draft, PWG Candidate Standard or PWG Standard represents
466 a formal PWG approved document, which will be published in a durable location with well-known path after achieving
467 the appropriate Last Call and/or Formal Approval. Listed are examples of the directory structure using v1.0
468 Standards as an example. In use, "wg" would be replaced by the abbreviation for a particular working group (ex.
469 pmp, psi, ipp etc.). Note the prefix conventions established for these documents as reflected in the file name prefix in
470 the examples below.

- 471 Charter – <ftp://ftp.pwg.org/pub/pwg/wg/charter/ch-wg10-yyyymmdd.pdf>
- 472 Requirements – <ftp://ftp.pwg.org/pub/pwg/wg/charter/rq-wg10-yyyymmdd.pdf>
- 473 Working Drafts – <ftp://ftp.pwg.org/pub/pwg/wg/wd/wd-wg10-yyyymmdd.pdf>
- 474 Candidate Standards – <ftp://ftp.pwg.org/pub/pwg/wg/cs-wg10-yyyymmdd-510nm.pdf>
- 475 Standards – <ftp://ftp.pwg.org/pub/pwg/standards/std-wg10-yyyymmdd-510nm.pdf>

476
477 Standards are not published in the Working Group path. PWG Standards are given a unique number and are
478 published in one, flat, namespace for ease of access.

479
480 Supporting documents (see Section 5) are posted in the root Working Group path or a subdivision of that path as
481 appropriate. Filename prefixes for common supporting documents are:

- 482 White Paper – wp
- 483 Technical Brief – tb

486 Developer's Guide – dg
487 Best Practice – bp
488 Hints and Tips – ht
489 FAQ – faq
490 Last Call Review Comments - lcrc

491
492 Internal working versions of PWG documents should be available in an agreed upon, widely available word
493 processing format, to provide for collaboration between document editors and contributors. For example, Microsoft
494 WORD and HTML are common revisable formats in use, today.

495
496 When documents are posted to the PWG FTP site, a notice should also be posted to the Working Group mailing list.
497 It is recommended that Working Groups provide a web site where information about their activities is provided. The
498 Web site should provide links to current, relevant documents.
499

500 **8 Approval**

501 **8.1 Last Call**

502 Last Call represents a final opportunity for issues to be raised against a document. The WG Chair announces a Last
503 Call on a document with rough consensus of the working group. Last Calls are posted to all members of the PWG via
504 the PWG-ANNOUNCE mailing list. A successful Last Call indicates a higher level of maturity during the development
505 of a Standard. The Last Call period may vary, based upon the content, complexity, or other circumstances, but must
506 be at least 15 full working days. A working day is considered to end at 10 PM in the time zone where the vote
507 originated. It is encouraged that Last Call be scheduled to coincide with a face to face meeting of the working group.
508 In all cases, Formal Vote will not be initiated unless the Last Call is either terminated at or results of a Last Call are
509 reviewed at a face to face meeting

510
511 All issues raised during Last Call must be answered in one of the following manners:

- 512 • Resolved - Document updated to reflect the resolution
- 513 • Resolved - No change required in the document
- 514 • Unresolved - Document will be approved as is

515

516 **8.2 Formal Approval**

517 **8.2.1 Formal Approval Process**

518 Once all of the Last Call issues have been responded to and Last Call has been either completed during or reviewed
519 at a face to face meeting of the working group, a vote is taken on approval of the resulting document and transition to
520 the next maturity level. Formal approval voting must be announced and conducted via the PWG-ANNOUNCE mailing
521 list. The formal approval voting period must last at least 15 full working days and may be longer at the discretion of
522 the WG Chair. A working day is considered to end at 10 PM in the time zone where the vote originated.

523
524 Formal Approval requires

- 525
- 526 • Quorum defined by a minimum of 25% of active eligible members actually casting a vote
- 527 • approval by 2/3 of those casting votes (abstentions do not count) with no strong opposition
- 528 • approval by 80% of those casting votes (abstentions do not count), in the face of strong opposition

529
530 Strong opposition occurs when one or more companies formally calls for an 80% vote. It is the responsibility of the
531 WG chair to ensure that the results of a vote are fair and representative. If a member of the PWG has an issue with a

532 WG Chair decision, he or she can appeal that decision to the PWG Steering Committee (first) and then to the
533 membership of the PWG at large if necessary.

534
535 A no vote on a standards-track document requires the voter to state the reason for the no vote, and a description of
536 the changes that would be required to the document to turn the no vote to a yes. These will be documented on the
537 PWG-ANNOUNCE mailing list.

538
539 Formal approval is not granted until the PWG Steering Committee reviews the process used to achieve Last Call and
540 Vote insuring the PWG process was followed with fidelity.

541 **8.2.2 Formal Approval voting rights**

542 The following voting rights policy applies to all Formal Approval voting:

- 543
- 544 • A voter must be a representative of a PWG Member Organization.
- 545
- 546 • Votes are counted on an organization basis.
- 547

548 **8.2.2.1 Definition of Active Member for quorum**

549 For Formal Approval a quorum is necessary and is defined at 25% of active eligible members actually casting a vote.
550 For the purposes of calculating the quorum, active membership for eligible members is defined as having participated
551 in (at least) 2 previous consecutive face to face meetings of the working group or 4 consecutive phone conferences
552 leading up to a formal vote.

553 **8.3 Approval with a Working Group**

554 **8.3.1 Working Group approval process**

555 For technical issues, a 2/3 majority of those casting votes (abstentions do not count) is required. A simple majority of
556 those casting votes (abstentions do not count) is required to pass on administrative and operational issues.

557 **8.3.2 Working Group approval voting rights**

558
559 The following voting rights policy applies to all voting done within the PWG Working Groups:

- 560
- 561 • A voter must be a representative of a PWG Member Organization.
- 562
- 563 • Votes are counted on an organization basis.
- 564
- 565 • At times it may become necessary to conduct a vote on internal WG matters. If so, eligibility is determined by an
566 organization attending two of the previous four face-to-face meetings, or two of the previous four conference
567 calls. It is the responsibility of the Secretary to maintain the list of eligible voters.
- 568
- 569 • With a simple majority vote, the working group may confer voting rights to an individual or organization that is not
570 otherwise eligible to vote due to lack of attendance. This is done on a case-by-case basis and is intended to
571 address those individuals or companies who have made significant, on-going contributions to the group – but
572 have not been able to attend the required number of meetings. In no case may a representative of a non-
573 member company be conferred voting rights by the action of a working group.
- 574
- 575 • A Working Group Chair may declare that a sufficient quorum does not exist for voting purposes if at least 50% of
576 potential voting members are not present during the vote.
- 577
- 578 • Voting is not a requirement for declaring rough consensus, unless specifically requested by a member with voting
579 rights.

580 8.4 Approval at a PWG Plenary

581 8.4.1 PWG Plenary approval process

582 A simple majority of those casting votes (abstentions do not count) is required.

583 8.4.2 PWG Plenary approval voting rights

584 The following voting rights policy applies to all voting done within the PWG plenary:

585

586 • A voter must be a representative of a PWG Member Organization.

587

588 • Votes are counted on an organization basis.

589

590 • Plenary voting occurs at plenary sessions, so participation in the plenary is required for voting.

591

592 • Voting is not a requirement for declaring rough consensus, unless specifically requested by a member with voting
593 rights.

594 9 Maintenance

595 Many PWG standards are extensible and provide the ability for additional keyword or enumerated values to be
596 registered. When approved, these have the same status as the standard to which the feature is being added. In
597 addition, as implementation work proceeds, clarifications may be required to guarantee interoperability. This section
598 addresses the process to be followed for:

599 • registrations of new operations and type 2 enums, keywords, and attributes, and

600 • clarifications of the standard and any approved registrations

601 Major changes or additions to a standard are not considered maintenance, but require engagement of the PWG
602 standards development process described above.

603

604 Proposals for registrations and clarifications will follow the following process:

605

606 1. Each WG will appoint a Maintenance Editor for their PWG Standard.
607 2. Anyone can initiate a proposal for a clarification or registration by starting a discussion on the appropriate project
608 mailing list.

609 3. After there is some agreement on the mailing list for the need of a clarification or the suitability of a registration,
610 the proposer and the standard's Maintenance Editor work out a proposal. Such a proposal should include:

611 • Status of the proposal, including previous reviews.

612 • A description of the requirement being met or the problem being solved.

613 • Description of the proposed solution.

614 • The exact text to be incorporated into the standard at some future date.

615 4. To make the status of proposed registrations and clarifications clear to PWG participants and others, the
616 Maintenance Editor will keep them in the appropriate sub-directory

617 `ftp://ftp.pwg.org/pub/pwg/xxx/proposed-registrations`

618 `ftp://ftp.pwg.org/pub/pwg/xxx/proposed-clarifications`

619 where xxx is the project.

620 5. All proposals must be published according to section 6 of this document.

621 6. Reviews of proposed registrations and clarifications may occur at a meeting or on the MAILING LIST.

622 7. The proposal will undergo sufficient reviews and updates until, in the opinion of the WG Chair, there is rough
623 consensus that the proposal is ready for Last Call as described in section 8.1 followed by Formal Approval as
624 described in section 8.2.

625 8. If, in the opinion of the WG Chair, the Last Call discussions and Formal Approval meet the voting requirements
626 described in section 8, the Maintenance Editor will move the approved registration or clarification to the
627 appropriate sub-directory for each project

`ftp://ftp.pwg.org/pub/pwg/xxx/approved-registrations`

628 ftp://ftp.pwg.org/pub/pwg/xxx/approved-clarifications
 629 and announce the Formal Approval to the entire PWG via the PWG-ANNOUNCE MAILING LIST.
 630 9. Periodically, the Maintenance Editor will incorporate the approved registrations and clarifications into the version
 631 of the standard that the PWG keeps to record all approved registrations and clarifications. Such an updated
 632 version of the standard will have a new minor version of the standard, along with a Change History Appendix that
 633 lists each change.
 634

635 **10 PWG Semantic Model and Schema Extensions**

636 The PWG Semantic Model and associated Schema are extensible and intended to be extended to meet the needs of
 637 the industry. When approved, these semantic elements or values have the same status as the PWG Semantic
 638 Model and Schema. In addition, as implementation work proceeds, clarifications may be required to guarantee
 639 interoperability. Section 9 covers maintenance in general. This section addresses PWG Semantic Model and Schema
 640 extension specific aspects.

641 The PWG Semantic Model and associated Schema are also vendor and site extensible (see below). These private
 642 vendor and site extensions require no formal PWG approval process. It is recommended that vendor publish their
 643 extensions through the PWG and petition to make them PWG endorsed extensions.

644 Major changes or additions to a are defined as any changes that prevent upward and downward interoperability.
 645 Major changes require engagement of the PWG standards development process described above.

646 **10.1 Federation of vendor extensions (Namespace)**

647 Any vendor or site is permitted to extend the PWG Schema. Extensions are federated through the use of
 648 namespaces. Any new semantic element or value MUST be qualified by the extendor's namespace. The only
 649 exception to this are the values for elements that have a specific pattern for extensions. The exceptions are
 650 MediaColor, MediaType, MediaSizeName, OperatingSystemName and OutputBin. Vendors are responsible for
 651 managing their own namespace to prevent collisions. When an extension is approved by the PWG the element or
 652 value will be in the PWG namespace.

653 The PWG's namespace for the Semantic Model Schema (i.e. <http://www.pwg.org/schemas/sm/1.0/>) is expected to
 654 remain constant. The PWG Schema was designed as an Open Content schema. An open content schema is one
 655 that allows instance documents to contain additional elements beyond what is declared in the schema. The PWG
 656 Schema implements Localized Openness that allows extension at specific points. The namespace for the PWG
 657 Schema needs to remain constant and change infrequently to foster deployment. The namespace for the PWG
 658 Schema will only change when aq major change is required that prevents upward or downward interoperability.
 659 To accommodate minor updates each schema file contains the *schema* element with an attribute that specifies the
 660 version. The *version* attribute will be incremented each time a PWG approved extension is added. Note that the
 661 namespace does not change but by examining the schema file the exact version can be determined.

662 **10.2 PWG Semantic Model and Schema Extension Process**

663 Proposals for extensions will follow the following process:

- 664 1. Anyone can initiate a proposal for an extension by starting a discussion on the Semantic Model mailing list.
- 665 2. After there is some agreement on the mailing list for the suitability of the extension, the proposer creates a
 666 proposal. Such a proposal should include:
 - 667 • Status of the proposal, including previous reviews.
 - 668 • A description of the requirement being met or the problem being solved.
 - 669 • Description of the semantic element(s) or value(s).
 - 670 • The exact text to be incorporated into the PWG Semantic Model specification at some future date.
 - 671 • The exact XML Schema fragment to be included in the updated Schema
- 672 3. To make the status of proposed extensions clear to PWG participants and others, the Maintenance Editor will
 673 keep them in the ftp://ftp.pwg.org/pub/pwg/sm/proposed-registrations sub-directory
- 674 4. All proposals must be published according to section 6 of this document.
- 675 5. Reviews of proposed extensions may occur at a meeting or on the MAILING LIST.

- 676 6. The proposal will undergo sufficient reviews and updates until, in the opinion of the SM Chair, there is rough
677 consensus that the proposal is ready for Last Call as described in section 8.1 followed by Formal Approval as
678 described in section 8.2.
- 679 7. If, in the opinion of the SM Chair, the Last Call discussions and Formal Approval meet the voting requirements
680 described in section 8, the Maintenance Editor will move the approved extension to the
681 <ftp://ftp.pwg.org/pub/pwg/sm/approved-registrations> sub-directory and update the appropriate schema file.
682 The SM Chair will announce the Formal Approval and updates to the entire PWG via the PWG-ANNOUNCE
683 MAILING LIST.
- 684 8. Periodically, the Maintenance Editor will incorporate the approved extensions, registrations and clarifications into
685 the PWG Semantic Model Specification. Such an updated version of the standard will have a new minor version
686 of the standard, along with a Change History Appendix that lists each change.
687
688

689 **11 Intellectual Property and Confidentiality**

690 **11.1 Ownership of IP rights:**

691 All patents, copyrights, or other intellectual property owned or created by any Member or member's affiliates
692 ("hereinafter "Member or Associate") outside the PWG or its work within the PWG shall remain the property of that
693 Member or Associate there under and shall not be affected in any way by the Member or Associate's participation in
694 the PWG.

695
696 The PWG may, through its activities, generate intellectual property, and license such property to the Members and/or
697 Associates on reasonable and nondiscriminatory terms, conditions and prices; provided, however, that Members and
698 Associates receive more favorable pricing than non-Members or non-Associates.
699

700 All information and materials, and all copyrights thereto, contributed by Members and Associates and their
701 representatives and incorporated into a PWG Standard and Specification (here after "the Standard") shall be owned
702 by the contributing Member or Associate. The contributing Member or Associate shall grant PWG and its Members
703 and Associates an irrevocable license to use, reproduce, modify, distribute and sublicense the copyrighted work(s)
704 incorporated in the Standard on non-discriminatory basis and within reasonable terms and conditions.
705 Notwithstanding the above, any intellectual property independently created by a Member or Associate, but not
706 incorporated into a PWG standard, should remain the exclusive property of the original owner and no mandatory
707 license should be imposed.
708

709 Participants in the standard setting procedure shall disclose any known patents whose use would be required for
710 compliance with a proposed PWG standard. Prior to PWG's approval of the proposed standard, the PWG should
711 receive a written patent statement from the patent holder as described below in section 11.3.

712 **11.2 Intellectual Property Procedures**

713 The PWG is not in a position to give authoritative or comprehensive information about evidence, validity or scope of
714 patents or similar rights, but it is desirable that any available information should be disclosed. Therefore, all PWG
715 members shall, from the outset, draw PWG's attention to any relevant patents (hereinafter defined) either their own
716 or of other organizations including their Affiliates (hereinafter defined) that are known to the PWG members or any of
717 their Affiliates, although PWG is unable to verify the validity of any such information.
718

- 719 • "Relevant Patents" means any issued or registered patent, without use of which a Proposed PWG Standard
720 cannot be practiced.
- 721 • "Proposed PWG Standard" means each proposal towards each PWG specification, which proposal is submitted
722 to PWG after the date of acceptance of these Procedures (hereinafter the Effective Date).

- 723 • “Affiliates or Associates,” with respect to section 11.2, means any entity that as of the Effective Date directly or
724 indirectly is controlled by the PWG member, so long as such control exists, where “Control” means beneficial
725 ownership of more than fifty percent (50%) of the voting stock or equity in an entity.

726 **11.3 Patent Statement**

727 If a Proposed PWG Standard is submitted to the PWG, three different situations may arise with respect to the
728 relevant Patents:

- 729
- 730 (1) In the event the PWG Proposed Standard is adopted to become a PWG Standard, the patent holder waives his
731 rights under the Relevant Patents owned by him and hence, the Proposed PWG Standard is freely accessible to
732 everybody; no particular conditions, no royalties due, etc., with respect to such Relevant Patents. The PWG
733 Standard means any PWG specifications that are officially published by PWG after October 1, 1999.
- 734
- 735 (2) In the event a PWG Proposed Standard is adopted as a PWG Standard, the patent holder is not prepared to
736 waive his rights under the Relevant Patents owned by him but would be willing to grant licenses to other parties
737 on a non-discriminatory basis and on reasonable terms and conditions, provided a similar grant under the
738 licensee's patents within the scope of the license granted to the licensee is made available. Such license grants
739 are left to the parties concerned.
- 740
- 741 (3) In the event the Proposed Standard is adopted to become a PWG Standard, and the patent holder is not willing
742 to comply with the provisions of either paragraph 11.3 (1) or (2), in such a case the Proposal cannot be
743 established as a PWG Standard.
- 744
- 745 (4) Whichever option from among paragraphs 11.3 (1), (2) or (3) is chosen, any PWG member must provide a
746 written statement to be filed on behalf of itself and its Affiliates at the PWG secretariat with respect to the
747 Relevant Patents that are owned by the PWG member or any of its Affiliates and known to the PWG member or
748 any of its Affiliates. This statement must not include additional provisions, conditions, or any other exclusion
749 clauses in excess of what is provided for each case in paragraphs 11.3 (1), (2) and (3).
- 750
- 751 (5) If no Relevant Patents that are owned by the PWG member or any of its Affiliates are known to the PWG
752 member or any of its Affiliates, an affirmative disclosure to that effect must be submitted before the end of the
753 Patent Statement deadline in lieu of the Patent Statement. Any Relevant Patents that are owned by the PWG
754 member or any of its Affiliates and are found after the Patent Statement deadline are automatically subject to
755 either paragraph 11.3 (1) or (2) as described above.
- 756
- 757 (6) Format of Patent Statement/Patent Notice
- 758
- 759 (i) A Patent Statement should be submitted by all the PWG members for all Relevant Patents which are known
760 to the PWG members and their Affiliates and are owned by the PWG members or their Affiliate, providing the
761 following information:
- 762
- 763 1. Proposal Name
 - 764 2. Organization: The organization that holds the patent which could include administrations, universities,
765 etc., and its contact address.
 - 766 3. Tel. No.: The contact telephone number of the organization.
 - 767 4. Fax. No.: The contact fax number of the organization.
 - 768 5. Patent Policy and Remarks: The declared patent policy of the organization in its communication to the
769 PWG. Most often the patent policy is given as "Pat. Policy. 11.3 (2)", which would mean that the
770 organization subscribes to paragraph 11.3 (2) of the PWG bylaws.
 - 771 6. Patent Title: The title of a patent
 - 772 7. Patent Number: The number of the patent.
 - 773 8. Patent Country: The country in which the patent has been obtained. If the patent is held in several
774 countries, a list of those countries is given.
 - 775 9. Signature: Signature of an authorized representative of the company.

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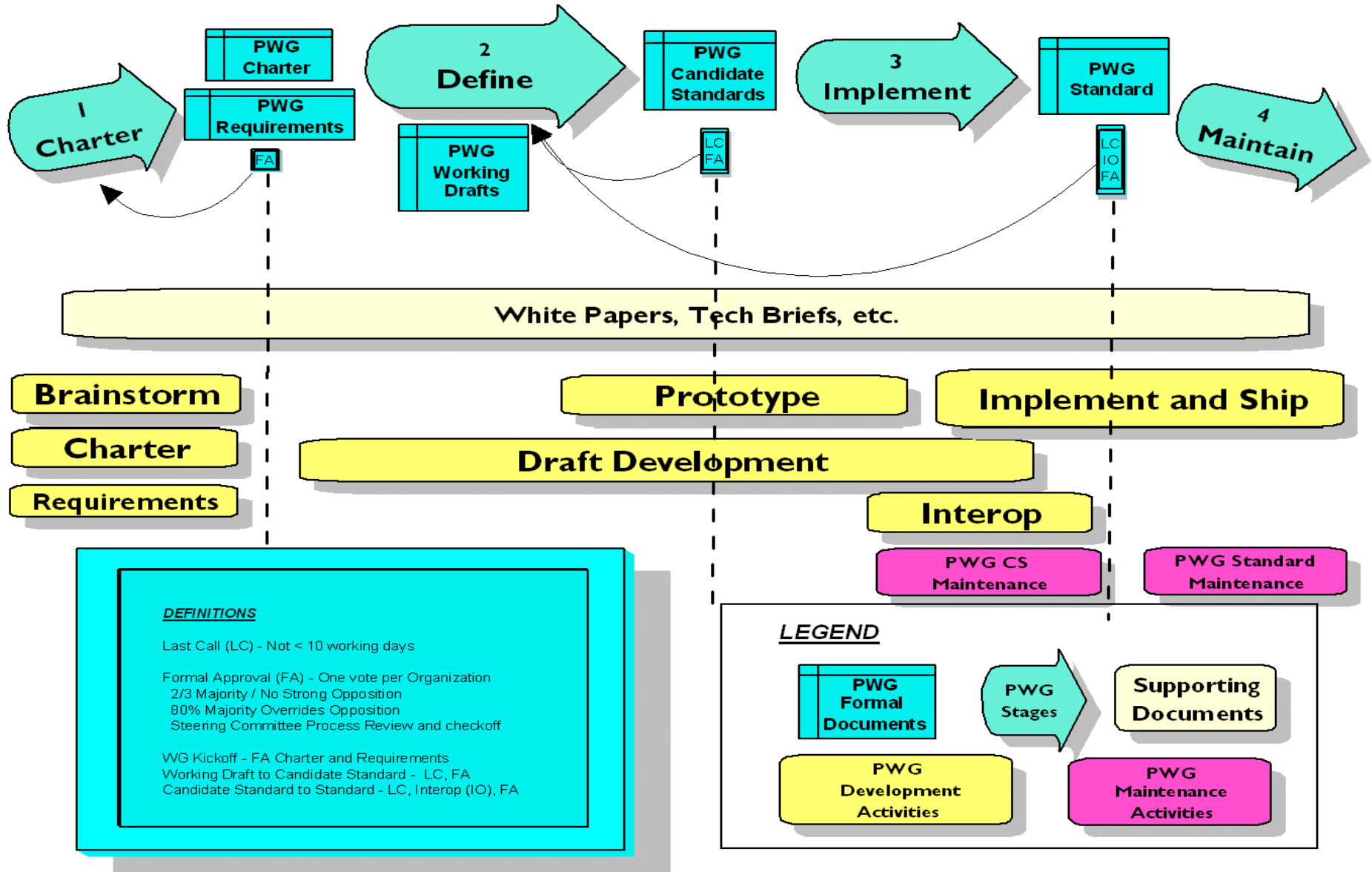
- (ii) Further, a Patent Notice should be submitted by all the PWG members for Relevant Patents which are known to the PWG members and their Affiliates and are not owned nor controlled by the PWG members or their Affiliate, providing the following information:
 - 1. Proposal Name
 - 2. Organization: The organization that holds the patent which could include administrations, universities, etc., and its contact address.
 - 3. Patent Title: The title of a patent
 - 4. Patent Number
 - 5. Patent Country: The country in which the patent has been obtained. If the patent is held in several countries, a list of those countries is given.
 - 6. Signature: Signature of a representative of the company
- (7) All members must submit a written patent statement according to section 11.3(6) between the proposal deadline and the commencement of voting period.

792 **11.4 Non-Confidentiality.**

793 The participation in the PWG by the Members and the Associates and their appointed representatives shall be on a
794 non-confidential basis; however, a PWG Member may with the approval of the Steering Committee, wherein such
795 approval shall not be unreasonably withheld, enter into written confidentiality agreements with all other PWG
796 Members which restricts the dissemination of specified confidential information and/or materials provided by any of
797 such Member, to Persons who are not Members or Associates.

798
799 Subject only to valid patents and copyrights, all PWG Members and Associates shall be free to use all information
800 received or publicly disclosed from the PWG, its Members or Associates in connection with the normal business
801 including the processes described herein, without obligation regardless of markings including but not limited to
802 "Proprietary" or "Confidential."
803

804 12 PWG Process Diagram



805

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