IEEE-ISTO
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The Printer Working Group

PWG Policy

Definition of the Standards Development Process

Version 2.0
March 27~~10~~, 2003

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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-process20-200303 2710.pdf, .doc

About the IEEE-ISTO

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

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

About the IEEE-ISTO PWG

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

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

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

Contact information:

PWG Web Page: http://www.pwg.org/
PWG Mailing List: pwg@pwg.org

To subscribe to the PWG mailing list, send the following email:
1) send it to majordomo@pwg.org
2) leave the subject line blank
3) put the following two lines in the message body:
subscribe pwg
end

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

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1 Introduction

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

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

This process document establishes

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

2 Organization of the PWG

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

2.1 PWG Officers

The PWG has a Chair position responsible for organizing the overall agenda of the PWG. The PWG chair is elected by a simple majority of the PWG members to a two-year term of office that begins on September 1st. Responsibilities of the PWG chair include creating working groups, appointing working group chairs, making local arrangements for PWG meetings (this may be delegated as appropriate), setting the high level PWG agenda, chairing the PWG plenary session, and assisting working group chairs to accomplish their tasks. The PWG Chair must be a representative of a PWG Member Organization. The PWG Chair is an ex officio member of all working groups.

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

The PWG Secretary is elected to a two year term of office by a simple majority of the PWG members. It is the secretary's responsibility to record and distribute the minutes of all PWG plenary sessions and other meetings, as required, to support the PWG chair. The PWG Secretary must be a representative of a PWG Member Organization.

The PWG Steering Committee is composed of the PWG chair, vice-chair, secretary, and chairs of all active working groups. The Steering Committee shall meet upon the call of the PWG Chair to discuss matters of concern of the PWG.

2.2 Working Group Officers

Under the PWG chair are a number of working groups (WG) which are chartered for the purpose of developing a specific standard. Working groups are chartered as required to address specific areas of standardization. A working group is considered active until it satisfies its charter.

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

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

A WG secretary is appointed by the WG Chair, with approval (simple majority) of the WG. The term of office is indefinite. The responsibilities of the Secretary are to record and distribute minutes of working group meetings and to record, maintain, and publish the voting rights for members of that working group.

2.3 PWG Meetings

The annual face-to-face meeting schedule for the PWG is set in October of each year. As a guideline, meetings are to be distributed geographically, and should be held approximately every 6 to 10 weeks, as needed. Meeting location details are to be published at least 4 weeks in advance of meetings. Decisions made at PWG administrative, business, or plenary meetings require a simple majority, 1 vote per member organization.

Much of the core work of the PWG working groups is accomplished via telephone and web enabled conferencing. This allows a reduction in cost of the overall standards development process by minimizing travel.

3 PWG Standards development and maintenance

There are 3 main phases to standards development in the PWG – Charter, Development and Maintenance (Table 1). These phases are a guideline to the activities and types of documents a working group should expect to encounter. There are not specific exit criteria from these phases. Exit criteria apply to PWG Standards documents and are outlined in section 4.

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 s.a. WSDL, Schema
Maintenance	Maintain PWG Standard	Errata Registration of new keywords, enums	Standard Supporting durables

4 Formal PWG standards-track publications

Standards development is guided, largely, by the progression of documents used to define and articulate the Standard. Formal documents consist of the Charter, a set of Requirements, Working Drafts, Candidate Standards and, ultimately, the Standard, itself. Publication of these formal PWG standards-track documents requires Last Call and/or Formal Approval (vote) by the membership of the PWG as described in Section 7. The standards process may be augmented by a set of informal technical briefs and proposals reading on the standard. While helpful and encouraged, these are not treated as formal documents and do not require formal approval. Standards-track publications and the criteria for exit are defined below. Because the synchronization of Standard version, standard document maturity, document naming, support file namespace and file path names can be quite complex, Table 2 provides an example of how these items are orchestrated throughout the standards process.

4.1 Editing Documents

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

4.2 Working Group Charter

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

A Working Group Charter requires Formal Approval (see Section 7).

4.3 Statement of Requirements

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

A Working Group Statement of Requirements requires Formal Approval (see Section 7).

4.4 Working Draft

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

Working Drafts and Candidate Standards correspond to a specific version of the Standard they are defining. Unless the working group is engaged in an effort to revise an existing PWG Standard, the Working Drafts and Candidate Standards are always defining PWG Standard Version 1.0. ~~As the definition of a PWG Standard matures, revised Working Drafts and Candidate Standards have their own versioning scheme. Working Drafts always begin at v0.01 and increase toward v0.99 as they lead to Candidate Standard. The first Candidate Standard has a maturity level of v1.0.0. The process may iterate with Working Drafts and Candidate Standards, maturity increasing toward v1.0.x until the actual PWG Standard v1.0 is complete and approved.~~

A PWG Working Draft requires Last Call, Intellectual Property Letters of Assurance, and Formal Approval to transition to PWG Candidate Standard.

4.4.1 Maturity Level

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

Maturity: *<keyword>*

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

Maturity Level keyword	*Indicates*
Initial Draft	Initial attempt to specify the standard.
Development	Standard in development. Significant changes to the standard expected in the future.
Stable	Overall direction and structure of the standard is stable. Ready for prototyping.
Final Review	Standard is very close to completion. Standard is either getting ready for, is in, or has completed Last Call.

Normally, the Working Drafts of a standard would progress from "Initial Draft" to "Final Review" in stages, although stages could be skipped for small standards efforts. However, it is possible for the Working Drafts to become less mature: if a large problem was found in a standard that was considered "Stable", it might have to go back to "Development" while that problem is solved. Note also that for all four maturity levels, multiple, consecutive Working Drafts might have the same maturity level.

4.5 Candidate Standard

When agreement has been reached among the participants about the details of a Standard, the current Working Draft is ready to transition to a PWG Candidate Standard. ~~Formal approval of the first Candidate Standard coincides with maturity level v1.0.0 in the drafting process.~~ A Candidate Standard should not be approved unless it is supported by prototypes and thought to be ready for implementation. A PWG Candidate Standard forms the basis for comments from outside of the working group and the PWG, and provides the foundation for initial product development and interoperability testing. Implementations can comfortably proceed from a PWG Candidate Standard, knowing that it will not undergo significant change as it matures to a PWG Standard. Should changes to a Candidate Standard be necessary, however, these will be accomplished via Working Drafts that~~which~~ must go back through L~~l~~ast C~~c~~all and F~~f~~ormal A~~a~~pproval to regain Candidate Standard status.

When a document becomes a Candidate Standard, it is assigned an IEEE ISTO standard number, which it keeps forever afterwards. To indicate the standard is at Candidate Standard status, the prefix "CS" is attached to the standard number, resulting in a number such as "CS 5105.2". The "CS" prefix remains even if the document goes back to Working Draft status for some time.

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

4.6 Standard

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

4.7 Extensions to standards

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

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

~~4.8Maturity Version~~

~~Associated with each version of the document that specifies a prospective standard is a Maturity Version. The maturity version is meant to be a subjective indication of the maturity of the standard, and might be used to determine when a standard is ready for some activity, such as prototyping.~~

~~In general, the maturity version begins at 0.01, progresses toward 0.99 while a Working Draft, then goes to 1.0.0 when the first Candidate Standard is approved.~~

~~4.8.1Maturity Version before Candidate Standard~~

~~The maturity version is mainly useful when it is less than 1.0.0, since that is when its value is most indicative of maturity. Here are some general guidelines for what values less than 1.0.0 indicate:~~

~~*Maturity Version value*~~	~~*Indicates*~~
~~0.5~~	~~Overall direction and structure of the document is stable~~
~~0.7~~	~~Major work items and issues are close to resolution and completion~~
~~0.9~~	~~100% content complete; Small number of minor work items and issues; Document is ready for a "page-turner" – a proofreading session~~
~~0.95~~	~~Thorough proofreading procedure completed; All feedback received during review period has been processed~~

~~(Note that the table above is provided *only* as a guideline – the working group should use its discretion to determine the appropriate maturity version.)~~

~~While the maturity version is less than 1.0.0, it can stay at the same value for multiple versions of a document. For example, in the period where (sometimes many) "last minute" updates are being made before Last Call, a document might be edited a number of times but stay at maturity version 0.99.~~

~~4.8.2Maturity Version after Candidate Standard~~

~~The maturity version of a document goes to 1.0.0 when becoming a Candidate Standard. At that point, the value increments to 1.0.1, then 1.0.2, and so on, as every new version of the document is created, whether or not substantive changes occurred in the document. Therefore, the maturity version will always change after a Last Call, if for no other reason than that the document will need to be updated to indicate the new maturity level attained.~~

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~~**	**Maturity Level~~Version~~**	**WSDL Interface Namespace / Ver**	**PWG Num**	**Document Filename**	**Document Path**
Working Draft	XYZ 1.0	2002/01/01	WD	Initial Draft~~0.20~~	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	Development~~0.21~~	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	Stable	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	Final Review~~0.99~~	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~~1.0.0~~	2003/02/07	CS 510n.m ~~N/A~~	cs-xyz10-20030221-510nm.doc	ftp://ftp.pwg.org/pub/pwg/candidates/…
Working Draft, no interface changes	XYZ 1.0	2003/03/01	WD	Stable~~1.0.1~~	2003/02/07	CS 510n.m ~~N/A~~	wd-xyz10-20030301-510nm.doc	ftp://ftp.pwg.org/pub/pwg/xyz/wd/…
Working Draft, * interface change	XYZ 1.0	2003/03/15	WD	Stable~~1.0.2~~	* 2003/03/15	CS 510n.m ~~N/A~~	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	Final Review~~1.0.3~~	2003/03/15	CS 510n.m ~~N/A~~	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~~1.0.4~~	2003/03/15	CS 510n.m ~~N/A~~	cs-xyz10-20030620-510nm.doc	ftp://ftp.pwg.org/pub/pwg/candidates/…
Standard	XYZ 1.0	2003/08/20	STD	N/A ~~1.0.5~~	2003/03/15	STD 510n.m	std-xyz10-20030820-510nm.doc	ftp://ftp.pwg.org/pub/pwg/standards/…

380 Table 2 - Sample flow of documents including versions and naming

5 Informal supporting PWG documents

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

5.1 White Papers and Technical Briefs

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

6 Publication of PWG documents

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

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

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

Supporting documents (see Section 5.1) are posted in the root Working Group path or a subdivision of that path as appropriate. Filename prefixes for common supporting documents are:

White Paper – wp
Technical Brief – tb
Developer's Guide – dg
Best Practice – bp
Hints and Tips – ht
FAQ – faq

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

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

7 Approval

There are several forms of approval designed to assure integrity of the Standard as documents are promoted through the process. The application of these approvals are described in Section 4 and summarized in Table 2.

7.1 Last Call

Last Call represents a final opportunity for issues to be raised against a document. The WG chair announces a Last Call on a document with rough consensus of the working group. Last Calls are posted to all members of the PWG via the PWG-ANNOUNCE mailing list. A successful Last Call indicates a higher level of maturity during the development of a Standard. The Last Call period may vary, based upon the content, complexity, or other circumstances, but must be at least ten full working days. A working day is considered to end at 5 PM in NYC.

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

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

7.2 Formal Approval

Once all of the Last Call issues have been responded to, a vote is taken on approval of the resulting document and transition to the next maturity level. Formal approval voting must be announced and conducted via the PWG-ANNOUNCE mailing list. Each organization represented on the PWG has one vote. The formal approval voting period must last at least 10 full working days and may be longer at the discretion of the WG Chair.

Formal Approval requires

- approval by 2/3 of those casting votes (abstentions do not count) with no strong opposition
- approval by 80% of those casting votes (abstentions do not count), in the face of strong opposition

Strong opposition occurs when one or more companies formally calls for an 80% vote. It is the responsibility of the 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 WG Chair decision, he or she can appeal that decision to the PWG Steering Committee (first) and then to the membership of the PWG at large if necessary.

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

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

7.3 Voting Rights

The following policy applies to all voting done within the PWG and its Working Groups:

- A voter must be a representative of a PWG Member Organization.
- Votes are counted on an organization basis.
- At times it may become necessary to conduct a vote on internal WG matters. If so, eligibility is determined by an organization attending two of the previous four meetings, where meetings include both face-to-face meetings and conference calls. It is the responsibility of the Secretary to maintain the list of eligible voters and post this in the meeting minutes. There is no history of attendance requirement, only a membership requirement, for voting at PWG Plenary meetings.
- With a simple majority vote, the working group may confer voting rights to an individual or organization that is not otherwise eligible to vote due to lack of attendance. This is done on a case-by-case basis and is intended to address those individuals or companies who have made significant, on-going contributions to the group – but have not been able to attend the required number of meetings. In no case may a representative of a non-member company be conferred voting rights by the action of a working group.
- A simple majority is required to pass on administrative and operational issues. Otherwise Formal Approval, as defined in section 7.2, is required on all voting.
- A working Group chair may declare that a sufficient quorum does not exist for voting purposes if at least 50% of voting members are not present during the vote.
- Voting is not a requirement for declaring rough consensus.

8 Maintenance

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

- registrations of new operations and type 2 enums, keywords, and attributes, and
- clarifications of the standard and any approved registrations

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

Proposals for registrations and clarifications will follow the following process:

1. Each WG will appoint a Maintenance Editor for their PWG Standard.
2. Anyone can initiate a proposal for a clarification or registration by starting a discussion on the appropriate project mailing list.
3. After there is some agreement on the mailing list for the need of a clarification or the suitability of a registration, the proposer and the standard's Maintenance Editor work out a proposal. Such a proposal should include:
    - Status of the proposal, including previous reviews.
    - A description of the requirement being met or the problem being solved.
    - Description of the proposed solution.
    - The exact text to be incorporated into the standard at some future date.
4. To make the status of proposed registrations and clarifications clear to PWG participants and others, the Maintenance Editor will keep them in the appropriate sub-directory
    ftp://ftp.pwg.org/pub/pwg/xxx/proposed-registrations
    ftp://ftp.pwg.org/pub/pwg/xxx/proposed-clarifications

where xxx is the project.

5. All proposals must be published according to section 6 of this document.
6. Reviews of proposed registrations and clarifications may occur at a meeting or on the MAILING LIST.
7. The proposal will undergo sufficient reviews and updates until, in the opinion of the WG Chair, there is rough consensus that the proposal is ready for Last Call as described in section 7.1 followed by Formal Approval as described in section 7.2.
8. If, in the opinion of the WG Chair, the Last Call discussions and Formal Approval meet the voting requirements described in section 7, the Maintenance Editor will move the approved registration or clarification to the appropriate sub-directory for each project
   ftp://ftp.pwg.org/pub/pwg/xxx/approved-registrations
   ftp://ftp.pwg.org/pub/pwg/xxx/approved-clarifications
   and announce the Formal Approval to the entire PWG via the PWG-ANNOUNCE MAILING LIST.
9. Periodically, the Maintenance Editor will incorporate the approved registrations and clarifications into the version of the standard that the PWG keeps to record all approved registrations and clarifications. Such an updated version of the standard will have a new minor version of the standard, along with a Change History Appendix that lists each change.

9 Intellectual Property and Confidentiality

9.1 Ownership of IP rights

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

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

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

Participants in the standard setting procedure shall disclose any known patents whose use would be required for compliance with a proposed PWG standard. Prior to PWG's approval of the proposed standard, the PWG should receive a written patent statement from the patent holder as described below in section 9.3.

9.2 Intellectual Property Procedures

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

- "Relevant Patents" means any issued or registered patent, without use of which a PWG Candidate Standard or PWG Standard cannot be practiced.
- "PWG Candidate Standard" means each proposal towards each PWG Standard, which is submitted to PWG after the date of acceptance of these Procedures (hereinafter the Effective Date).
- "Affiliates or Associates," means any entity that as of the Effective Date directly or indirectly is controlled by the PWG member, so long as such control exists, where "Control" means beneficial ownership of more than fifty percent (50%) of the voting stock or equity in an entity.

9.3 Patent Statement

When a proposal is submitted to the PWG, three different situations may arise with respect to relevant Patents and Patent applications:

(1) In the event the proposal is adopted to become a PWG Standard, the patent holder or applicant waives his rights under the Relevant Patents owned by him and hence, the proposal is freely accessible to everybody; no particular conditions, no royalties due, etc., with respect to such Relevant Patents. The PWG Standard means any PWG specifications that are officially published by PWG after October 1, 1999.

(2) In the event a proposal is adopted as a PWG Standard, the patent holder or applicant is not prepared to waive his rights under the Relevant Patents owned by him but would be willing to grant licenses to other parties on a non-discriminatory basis and on reasonable terms and conditions, provided a similar grant under the licensee's patents within the scope of the license granted to the licensee is made available. Such license grants are left to the parties concerned.

(3) In the event the proposal is adopted to become a PWG Standard, and the patent holder or applicant is not willing to comply with the provisions of either paragraph (1) or (2), in such a case the Proposal cannot be established as a PWG Standard.

(4) Whichever option from among paragraphs (1), (2) or (3) is chosen, any PWG member must provide a written statement to be filed on behalf of itself and its Affiliates at the PWG secretariat with respect to the Relevant Patents that are owned by the PWG member or any of its Affiliates and known to the PWG member or any of its Affiliates. This statement must not include additional provisions, conditions, or any other exclusion clauses in excess of what is provided for each case in paragraphs (1), (2) and (3).

(5) If no Relevant Patents that are owned or applied for by the PWG member or any of its Affiliates are known to the PWG member or any of its Affiliates, an affirmative disclosure to that effect must be submitted before the end of the Patent Statement deadline in lieu of the Patent Statement. Any Relevant Patents that are owned by the PWG member or any of its Affiliates and are found after the Patent Statement deadline are automatically subject to either paragraph (1) or (2) as described above.

(6) Format of Patent Statement/Patent Notice

(i) A Patent Statement should be submitted by all the PWG members for all Relevant Patents and Patent applications which are known to the PWG members and their Affiliates and are owned 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. Tel. No.: The contact telephone number of the organization.
4. Fax. No.: The contact fax number of the organization.
5. Patent Policy and Remarks: The declared patent policy of the organization in its communication to the PWG. Most often the patent policy is given as "Pat. Policy. 9.3 (2)", which would mean that the organization subscribes to paragraph 9.3 (2) of the PWG bylaws.

6. Patent Title: The title of a patent
7. Patent Number: The number of the patent (if known).
8. 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.
9. Signature: Signature of an authorized representative of the company.

(ii) Further, a Patent Notice should be submitted by all the PWG members for Relevant Patents and Patent applications 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 (if known)
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

See http://www.pwg.org/chair/pwg-loa.doc for a link to the PWG Letter of Assurance for Essential Patents.

(7) All voting members must submit a written patent statement between the proposal deadline and the commencement of voting period. An LOA must be received from each voting member prior to transition of a Working Draft to Candidate Standard.
(8) The working group chairman should provide an IP summary at the beginning of every face to face meeting and/or discuss the need for IP LOAs in periodic conference calls or e-mail summaries (recommended at least every 60 days).

Issue 1 – Does this mean voting cannot proceed if someone has not submitted LOA? Yes?

9.4 Non-confidentiality

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

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

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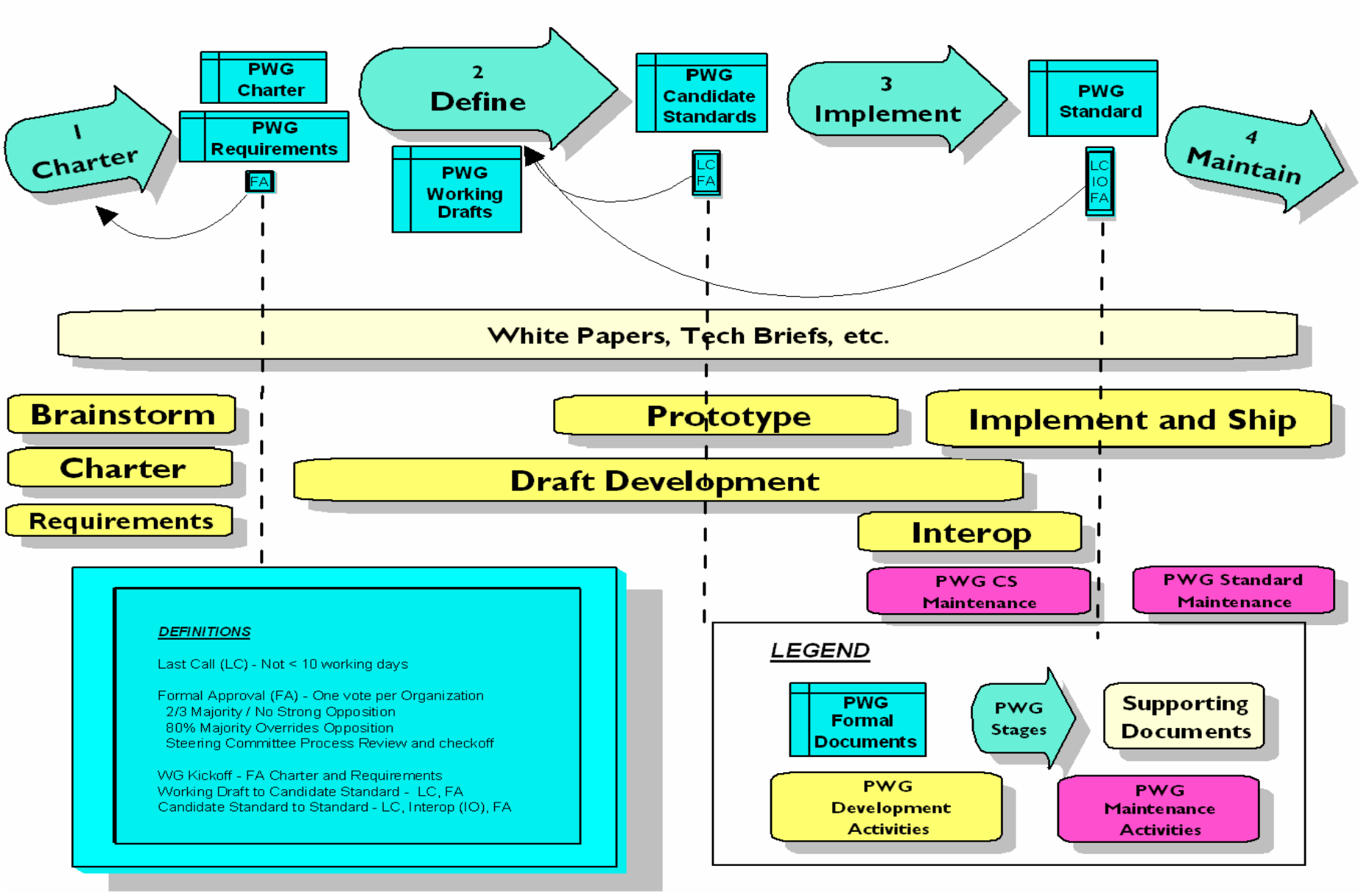
679 # 10 PWG Process Diagram



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