The Printer Working Group

PWG Policy

Definition of the Standards Development Process

Version 2.0
April 08, 2004

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Abstract: This document defines the standards development process that guides and controls the work of the 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 completely unaltered. This document defines PWG policy and process and does not define an industry standard.

This version of the PWG Standards Development Process is available electronically at:
ftp://ftp.pwg.org/pub/pwg/standards/process/pwg-process20-20040408.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 Industry Standards and Technology Organization member organizations include printer manufacturers, print server developers, operating system providers, network operating systems providers, network connectivity vendors, and print management application developers. 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 Printer Working Group

The Printer Working Group (or PWG) is a Program of the IEEE-ISTO. All references to the PWG in this document implicitly mean "The Printer Working Group, a Program of the IEEE ISTO." The PWG is chartered to make printers and the applications and operating systems supporting them work together better. In order to meet this objective, the PWG will document the results of their work as open standards that define print related protocols, interfaces, data models, procedures and conventions. Printer manufacturers and vendors of printer related software would 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.

Contact information:

The Printer Working Group
c/o The IEEE Industry Standards and Technology Organization
445 Hoes Lane
Piscataway, NJ 08854
USA

PWG Web Page: http://www.pwg.org

Instructions on subscribing to PWG mailing lists can be found at the following link:

http://www.pwg.org/mailhelp.html

Members of the PWG and interested parties are encouraged to join the PWG and PWG WG Mailing List in order to participate in discussions, clarifications and review of the WG product.

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1 Introduction

This document establishes the process that is followed as the Printer Working Group develops open industry standards. The Printer Working Group (or PWG) is a Program of the IEEE Industry Standards and Technology Organization (ISTO) and all references to the PWG in this document implicitly mean "The Printer Working Group, a Program of the IEEE ISTO." The PWG 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. 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 would 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

If this policy document is updated, the new version is subject to Last Call and Formal Approval as described, herein. As long as section 10, **Intellectual Property and Confidentiality**, is not modified, the new version may be approved through the Formal Approval process described in section 8.3.1. If section 10 is modified, 100% of all PWG members must approve the new document (abstentions/non-votes are not allowed).

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 IEEE-ISTO by-laws, the Printer Working Group 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 in odd numbered years 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, assuring that working groups maintain adequate leadership, making local arrangements for PWG meetings (this may be delegated as appropriate), setting the high level PWG agenda, chairing the PWG plenary session, ensuring that the PWG web and FTP site are maintained, 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 in odd numbered years 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 in odd numbered years 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 Secretary is responsible, in cooperation with the IEEE ISTO, for managing number blocks for standards naming and maintaining a PWG Member Organization roster including contact and company profile information, including logo, as it pertains to representation on the PWG web site. The PWG Secretary is the only member authorized to install submissions or make changes to the "standards", "candidates" or "informational" top-level permanent file directories of the PWG.

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 or by a majority of its members to discuss matters of concern of the PWG. Where matters come to a vote in the Steering Committee, decisions are made by simple majority of the entire committee (abstentions/non-votes are counted as no votes), with one vote per person.

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 or is otherwise terminated by the Working Group Chair with the agreement of the Steering Committee.

The PWG Chair appoints the Chair of a WG, with approval (simple majority) at a PWG plenary. 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 appointing a Vice Chair and Secretary for the WG, 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 WG Chair appoints the Vice Chair of a WG, 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.

The WG Chair appoints the Secretary for a WG, with approval (simple majority) of the WG. The term of office is indefinite. The responsibilities of the WG Secretary are to record and distribute minutes of working group meetings and to record attendance 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, it is common to hold face-to-face meetings every 6 to 10 weeks with phone and web based conferencing during the interim. Face-to-face meetings are to be distributed geographically to try and normalize the travel burden among members. Meeting schedule and locations are determined through a proposal / consensus process and no other specific process or guarantees are implied. Meeting location details are to be published at least 4 weeks in advance of meetings. New documents must not be introduced under any circumstances less than 1 week prior to a face-to-face as this only leads to confusion and ineffective meeting results.

Non-standards related administrative and procedural decisions made at PWG administrative, business, or plenary meetings require a simple majority, 1 vote per member organization.

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

2.4 PWG Communications Infrastructure

The PWG will maintain

1. A PWG web site http://www.pwg.org where PWG working group information, meeting schedules and document links and other pertinent information may be found.
2. A PWG ftp site ftp://ftp.pwg.org where PWG working drafts, standards, procedures, schema, templates and other useful and necessary documents may be accessed.
3. An e-mail reflector, including archive, for each active project. Instructions for subscribing to the PWG mailing lists can be found at the following link: http://www.pwg.org/mailhelp.html

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 no 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 Interop Test Results	PWG Working Drafts Candidate Standards Supporting durables such as WSDL, Schema
Maintenance	Maintain PWG Standard	Errata	Standard

	Maintain PWG Candidate Standard	Registration of new keywords, enums	Supporting durables

4 Formal PWG standards-track process

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. Due to their highly influential nature, informative documentation of Best Practice is also treated as a formal document. 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 0. 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, a normative guide has been developed to orchestrate these items throughout the standards process. See : ftp://ftp.pwg.org/pub/pwg/informational/pwg-document-namespace-policy.pdf

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 Organizing and Naming Documents

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

4.3 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. The PWG Steering Committee, based on perception of progress and commitment of the working group, may grant extensions. 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 and include a liaison plan with the other 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 0).

4.4 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 completeness 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 0).

4.5 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 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 are always defining PWG Standard Version 1.0.

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

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

4.5.1 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.

Table 2 – Maturity Level keywords

Maturity Level keyword	*Indicates*
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.

Normally, the Working Drafts of a standard would progress from “Initial” to “Stable” 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 “Prototype”, it might have to go back to “Interim” while that problem is solved. Note also that for all four maturity levels, multiple, consecutive Working Drafts might have the same maturity level.

The stated maturity level of a Working Draft will be established via working group concensus.

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

4.6 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. A Working Draft MUST NOT be approved as a Candidate Standard unless it is supported by 1 or more prototype and is thought to be ready for implementation. The purpose of prototyping is to generate information that will help design or perfect the final standard. As each type of standard may differ, the PWG process does not define specific, measurable prototype criteria beyond the commonly held notion of a test-of-principle model or early version of a technological device or process.

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. However, should changes to a Candidate Standard be necessary, these changes will be accomplished via Working Drafts that must once again go through Last Call and Formal Approval. The Working Draft will then and only then regain Candidate Standard status.

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 Candidate Standards are always defining PWG Standard Version 1.0.

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

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

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

4.7 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, "STD" replaces the prefix "CS" in the IEEE-ISTO standard number and "PWG" is replaced by "IEEE-ISTO", resulting in a number such as "IEEE-ISTO STD 5105.2".

4.8 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.

4.9 Best Practices

Best Practice documents reflect policy and advice from the PWG. Such documents, while not normative, are often referenced for clarification of PWG and related standards. Because we want Best Practice to be reliable and accurate, we treat these as formal Working Group documents that undergo naming, Last Call and Formal Approval just like a Working Draft.

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, Technical Briefs and other non-normative documents

During the standards process, PWG members are encouraged to document proposals, clarifications or otherwise useful documents such as machine generated MIB fragments and XML schema as a White Paper or Technical Brief. These documents provide an informal means of communicating technical proposals among PWG members. It is strongly recommended that any topic open for discussion on the PWG agenda have supporting documentation made available for review at least one week prior to the meeting where the paper is to be discussed. Technical Briefs are particularly useful when two or more approaches to a standard exist and need to be debated. White Papers and Technical Briefs (treated the same) 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, Technical Briefs and other documents, such as FAQ, are subject to change or withdrawal at any time. 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 Modifications to process

To handle exceptional cases, the Steering Committee may decide that some or all of the steps in the standards process may be shortened or eliminated. Need to describe how

7 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 (active) – ftp://ftp.pwg.org/pub/pwg/wg/charter/rq-wg10-yyyymmdd.pdf
Requirements (final) – ftp://ftp.pwg.org/pub/pwg/informational/charter/rq-wg10-yyyymmdd.pdf
Best Practices – ftp://ftp.pwg.org/pub/pwg/informational/bp/bp-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/candidates/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, managed by the PWG Secretary, for ease of access, accuracy and durability.

Supporting documents (see Section 5) 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 andTechnical Brief – tb

FAQ – faq
Last Call Review Comments - lcrc

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.

8 Approval

8.1 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, holidays or other circumstances, but must be at least 16 full working days (minimum 22 calendar days). A working day is a normal business day and is considered to end at 10 PM USPST (Los Angeles, CA, USA). . Every Last Call must conclude at a PWG Plenary meeting with an overview of the draft or standards document and a review of detailed issues and their resolutions. All issues raised during Last Call must be either resolved or rejected as follows:

- Resolved - Document updated to reflect the resolution
- Rejected - No change required in the document

All issues and their resolution must be published in the Formal Approval announcement

8.2 Formal Review

Last Call results must be reviewed by the PWG Steering Committee to validate that the Last Call process has been conducted properly, prior to the initialization of Formal Approval.

8.3 Formal Approval

8.3.1 Formal Approval Process

Once all of the Last Call issues have been resolved or rejected, and the PWG Steering Committee has reviewed Last Call, the PWG Secretary must announce a vote for Formal Approval to transition the document to the next maturity level. Formal approval voting must be announced and conducted via the PWG-ANNOUNCE mailing list and the announcement must contain all issues and their resolution, which occurred during Last Call. The Formal Approval period must last at least 16 full working days (minimum 22 calendar days) and may be longer at the discretion of the WG Chair. A working day is a normal business day and is considered to end at 10 PM USPST (Los Angeles, CA, USA).

The PWG Secretary will administer the Formal Approval process with the assistance of the working group chair and the ISTO.

Formal Approval requires

- Quorum defined by as minimum of 25% of active eligible members actually casting a vote
- 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.

8.3.2 Formal Approval voting rights

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

- A voter must be a representative of a PWG Member Organization.

- Votes are counted on an organization basis.

8.3.2.1 Definition of quorum

For Formal Approval a quorum is necessary and is defined at 25% of eligible member companies actually casting a vote.

8.4 Publishing Of Approved Document

The PWG Secretary, with assistance from the WG Chair, must edit documents that have passed Formal Approval to update the document number, format and the final publication date. The PWG Secretary must then publish the document in the appropriate locations (see section XXX) with the appropriate file names.

8.5 Approval with a Working Group

8.5.1 Working Group approval process

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

8.5.2 Working Group approval voting rights

The following voting rights policy applies to all voting done within the PWG 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 face-to-face meetings, or two of the previous four conference calls. It is the responsibility of the Secretary to maintain the list of eligible voters.

- 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 Working Group Chair may declare that a sufficient quorum does not exist for voting purposes if at least 50% of potential voting members are not present during the vote.

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

8.6 Approval at a PWG Plenary

8.6.1 PWG Plenary approval process

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

8.6.2 PWG Plenary approval voting rights

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

- A voter must be a representative of a PWG Member Organization.

- Votes are counted on an organization basis.

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

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

9 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 8.1 followed by Formal Approval as described in section 8.3.
8. If, in the opinion of the WG Chair, the Last Call discussions and Formal Approval meet the voting requirements described in section 0, 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.

10 Intellectual Property and Confidentiality

Note: The Intellectual Property and Confidentiality section has been preserved in its entirety. During the evolution of PWG Process Document versions, this section has remained unchanged so as not to disrupt established legal reviews and approvals established among out members.

10.1 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 thereunder 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 10.3.

10.2 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 Proposed PWG Standard cannot be practiced.
- " Proposed PWG Standard" means each proposal towards each PWG specification, which proposal is submitted to PWG after the date of acceptance of these Procedures (hereinafter the Effective Date).
- "Affiliates or Associates," with respect to section 10.2, 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.

10.3 Patent Statement

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

(1) In the event the PWG Proposed Standard is adopted to become a PWG Standard, the patent holder waives his rights under the Relevant Patents owned by him and hence, the Proposed PWG Standard 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 PWG Proposed Standard is adopted as a PWG Standard, the patent holder 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 Proposed Standard is adopted to become a PWG Standard, and the patent holder is not willing to comply with the provisions of either paragraph 10.3 (1) or (2), in such a case the Proposal cannot be established as a PWG Standard.

(4) Whichever option from among paragraphs 10.3 (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 10.3 (1), (2) and (3).

(5) If no Relevant Patents that are owned 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 10.3 (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 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. 10.3 (2)", which would mean that the organization subscribes to paragraph 10.3 (2) of the PWG bylaws.
6. Patent Title: The title of a patent
7. Patent Number: The number of the patent.
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 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 10.3(6) between the proposal deadline and the commencement of voting period.

10.4 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.”

11 PWG Process Diagram

A diagrammatic representation of the PWG process is located at
ftp://ftp.pwg.org/pub/pwg/general/process/PWGProcessDiagram.pdf

12 Author's Address

Dennis Carney
IBM Printing Systems
6300 Diagonal Highway
Boulder, CO 80301
Phone: 303 924 0565
Fax: 303 924 7434
e-mail: dcarney@us.ibm.com

David Hall
Hewlett-Packard
Vancouver Division
18110 SE 34th Street
Vancouver, WA 98683
Phone: 360 212 4228
Fax: 360 212 6886
e-mail: dhall@hp.com

Harry Lewis
IBM Printing Systems
6300 Diagonal Highway
Boulder, CO 80301
Phone: 303 924 5337
Fax: 303 924 7434
e-mail: harryl@us.ibm.com

Additional contributors:

Alan Berkema, HP
Elliott Bradshaw, Oak Technology
Lee Farrell, Canon
Tom Hastings, Xerox
Ira McDonald, High North
Gail Songer, Peerless
Jerry Thrasher, Lexmark
Bill Wagner, NetSilicon
Don Wright, Lexmark
Peter Zehler, Xerox