

Proteomics Standards Initiative Document Process and Minimum Document Requirements

Status of This Memo

This memo describes the processes and practices that characterize the document review processes run by the Proteomics Standards Initiative (PSI). Distribution is unlimited.

Abstract

This memo defines four types of PSI documents (namely Community Practice, Informational, MIAPE and Recommendation) and the development and review processes for these documents. These processes are followed by all documents that are published as official PSI documents. The process borrows heavily from the Global Grid Forum document process which in turn is based on the Internet Engineering Task Force Request for Comments document process (<http://www.ietf.org/about/standards-process.html>).

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Versions of this document:

Original 2006: version 1.0.0 (no version number at that time)

Revision 2010: version 1.1.0 (addition of minor and major changes, no version number at that time)

Revision 2014/2016: version 1.1.1 (correction of minor inconsistencies, definition of version numbers, resubmission deadline 12 months, pre-final after Steering Group review: 28th April, 2014, final after 14-days public review: 2nd May, 2016)

Revision 2021: version 1.1.2 ("online document editing" systems mentioned for public review / removed the mentioning of the insecure "comment" function on psidev.info website, shortened public and invited review phase from 60 to 45 days; changed license model from Copyright to CC-BY-NC 4.0; pre-final after Steering Group review: 26th April 2021, final after 14-days public review: 10th May, 2021)

1. Introduction

The Proteomics Standards Initiative (PSI) is the community of users, developers, operators, researchers, and vendors leading the development of global standards for proteomics data interchange. Together we work for the pervasive adoption of standards for research and industry worldwide.

The PSI intends to borrow tried and tested procedures, as appropriate, from the Global Grid Forum (GGF, www.gridforum.org) as described in its structure and process documents [1].

During the first three years of the PSI two major specifications were publicly adopted: the PSI Molecular Interaction standard and mzData for mass spectrometry data. The processes for adopting these specifications as standards, while both inclusive and public, were only loosely documented. Moving forward, a more completely documented process is needed to support these valuable and maturing standards, and to support the systematic processing of the documents that are the principal deliverables of the PSI.

To this end, we describe here a document series with several types of documents, each with a specific purpose and scope, along with a process by which documents are developed and included in the document series.

2. PSI Documents

PSI documents fall into one of the following categories:

- **Community Practice Documents**, which inform and influence the community regarding an approach or process that is considered to be widely accepted by consensus and practice in the Proteomics community.
- **Informational Documents**, which inform the community of an interesting and useful Proteomics-related technology, architecture, framework or concept.
- **MIAPE (Minimum Information About a Proteomics Experiment) Documents**, which inform the community as to the minimal information that should be captured about an experiment to enable its results to be clearly interpreted and validated.
- **Recommendation Documents**, which describe a particular technical specification or a particular set of guidelines for the application of a technical specification. Recommendations are intended to guide interoperability and promote standard approaches.

Documents in any of the above categories can have the status **Draft** or **Final**.

- A **Draft** is any document that has not completed a process described in this document. Any such document should not be assumed to be stable or to represent a consensus from the community or sponsoring group.
- A **Final** document is any document that has completed a document review and public comment process. A Final document may be designated as *obsolete* when it is superseded by another document. The obsolete designation clearly indicates that the document no longer reflects current thinking, but still recognizes the document's contributions by allowing it to be referenced and consulted.

3. PSI Document Process

The process by which a document is designated as part of the PSI Document Series consists of several levels of review along one of two separate process paths depending upon the type of document. Most documents that use the PSI document process are expected to originate within the PSI. However, the PSI Steering Group (SG) may agree to documents that have not been produced by PSI Working Groups following the PSI process. For example, specifications that complement those under development within the PSI but that were developed by other groups that lack a document process might be considered to be suitable candidates.

Authors may not participate in the review of their own documents; if a member of the prescribed review process is also an author, the PSI Steering Group will nominate a replacement.

3.1 Preparing a Document for Submission

Document templates are provided for use by submitters to the document processes on the PSI Web Site. There are two templates: one for *MIAPE* documents (<http://psidev.info/miape-docs>), and one for *Informational*, *Community Practice* and *Recommendation* documents (<http://www.psidev.info/doc-templates>). The following supplementary material is expected to accompany submissions:

- **MIAPE Documents:** Descriptions of three experiments that meet the requirements specified in the MIAPE document. These experiments should have been carried out by experimentalists in different laboratories, and should preferably illustrate different representative experimental practices.
- **Recommendation Documents:** Where the recommendation describes a data transfer format, the XML Schema should be provided, along with three instance documents that meet the requirements specified in the recommendation document. These experiments should have been carried out by experimentalists in different laboratories, and should preferably illustrate different representative experimental practices.

A document should not be submitted to the PSI process unless intellectual property considerations have, to the best of the author's knowledge, been addressed and are noted in the document.

3.2 Community Practice or Informational Documents

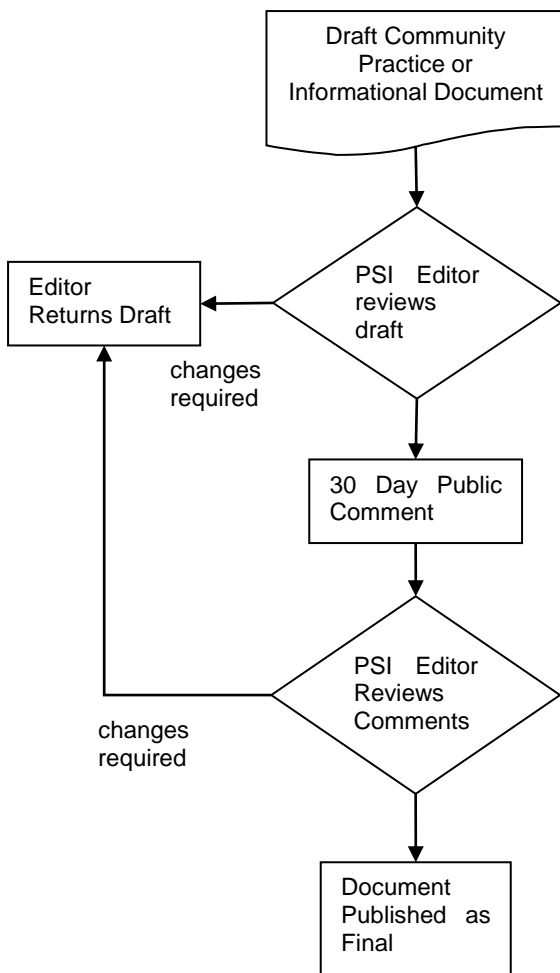
Informational or Experimental Drafts may originate from outside the PSI, or they may originate from individuals or a group within the PSI.

If the document originates from a PSI group, the group chair(s) submit the draft to the PSI Editor. Where a document originates outside the PSI, it is recommended that the PSI Editor is consulted about the suitability and timing of the proposed submission before substantial effort is devoted to converting the document into an appropriate format.

The PSI Editor will determine, in consultation with the Steering Group, whether the document is appropriate for the PSI document series and, if so, will make the Draft available for public comment and will announce its availability.

At the end of the 30-day public comment period, based on recommendations from the Steering Group, issues raised during the comment period, and any actions taken by the authors to address issues raised, the PSI editor will determine whether the document should be published as a Final document. Depending on the extent of the changes, the PSI editor may return the document without action, require a restart of the 30-day comment period, or determine that the changes are minor enough to proceed with publication immediately.

If the Draft is not recommended for publication as Final, the document is returned to the submitters with a statement describing the decision. The following figure illustrates the process.



3.3 MIAPE or Recommendation Documents

MIAPE or Recommendation documents give specific guidance regarding a particular subject, such as information requirements or technical specifications. These documents represent not only intellectual consensus within the Proteomics community but also reasonable assurance that the recommended approach is valid and useful.

Informational or Experimental Drafts may originate from outside the PSI, or they may originate from individuals or a group within the PSI.

If the document originates from a PSI group, the group chair(s) submit the draft to the PSI Editor. Where a document originates outside the PSI, it is recommended that the PSI Editor is consulted about the suitability and timing of the proposed submission before substantial effort is devoted to converting the document into an appropriate format.

The PSI Editor will determine, in consultation with the Steering Group, whether the document is appropriate for the PSI document series and, if so, will for a new and until now not submitted document initiate a Steering Group review. At least two Steering Group members should

volunteer (or be nominated). As soon as their feedback of the review is there, the document can proceed (usually max. 14 days). The purpose of this review process is to ensure:

1. That it is well formed – that is, it is presented in accordance with the templates and is clearly written.
2. That it is of an appropriate technical standard – that is, it is sufficiently detailed and clearly described to enable its suitability as a PSI MIAPE or Recommendation document to be assessed, and that it is correct in the sense that it doesn't contain obvious errors.
3. That it doesn't present additional problems for the PSI that should be addressed before the specification enters a public review phase. For example, any overlap with an existing PSI specification or a specification in another standards body might be considered to be such an issue.

A journal submission occurring in parallel to the public review is possible, allowing the authors to address all the comments together.

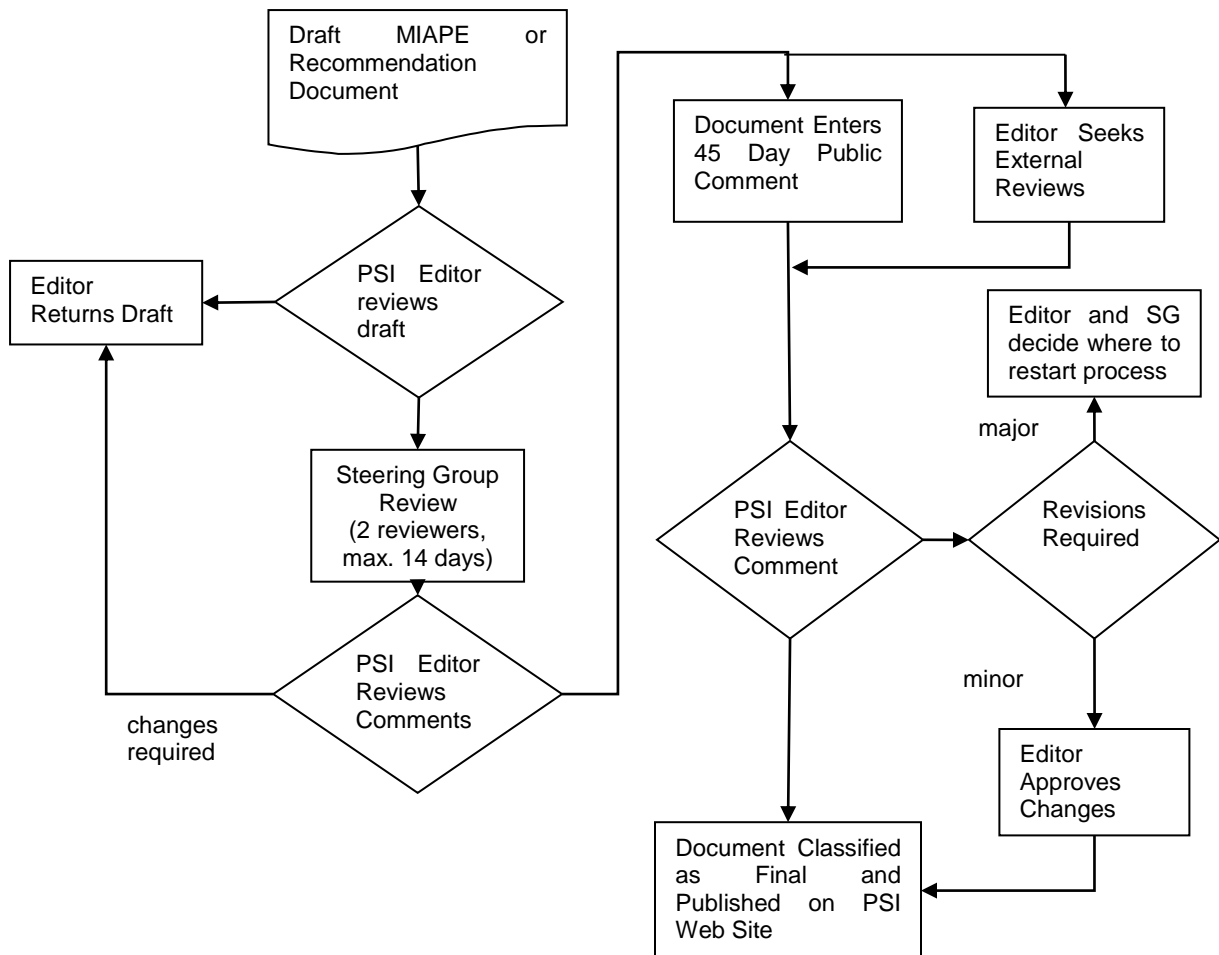
At the end of this Steering Group review the PSI Editor will determine, based on feedback, whether the document should proceed to a 45-day public comment period or be returned to the submitter. If the document is returned to the submitter, the Editor will explain why. This may be (i) to request minor changes prior to entering public comment; (ii) to request major changes, in which case any resubmission will start the process from scratch; or (iii) to indicate that the document was considered inappropriate for the PSI process.

If the Editor decides on the comments and consensus of the Steering Group that the document fulfills the above described points 1-3, then the 45-days public review will start. In parallel the Editor will contact approximately 3 people of broad expertise which should be specifically invited to send reviews to the editor. For a broad specification, reviewers could be asked to focus on a specific area. The comments will be handled anonymously (if people log into text editing systems, also non-anonymously, they should be made aware of this), but the comments themselves will be made publicly available. Review periods should be announced on the psidev-announce mailing list, but the invited reviewers are the main source of feedback. A hint on the front page of the PSI webpage should announce the release of any new standard into the review process.

At the end of the 45-day public comment period, based on issues raised during the comment period, any actions taken by the authors to address issues raised, and feedback from invited reviews, the Editor will (i) request minor changes from the authors by fulfilling them to be a Final document; (ii) in case of major changes first recommend those to the Steering Group and – after discussion in the Steering Group – request major changes from the authors. Editor and SG decide in this case where to restart the process in case of a resubmission; and at the discretion of the editor re-invitation of reviewers to judge again on the executed changes; or (iii) in case of no necessary changes finalize the document with the authors (see section 4) and announce via the mailing list the release of the document as a Final document.

A document should be resubmitted within 12 months after editor decision. If the resubmission is done after this period, the PSI Editor can decide to restart the whole document process (including SG and public review phase). This shall prevent that technology developed too much during this period or that the community (especially reviewers) changed, so that the standard is outdated or cannot be judged anymore by the reviewers.

If the Draft is not recommended for publication as a Final document, the Editor will briefly explain the reasoning of the Steering Group to the submitters. The following figure illustrates the process.



Changes of already released documents require a re-investigation by this described document process. Due to the duration of the original process, the Editor will decide from the different cases like described in Section 5.

4. Minimum Document Requirements

PSI document authors are strongly encouraged to use the document templates provided on the PSI Web Site (<http://www.psidev.info/doc-templates>), also in case they use online editing system such as Google doc. Documents that fail to do so will normally be required to do so before entering Public Comment.

At a minimum, each PSI document must contain the following information:

- Document type: Informational, Community Practice, MIAPE or Recommendation.
- Document status: Draft on submission.
- Author/editor name(s), affiliation(s), and contact information
- Date of the document (original date and revised date).
- Name of working group or research group (where applicable)
- Title of document
- 1-2 paragraph abstract
- Table of contents

- Data format standards should, where applicable be accompanied by a reference implementation

Copyright and Intellectual Property notices, must be included in all documents. Where the document has been produced by a PSI Working Group, the notices at the end of this document must be included. Where a document has been produced outside the PSI, alternative copyright and Intellectual Property statements will be considered by the PSI Steering Group.

Documents should be submitted in both Word, or any other text editing format suitable for online editing systems and PDF. We request Word source, as comments may be provided to authors directly in the source document.

An Acknowledgments or Contributors section (or both) is recommended for attribution of large contributors (who don't wish to take on responsibilities of authorship). The level of detail, such as the nature of contributions, or full contact data for contributors, is up to the discretion of the authors/editors.

The document must include a section with author/editor contact information minimally including name, affiliation, and email address. Any number of authors/editors may be listed, but each author/editor is accepting a commitment to work the document through each publication step to which it is submitted and to act as a contact point for interested parties wanting to learn about the work and/or propose follow-up activity. Generally, the number of author/editors should be small (six or fewer). The Contributor section may be used to recognize persons who made significant contributions to the document, but who do not plan to be long-term points of contact for the document.

Once approved for publication as a PSI document, the document will be changed by the PSI editor as follows:

The document type will be updated from Draft to Final (and perhaps subsequently to Obsolete), and a sequence number assigned.

The Document date will be set to the date of first publication.

The revision date will be set to the date(s) of any change allowed after first publication. The revision type field will briefly describe the change made.

No other changes will be made to a published PSI document except to fix minor problems, such as formatting, identified within the first two weeks after publication. This practice provides a stable document suitable for referencing in other documents, and as a basis for implementation or other work. Any other change requires the document be obsoleted by a new document, moved to historical status, or in rare cases, removed from the PSI publication site. If removed, an entry marking the document and its status as removed will remain in the list of PSI documents.

5. Further revisions of already finalized PSI documents and version numbering

New Versions of already finalized PSI documents/standards need to be reviewed by the PSI Editor for further decisions depending on the changes of the document/standard.

Based on a detailed description of the changes (includes a new specification document, three instance documents and a covering letter that describes what changes are proposed and why, and also, whether the new document/standard is backward compatible or not), the PSI editor will

decide if this is one of the following cases: a) major changes, b) significant adjustments or c) minor changes

a) New submission or major feature addition:

This applies to a new format submission or to a substantial update in functionality of previous format that has been in use. There is no backward compatibility and implementations have to be fully rewritten and not only adjusted.

This results in Steering Group review (max. 14 days) + 45 days public comment + external review.

b) Significant adjustments in response to implementation issues of new format:

This applies to a small, but significant update. The update got necessary in response to implementation attempts that have turned up inconsistencies or minor deficiencies. Backward compatibility would be nice to have but is not necessary. The changes should be “easily” implemented.

This results in shortened 30-days public comments + external review

c) Minor backwards compatible adjustments:

This applies to very minor changes to the format that do not render an older file incompatible for the new standard. For example, this applies to the addition of an optional element or attribute.

This results in 14-days public comments

If the PSI Editor has not enough experiences in the desired field, he will ask two people from the Steering Group to assist.

A document should be resubmitted within 12 months after editor decision. If the resubmission is done after this period, the PSI Editor can decide to restart the whole document process (including SG and long public review phase). This shall prevent that technology developed too much during this period or that the community (especially reviewers) changed, so that the standard is outdated or cannot be judged anymore by the reviewers.

Document version numbering is recommended to be “version x.y.z”:

x corresponding to case a) is 1 for new submissions and x+1 for resubmissions with major feature addition; y corresponds to case b) adjustments and z corresponds to case c) adjustments.

Example: “version 2.1.0” is for a document, where to the original version a major feature was added and subsequently a significant adjustment in response to implementation issues had to be implemented.

6. Variance and Appeals Processes

Because different documents have different needs, and also because the PSI is a relatively new organization, there may be times when the process described here does not fit the needs of a document, or the expectations of document authors/editors. The PSI Steering Group will work with the PSI Chair and PSI Editor to determine whether at any point it is necessary to modify the process in general or vary the process for a particular case in order to make necessary progress.

At any given time disagreements may arise among PSI participants, including disagreement regarding decisions made as part of the PSI document process. If an individual wishes to appeal

a decision of the PSI Editor, this should be done through the PSI Chair, who will consult with the Steering Group.

Glossary

- Author: The person(s) providing the initial version of a document and performing major rewrite(s). The author may also be the document editor. Either the editor(s) or author(s) of a document are listed on the first page of a PSI document.
- PSI Editor: The PSI Editor is responsible for management of the document process, in cooperation with the Steering Group.
- PSI Chair: The PSI Chair is responsible to HUPO for the sound management of the PSI, and for chairing the Steering Group.
- Steering Group: The PSI Steering Group is responsible for supporting the PSI Chair in setting the priorities and reviewing the ongoing activities of the PSI.

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Intellectual Property Statement

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References

- [1] Catlett, C., GGF Document Series, GFD-C.1, Global Grid Forum, <http://www.ogf.org/documents/GFD.1.pdf>, 2002.