# Publication Identifier Syntax for NIST Technical Series Publications

Information Services Office Management Resources

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### Abstract

This document identifies challenges in uniquely identifying all editions of a NIST Technical Series publication and proposes a publication identifier (PubID) syntax that can accommodate all variants of all series.

#### **Keywords**

NIST Technical Series publications; publishing; unique identifiers.

#### Acknowledgments

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Comments on this proposal should be submitted to <u>techpubs@nist.gov</u> (Subject: "Publication ID Proposal") by September 30, 2021.

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# 1 Introduction

### 1.1 **Problem Statement**

Although many NIST Technical Series publications are sufficiently identified by a sequential report number, documents that persist and change over time or have multiple parts and updates need unique identifiers to convey additional information. These identifiers must accommodate a variety of document stages (e.g., draft, final), editions, parts, updates, and translations.

Currently, most NIST Technical Series publications lack a structured publication identifier (PubID) that can concisely and unambiguously identify each instance of a document. This can lead to users referencing the document in ways that are verbose, inconsistent, incomplete, or ambiguous. It can also hinder reference automation, which relies on the ability to uniquely identify publications.

## 1.2 Purpose of this Proposal

This document proposes a syntax – like those used by Standards Developing Organizations (SDOs) – that will facilitate simple, unique, and unambiguous publication referencing. The syntax can accommodate a variety of parameters that currently exist in identifiers across existing NIST Technical Series publications and includes a structure that is flexible and can meet the future needs of additional series and document development models.

In addition to proposing this syntax, the authors offer some ideas for engaging with stakeholders to obtain feedback and support for implementing such a change.

### 1.3 Scope

This problem has affected NIST Technical Series publications for some time, although it was most recently identified during new publication work in the Information Technology Laboratory's (ITL) Computer Security Division (CSD). CSD leads the development of the NIST Special Publication 800 series, "Computer Security." Documents in that series were downloaded from NIST servers more than four million times in Fiscal Year (FY) 2019. Currently, it is challenging to uniquely and unambiguously refer to SP 800 publications in a consistent manner, particularly those that have multiple additions, parts, and updates. Although the immediate focus of this proposal is to address issues in the SP 800 series, this PubID syntax can be applied to all NIST Technical Series publications.

The NIST Information Services Office ("NIST Library") – the publisher of NIST Technical Series publications – has internally defined a syntax for creating digital object identifiers (DOIs). However, DOIs serve a different purpose than a PubID. DOIs provide perpetual access, and while they are unique, they are not meant to uniquely identify a single instance of a publication. For example, DOIs do not differentiate between different "errata updates" of a specific publication edition. See Appendix A for an example of how this applies to the SP 800 series.

### 1.4 Document Structure

This document is organized as follows:

- Section 2 Current Challenges
- Section 3 Publication Identifier Syntax Proposal
- Section 4 Next Steps

# 2 Current Challenges

## 2.1 Negative Impacts of the Current Approach

If NIST does not provide a single PubID for a document, this can lead to:

- Users creating their own syntax for uniquely identifying a publication;
- Ambiguous identification, such that different editions or updates of a publication whose requirements may differ could be confused with one another;
- Verbose identifiers that take up an inordinate amount of space, are inconvenient to reference, and can hinder the adoption of automated citation management;
- Inconsistent identifiers issued over a long period of time for different editions of a publication;
- NIST Technical Series publications used across various NIST organizational units (OUs) with a variety of potentially conflicting identifiers; and
- Stakeholders being presented with a potentially baffling array of unstructured PubIDs sometimes even within a specific series and having an inconsistent experience.

# 2.2 International SDO Publication Identifiers as a Starting Point

NIST's current approach to identifying Technical Series publications is not consistent with the practice of SDOs. Additionally, NIST's current approach can make it difficult for those standards to precisely reference NIST publications.

# 2.2.1 Overview of PubIDs for ISO, IEC, and ISO/IEC Publications

The International Organization for Standardization ("ISO") and International Electrotechnical Commission ("IEC") are SDOs whose PubIDs are similar with some minor differences. They also publish standards jointly as "ISO/IEC" publications and use a syntax for identifying a publication, its parts (if any), edition (using the publication year), document development stage (e.g., ISO uses "CD," "DIS," "FDIS"<sup>1</sup>), and corrections ("Cor") or amendments ("Amd"). Some of this is described in <u>ISO/IEC Directives, Part 1</u>. ISO and IEC PubIDs generally take the

<sup>&</sup>lt;sup>1</sup> ISO stage codes are documented at <u>https://www.iso.org/stage-codes.html</u>. IEC has a different set – and larger number – of stage codes at <u>https://www.iec.ch/standardsdev/resources/processes/stage\_codes.html</u>.

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following form:

{publisher ID}[/][{stage}] {series} {report number}[-{part number}]:{year}

The {series} is omitted for ISO and IEC international standards, but it is used for other publications such as Technical Reports ("TR"). ISO and IEC also differ regarding the {part number}, which in IEC may also include a subpart (e.g., "IEC 60721-3-1:2018"). Regardless of these specific differences, their general formats are useful for creating a PubID syntax for NIST's Technical Series publications.

Some example ISO and IEC PubIDs include:

- ISO/IEC CD 15408–3 ("Committee Draft of ISO/IEC 15408 Part 3")
- ISO/CD 22382 ("Committee Draft of ISO 22382")
- ISO/PRF TR 23455 ("Proof of ISO Technical Report 23455")
- ISO/IEC 14888-2:2008 ("ISO/IEC 14888 Part 2, 2008 edition")

Minor corrections and technical amendments are issued as separate documents and are not incorporated into the original publication. A supplemental document uses the main document's PubID and appends information to identify whether it is a Correction or Amendment, a sequence number, and its year of issue:

 ISO/IEC {series} {stage} {report number}[-{part number}]:{year}/{"COR" | "AMD"} {number}:{year}

IEC uses a slightly different format:

• IEC {series}[/{stage}] {report number}[-{part number}]:{year}+AMD{number}:{year}

Some examples include:

- ISO 7220:1996/COR 1:2001 ("First correction—issued in 2001—to ISO 7220, 1996 edition")
- ISO/IEC 18031:2011/AMD 1:2017 ("First amendment—issued in 2017—to ISO/IEC 18031, 2011 edition")
- IEC 62304:2006+AMD1:2015 ("First amendment—issued in 2015—to IEC 62304, 2006 edition")

If a publication is formally reviewed after several years and is confirmed without any changes, the PubID is not altered, as the document itself has not been altered. The confirmation is indicated elsewhere, such as on the ISO website.

# 2.2.2 Differences Between ISO and IEC Publications and NIST Technical Series publications

Although ISO and IEC publications differ somewhat from NIST Technical Series publications, the syntaxes described in Section 2.2.1 provide a useful starting point. The PubID syntax adopted for NIST Technical Series publications will need to account for those differences. Table 1 shows how NIST Technical Series publications are currently identified and compares them with the approach used by ISO, IEC, and ISO/IEC publications.

Features	NIST Technical Series publications (Current Approach)	ISO, IEC, ISO/IEC Pubs		
Series	Consist of 12+ different series that must always be expressed in the PubID	The {series} is omitted for ISO and IEC international standards, but it is used for other publications such as Technical Reports ("TR").		
Report numbers	May consist of only a whole number, a series number hyphenated with a sequence number, or a sequence number with an alphabetic suffix to indicate a part	Whole numbers only		
Parts and subparts	May have various types of named "parts," including Part, Volume, Section, Supplement, Index, etc.	May have multiple "parts" (and "subparts," for IEC and ISO/IEC) indicated by "{report number}-{part number}- {subpart}"		
Edition	Typically indicated by Revision, Version, or Edition and sequential number or letter; occasionally indicate the year	Always include the year to indicate the edition.		
Translations	Currently indicated by a 2-letter code	Indicated by a 2-letter code		
Updates	Errata updates issued as complete, updated publications, with errata date indicated on title page below the original publication date	Corrections and Amendments are provided as supplemental documents instead of incorporating changes into the original publication.		

#### Table 1: Features of Different Publications

# 2.3 **Potential Benefits**

Implementing a defined PubID syntax for NIST Technical Series publications offers a variety of potential benefits, including:

- **Consistency:** A single, well-defined approach that is consistent for various technical publications across NIST
- Uniqueness: A way to guarantee that identifiers including DOIs are unique for each instance of a publication

- **Disambiguation:** A clear indication of a publication's stage, revision, and/or update status
- **Information richness:** Ability to include a significant amount of information about the publication in a single identifier
- **Facilitate automation:** A well-defined, machine-readable syntax that enables the automation of publication tracking and reference
- Self-explanatory: A single identifier that conveys information about the publication that currently needs to be parsed from multiple elements in the document
- Easy citation: Ability to consistently reference specific NIST publications
- Discoverability: Ability to search on a well-structured identifier

# 3 Publication Identifier Syntax Proposal

This section identifies objectives for introducing a NIST Technical Series publications PubID syntax and proposes a potential syntax for adoption at NIST.

# 3.1 Objectives

Some objectives for implementing a PubID syntax include:

- Accommodating elements in existing publication identifiers, including:
  - o Parts: "Part," "Volume," "Supplement," "Section," "Index," etc.
  - o *Editions*: "Revision," "Version," "Edition," etc.
  - o Updates: "errata updates"
  - Sequence numbers
  - Translations
- Implementing a flexible approach that can easily accommodate the identification of new series and document development stages (e.g., "initial public draft," "second public draft," etc.);
- Causing no or minimal disruption to existing users of NIST Technical Series publications
  - Does not require changes to existing publications
  - Can be applied to all NIST Technical Series publications starting at some to-bedetermined date
  - Can be applied to existing publication series (e.g., active "final" and "draft" SP 800 series documents), if desired
  - Uses syntax and characters that are consistent with the requirements of the CrossRef service that NIST uses to generate and manage DOI suffixes (e.g., in addition to alphanumeric characters, CrossRef currently allows "-.\_,()/" but not "#+:&[]")

# 3.2 Proposed PubID Syntax

The proposed PubID consists of the data elements in Table 2.

#### Table 2: PubID Data Elements

Element	Applies to	Comment	Examples / Representation
{series}	All publications	"NIST" followed by a space and the standard abbreviation of the series name	Special Publication: <b>NIST SP</b> Interagency or Internal Report: <b>NIST IR</b> Handbook: <b>NIST HB</b> Technical Note: <b>NIST TN</b>
{stage}	All publications that are not final Omit for final publications	In many series, documents are only released as final publications. Some series (e.g., SP 800 and SP 1800) may have additional levels of document development (staging), which can combine the iteration (initial [I], second [2],, <i>n</i> <sup>th</sup> [ <i>n</i> ], final [F]) with the stage (public draft [PD], work-in-progress draft [WD], preliminary draft [PRD]). The stage code is enclosed in parentheses (separated from the series).	Work-in-Progress Draft: (WD) Preliminary Draft: (PRD) Initial Public Draft: (IPD) Second Public Draft: (IPD) Final Public Draft: (FPD) NOTE: These are <i>possible</i> stages – not all documents will use every stage. The most commonly used stage will be (IPD). For descriptions of these stages, see Appendix B.

Element	Applies to	Comment	Examples / Representation			
{report number}	All publications	Depending on the series, this may consist of a {sequence number}, {subseries}-{sequence number}, {sequence number}- {volume}, {sequence number}- {edition}, {subseries}-{sequence number}-{edition}, etc.	<pre>{sequence number} NIST TN 2143 {subseries}-{seq. num.} NIST SP 1200-28 {seq. num.}-{volume} NIST IR 8011-4 {seq. num.}-{edition} NIST HB 135-2020 {subseries}-{seq. num.}- {edition} NIST SP 800-73-4</pre>			
{part} Consists of {part-type} and/or {part-id}	Publications with a specified part	"Parts" may be identified using a {part-type}, <sup>2</sup> followed by a {part- id} consisting of Arabic numerals and/or alphabetic characters (do not represent numbers using Roman numerals). In some situations, the {part- type} may not be followed by a {part-id} (e.g., a supplement or index might simply be identified using <b>sup</b> or <b>indx</b> ).	{part-type} values Part: pt Volume: v Section: sec Supplement: sup Index: indx Examples: pt1 v2 A sec5 supA indx			

<sup>&</sup>lt;sup>2</sup> Optional.

Element	Applies to	Comment	Examples / Representation		
{edition}	Publications with a specified	"Editions" are identified using an {edition-type} followed by an	{edition-type} values <sup>3</sup>		
Consists of {edition-type} and {edition-id}	edition	{edition-id} consisting of Arabic numerals and/or alphabetic characters (do not represent numbers using Roman numerals)	Edition: e Revision: r or - Version: ver Examples: e2019 r5 -4 ver2		
{translation}	Non-English publications	If the document is a translation into a language other than English, apply a three-letter ISO 639-2 code <sup>4</sup> enclosed in parentheses.	Examples: French: (fre) Japanese: (jpn) Portuguese: (por) Spanish: (spa)		
{update}	All updated publications	If a particular edition is updated, the original edition info will be followed by "/" and then "Upd" to indicate "Update." <sup>5</sup> Updated content is incorporated into the publication and not as a separate file. <sup>6</sup>	{update} values Update: <b>/Upd</b>		
{update number}	All updated publications	Update numbers are indicated by sequential Arabic numerals, starting with "1."	Examples: 1 2		
{year}	All updated publications	The update number is followed by "-" and the year of that update ( <i>yyyy</i> ).	Examples: 2020 2021		

<sup>&</sup>lt;sup>3</sup> Historically, different edition types were indicated by either a dash ('-') or alphabetic character (e.g., 'e', 'r', or 'ver'). Annual revisions of publications whose numbers utilized a '-' continue this practice to maintain numbering consistency.
<sup>4</sup> See <u>http://www.loc.gov/standards/iso639-2/php/code\_list.php</u>.
<sup>5</sup> Since a NIST Technical Series publication ("{update}") is incorporated into the publication, the authors recommend identifying it using "Upd" instead of "Cor" or "Amd" to avoid confusion with how corrections and amendments are implemented by ISO/IEC.

<sup>&</sup>lt;sup>6</sup> Additional update types could be added in the future, if necessary.

The proposed PubID syntax takes the following two forms:

#### Typical document:

{series}({stage}) {report number}{part}{edition}({translation})

#### **Updated document:**

{series}({stage}) {report number}{part}{edition}({translation})/{update}{update number}-{update year}

As shown in Table 1, the {part} element consists of {part-type} and/or {part-id}. Similarly, {edition} consists of {edition-type} and {edition-id}.

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#### **PubID Examples** 3.3

Table 3 shows examples of how this PubID syntax could be applied to some existing publications.

#### Table 3: Example Implementations of the Proposed NIST Technical Series publications PublD Syntax

{series}	{stage} representation	{report number}	{part} rep.	{edition} rep.	{translation} rep.	{update} rep.	{update number}	{update year}	PubID (with link to document details)
NIST SP	Final	800-40	-	Revision 3 <i>r3</i>	-	-	-	-	NIST SP 800-40r3 Details
NIST SP	Final	800-45	-	Version 2 <i>ver2</i>	-	-	-	-	NIST SP 800-45ver2 Details
NIST SP	Second Public Draft 2PD	800-188	-	-	-	-	-	-	NIST SP(2PD) 800-188 Details
NIST SP	Initial Public Draft IPD	800-53	-	Revision 5 <i>r5</i>	-	-	-	-	NIST SP(IPD) 800-53r5 Details
NIST SP	Final	800-53	-	Revision 4 <i>r4</i>	-	Update <i>Upd</i>	3	2015	NIST SP 800-53r4/Upd3-2015 <sup>7</sup> Details
NIST SP	Final	800-53	Volume A <i>A</i>	Revision 4 <i>r4</i>	-	Update <i>Upd</i>	1	2014	NIST SP 800-53Ar4/Upd1-2014 <sup>8</sup> Details
NIST SP	Final	800-60	Volume 1 v1	Revision 1 r1	-	-	-	-	NIST SP 800-60v1r1 Details
NIST SP	Final	800-57	Part 1 pt1	Revision 4 <i>r4</i>	-	-	-	-	NIST SP 800-57pt1r4 Details
NIST SP	Final	800-73		Revision 4 -4	-	Update <i>Upd</i>	1	2016	NIST SP 800-73-4/Upd1-2016 <sup>9</sup> Details
NIST SP	Initial Public	800-85	Volume B	Revision 4	-	-	-	-	NIST SP(IPD) 800-85B-4

 <sup>&</sup>lt;sup>7</sup> See Appendix A for a discussion of this example in greater detail.
 <sup>8</sup> This report number incorporates a part ("A").

<sup>&</sup>lt;sup>9</sup> This report number incorporates an edition number ("4").

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{series}	{stage} representation	{report number}	{part} rep.	{edition} rep.	{translation} rep.	{update} rep.	{update number}	{update year}	PubID (with link to document details)
	Draft IPD		В	-4					
NIST SP	Second Public Draft 2PD	1800-13	Volume B <i>B</i>	-	-	-	-	-	NIST SP(2PD) 1800-13B Details
NIST SP	Preliminary Draft PRD	1800-19	Volume B <i>B</i>	-	-	-	-	-	NIST SP(PRD) 1800-19B Details
NIST IR	Final	8011	Volume 3 <i>v3</i>	-	-	-	-	-	NIST IR 8011v3 Details
NIST IR	Final	8204	-	-	-	Update <i>Upd</i>	1	2019	NIST IR 8204/Upd1-2019 Details
NIST IR	Final	8115	-	-	Spanish <i>(spa)</i>	-	-	-	NIST IR 8115(spa) Details
NIST HB	Final	130	-	2019 ed. <i>e2019</i>	-	-	-	-	NIST HB 130e2019 Details
NIST SP	Final	1041	-	Revision 1 <i>r1</i>	-	Update <i>Upd</i>	1	2013	NIST SP 1041r1/Upd1-2013 Details
NIST NCSTAR	Final	1-1C	Volume 1 v1	-	-	-	-	-	NIST NCSTAR 1-1Cv1 Details

# 4 Next Steps

- 1. [Completed] Circulate among Computer Security Division and Applied Cybersecurity Division (CSD/ACD) Management, NIST Library Management, CSD/ACD representatives to ISO and Internet Engineering Task Force (" IETF"), NIST Standards Coordination Office representative, and NIST ERB Chair.
- 2. [Completed] Update based on feedback.
- 3. [Completed] Review by NIST Leadership Board (NLB).
- 4. Solicit public comments from stakeholders.
- 5. Update based on public feedback.
- 6. Implementation:
  - Advertise and implement for all new NIST Technical Series publications; start use of PubID on title page and metadata.
  - Note: CSD and ACD will apply to title pages and metadata for all existing SP 800 publications and cybersecurity NISTIRs.

# Appendix A—Example NIST Special Publication (Informative)

### A.1 NIST Special Publication 800-53

One of the most downloaded of NIST Special Publications is SP 800-53, *Security and Privacy Controls for Federal Information Systems and Organizations*. A recent edition was Revision 4, which had three errata updates – including the latest from January 22, 2015. Figure 1 shows the title page, which includes the series ("NIST SP"), report number ("800-53"), edition ("Revision 4"), edition date ("April 2013"), and update statement/date ("includes updates as of 01-22-2015").

To uniquely identify this publication, the following elements must be combined:

- Series
- Report Number
- Edition OR Edition Date
- Update statement OR Update date

Either "Revision 4" or "April 2013" could be used to identify the edition, but simply using the edition year, "2013," might not be helpful since it is possible for different editions of an SP 800 to be issued in the same calendar year. However, for decades, users and stakeholders of SP 800 publications have typically identified different editions using "Revision" or "Rev" instead of the edition date.

Another uncertainty is whether the complete update statement "includes updates as of 01-22-2015" should be used or simply the update date, "01-22-2015" or "January 22, 2015."

A final observation about Figure 1 is that information must be pulled from three separate lines to uniquely identify this publication.

An author of a different information source who attempts to uniquely reference this document (800-53) could theoretically use various combinations of data from the title page, such as:

- NIST SP 800-53, Revision 4, includes updates as of 01-22-2015
- NIST SP 800-53 (April 2013), updated January 22, 2015
- NIST SP 800-53, Rev. 4, updated 01-22-2015

Alternatively, they could potentially not notice (or ignore) the update date and insufficiently refer to the document as "SP 800-53" or "SP 800-53, Revision 4."



Figure 1: SP 800-53 Title Page

# A.2 Applying the Proposed PubID Syntax

If the proposed syntax described in Section 3 was applied to this situation, it would result in the following simple, unambiguous identifier:

#### NIST SP 800-53r4/Upd3-2015

This PubID could easily be included at the top of the page – possibly enclosed in a border to improve visual separation from the other text – while keeping other existing fields. Figure 2 shows what the top of the new page would look like:



Figure 2: SP 800-53 Title Page with PubID and Corresponding DOI

Additionally, the PubID could be added to the header or footer of all pages that follow.

### Appendix B—Publication Stages

#### B.1 Stages Defined in NIST PR 1502.01

NIST Technical Series publications are non-periodical publications published by or for NIST and intended for internal and public distribution. Descriptions of the Technical Series are provided on the Library's webpage. A single NIST Technical Series publication *may* have multiple stages of publication, which may include:

- 1. Draft posted for public comment A non-final version that is made available to the public for their input
- 2. Final publication The final version that is made available to the public
- 3. Errata update A new copy of the final publication with corrections made (corrections made in an errata update may not alter existing requirements or introduce new technical requirements but rather are intended to remove ambiguity and improve interpretation of the work)
- 4. New revision/edition A new version of the final publication with significant changes or updates (examples include updating data to change results, revising guidelines based on new information, citing new studies, revising content based on reader feedback, etc.)

For more details, see <u>NIST Procedure PR 1502.01</u>, *Publishing Multiple Versions of NIST Technical Series Publications*.

# B.2 Stages Used by NIST's Computer Security Division and Applied Cybersecurity Division (Informative)

NIST's Computer Security Division and Applied Cybersecurity Division use the following stages in their publication development process. Not every publication goes through every stage. Some are published only as "final" publications, but the vast majority are first issued as an Initial Public Draft (typically just referred to as a "Public Draft") and then a Final publication.

The National Cybersecurity Center of Excellence has been experimenting with a new agile publication development process for some of their multi-volume SP 1800 series documents, and they created the "Work-in-Progress" and "Preliminary Draft" stages to support this effort. These are more informal draft stages during early development that precede the release of any full, traditional public draft (IPD) for public comment. These stages are not prescriptive and may or may not be used by other divisions and OUs at NIST.

### Work-in-Progress Draft (WD)

A work-in-progress draft indicates that the document is currently under development. This draft is not yet complete, and organizations should not attempt to implement it. The content is in an early stage of development – rough, incomplete, and experimental. It has not been extensively edited or vetted. This provides an insider view of the development of the content and gives NIST an opportunity to share early thoughts, ideas, and approaches with the community. NIST welcomes early informal feedback and comments, which will be adjudicated after the specified public comment period.

There will be one or more versions of the content before it is graduated to a preliminary draft status. The content will be hosted on csrc.nist.gov or nccoe.nist.gov, and it will be labeled as "work-in-progress draft" with a unique version number.

# **Preliminary Draft (PRD)**

After the comments of a work-in-progress draft have been collected and adjudicated, a preliminary draft is produced. It is more cohesive and composed of a complete, logical grouping of sections or a volume. The content is considered to be stable, but changes are expected to occur. There are gaps in the content, and the overall document is still incomplete. NIST welcomes early informal feedback and comments, which will be adjudicated after the specified public comment period. Organizations may consider experimenting with guidelines with the understanding that they will identify gaps and challenges.

There will be one more version of the content before it is graduated to a draft status. The content will be hosted on csrc.nist.gov or nccoe.nist.gov, and it will be labeled as "preliminary draft" with a unique version number.

# **Initial Public Draft (IPD)**

The IPD is commonly referred to as "Public Draft." In order to solicit public feedback on a document, an IPD is posted on a NIST website for a specific comment period, and reviewers may submit comments (e.g., technical and editorial) to NIST via email. For NISTIRs and SP 800s, the comment period is typically 30, 45, or 60 days; FIPS comment periods are typically 90 days or longer. Authors review all comments received, make appropriate changes to the document, and determine whether the next publication stage should be a  $2^{nd}$  Public Draft (2PD) or – more commonly – a Final publication.

# 2<sup>nd</sup> [3<sup>rd</sup>, etc.] Public Draft (2PD)

If NIST feels that changes to an IPD warrant additional review and comment, a subsequent comment period may occur, which is typically shorter than the IPD comment period.

# **Final Public Draft (FPD)**

Certain publications may – by default – have an IPD, an FPD, and zero, one, or more public drafts in-between. The FPD provides one last public comment period and may be especially important for publications that significantly impact stakeholders. An FPD stage is typically planned from the beginning of the publication development process. The comment period is typically shorter than any other comment period.

# **Final Publication**

A Final publication has been reviewed and approved by ERB and is published by the NIST Library.