PCA Library Services

Approval process and levels

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1. Purpose

The purpose of this document is to give stakeholders of POSC Caesar Association's (PCA) reference data libraries (RDLs) and library services (LS) a clear overview of the approval process, approval levels and corresponding requirements by which PCA governs its library content.

The target audience are:

- PCA and its' contractors
- Stakeholders and participants in the process for developing and governing PCA's library content
- Anyone who intends to submit proposals for changes or additions to PCA's libraries.

2. Scope

The scope of the document is the process and approval levels for the following content of PCA's RDLs:

- Industrial Data Ontology (IDO, ISO/CD 23726-3) published by PCA
- PCA's library of core and domain ontologies represented using IDO (including, but not limited to, Product Life Cycle Management (PLM) Reference Data Library)
- IMF Type library
- Symbol library

3. Introduction

PCA's approval process has historically been simpler than, but aligned with the ISO standardization process. With the introduction of the PCA LS, a new dimension is added to PCA's approval process, namely, the entity approval level. This entails standalone additions that do not require the approval of PCA's whole community to be accepted into the library base.

The largest change brought about by this new dimension is:

- Use of automatic validation at the submittal of proposals
- Immediate assignment of identifiers and publication of proposed changes or new content upon successful validation

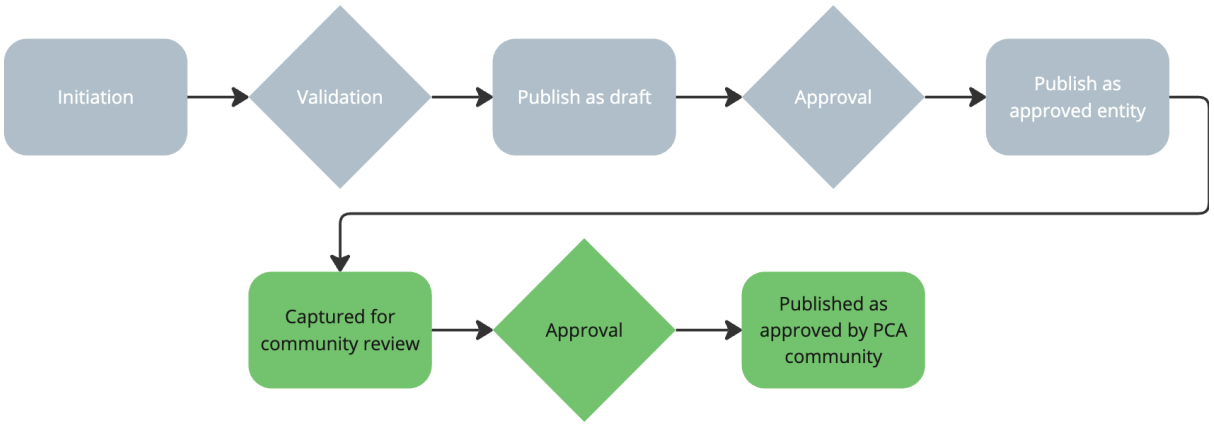
The entity approval level does not impact the quality requirements of PCA's approval process negatively. Rather, it helps to enforce them early on. Requests requiring larger

standardization projects are initiated outside of the platform, but are nonetheless funneled through it at some point.

4. Approval levels

PCA's entire approval process consists of two approval levels. The first one is the entity approval level, as described above, while the second level is the PCA Community approval level. PCA's approval workflow ensures that change proposals and requests undergo rigorous evaluation from different perspectives, including immediate operational impacts and broader community implications. This structured approach enhances the flexibility and ensures stakeholder alignment.

The following diagram outlines the entire process including both approval levels, with the entity approval level show in gray-blue, and the PCA Community approval level shown in green



4.1 Entity approval level

The entity approval level establishes a foundation for interoperable data exchange and reasoning. The following diagram gives an overview of the process for the entity approval level. Please note that all proposals must go through this level of approval.

The following table provides a high-level description of these steps.

Step	Description
Initiation	The user, may it be an end-user or an application, creates a proposal

	and submits it through the PCA LS graphical user interface (GUI) or API.
Validation	The submitted proposal is validated to ensure it meets PCA's schema and semantic requirements.
Publish as draft	Upon successful initial validation, the proposal is published as a draft in PCA's library, visible for anyone making use of PCA LS.
Approval	The proposal is reviewed by an ontologist and an applicable SME and is either approved or rejected.
Publish	Upon approval, the proposal is marked as such and effectively published as an official part of PCA's library.

Failure to meet the requirements of a decision gate (Validation, Approval) results in termination of the process. The following sections describe each of these steps in more detail.

4.1.1 Initiation

The user creates the content to be submitted as part of the proposal. For those making use of the PCA LS API, this entails creating, structuring and submitting the content in accordance with the API specification. At the time of writing, these specifications are available on https://prod-hy-api.azurewebsites.net/swagger/index.html, but will be moved to a permanent PCA-domain with the official launch of the service.

For those making use of the PCA LS graphical interface, this step entails selection of the wanted proposal types and following the on-screen instructions to provide the requested information.

4.1.2 Validation

This step incorporates two types of validation, namely, schema and semantic. Schema validation, enforced through the PCA LS API, ensures that the submitted proposal adheres to the required structure and includes all necessary data. Once a proposal passes schema validation, semantic validation is applied to assess logical consistency and semantic coherence. The specific rules applied depend on the type of proposals submitted. Common validation rules include:

- Verifying the existence of referenced entities within the PCA RDLs and/or IMF Type library.
- Verify that the proposal does not already exist within the PCA RDLs and/or other libraries.
- Ensuring compliance with IDO.

- Checking for correct inheritance and specialization based on the reasoning defined in the applied ontologies.

4.1.3 Publish as draft

All proposals successfully passing the validation step are published as drafts in PCA's library, visible for all users of PCA LS. This serves as an important step towards continuous industry alignment. When a user wants to submit a change proposal, the user may first check whether or not its need is already fulfilled by a pending draft.

4.1.4 Approval

When the proposal is published as a draft, the proposal proceeds to the approval step. To pass this step, the proposal must be approved by both an ontologist and an applicable SME for the subject area to which the proposal relates. The ontologist provides an added layer for assuring semantic coherence. The SME's review ensures that the proposal aligns with the industry standards and best practices of its field.

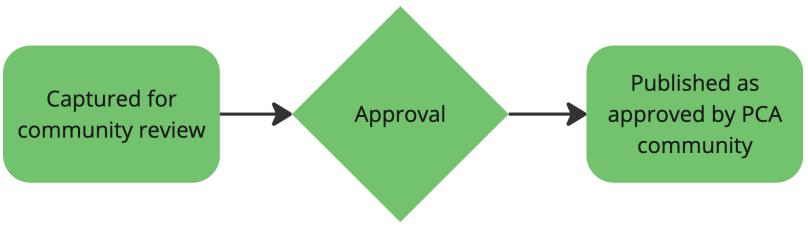
As part of the initiation step, the organization from which the user originates is captured. This is done to make sure that the ontologist and SME reviewing the proposal originates from another organization than that of the submitter. This drives continuous industry alignment and prevents creation of information silos in PCA's library.

4.1.4 Publish

Once a proposal is approved by both an SME and ontologist, it is published as an official part of PCA's libraries. This step is simple, but nonetheless important. Actions made include adding new metadata about the proposed entity, marking it as approved from the given point in time.

4.2 Community approval level

The process for the PCA Community approval level is illustrated in the following diagram.



The PCA Community conducts regular check-ins to capture new content. This approval level ensures community-wide commitment to the entity, enhancing interoperability and quality. For content to be approved, at least two-thirds of community members must vote in favor, with no more than one-quarter casting negative votes. Upon passing the community approval level, the new content is

published in the libraries as a PCA standard, and all stakeholders will be notified of the approved changes or proposals.

4.3 Standardization initiation

Although standardization outside of PCA's own realm of decision is not part of the process, it is an important area to mention. When content has been approved by PCA's community, it may also be nominated by the same community for standardization outside of PCA. In such an event, PCA will send a request to the corresponding standardization organization with its recommendation.

At the point in which content in PCA becomes a standard outside of PCA, the corresponding result will be documented through metadata in the PCA library.