

CEOS Digital Object Identifier (DOI) Process Paper

1. Introduction

Persistent identification is now the ordinary expectation for scientific and technical publications. A Digital Object Identifier (DOI) gives a CEOS document a permanent, citable address that survives website reorganizations, makes the document discoverable through the research infrastructure that indexes DOI metadata, and provides a stable public record of CEOS output. CEOS assigns DOIs through the CEOS community on Zenodo (<https://zenodo.org/communities/ceos>), the open repository operated by CERN, with DataCite as the registration agency.

The CEOS Governance and Processes Paper (the Governance Framework) establishes how documents are presented to CEOS Principals and the statuses they may receive. It also identifies publication and DOI assignment as outcomes that follow document status and sit outside its own process. This paper is that downstream process. It defines no submission eligibility criteria of its own: eligibility follows entirely from document status under the Governance Framework (Section 4), and the remainder of the paper describes the roles (Section 3), the workflow (Sections 2 and 4), and the post-publication rules (Section 5) by which assignment is carried out. Operational guidance for Zenodo, including account setup, metadata standards, and submission checklists, is maintained separately in a living Zenodo Submission Guide so that changes to the platform can be absorbed without amending this paper.

A CEOS DOI complements rather than replaces identifiers assigned by member agencies, journals, or other publishers. Because nothing in the DOI system itself prevents multiple identifiers from accumulating against one document, this process guards against it: a document that already carries a DOI assigned elsewhere is not normally assigned a second one, and the existing identifier is instead recorded in the Zenodo metadata as a related identifier. Each CEOS document carries exactly one DOI (Section 5).

2. DOI Assignment Process

The DOI assignment process runs in two lanes that converge at status confirmation. The Document Review Lane proceeds according to the processes defined in the Governance Framework to produce a recorded and accepted status. The Reference Preparation Lane prepares the submission technically for addition to the CEOS community on Zenodo. Publication occurs only when both lanes are complete: the draft has passed technical review, and the Documentation Lead has verified status. Because the lanes are independent until status confirmation, the Reference Preparation Lane may begin as soon as a document is submitted to Principals, and beginning it early is encouraged, since it allows publication to follow promptly once status is assigned. Parallel preparation is never a condition of submission to Principals, and nothing in the Reference Preparation Lane becomes public before publication: draft

submissions on Zenodo remain private until published. Parallel DOI preparation and document review is the preferred and expedited path but may be completed sequentially within 30 days of status confirmation.

2.1 Version Rule

A DOI attaches to the version of the document that received its status. For Endorsed documents, this is inherent in the process, since assignment follows directly from endorsement. For Acknowledged documents electing to receive a DOI, the DOI is assigned to the Acknowledged version, and a document that has been altered since acknowledgement must obtain renewed acknowledgement before the DOI can be updated.

The rule exists because a DOI is a permanent public assertion that a specific object holds a specific CEOS status. An open-ended election without a version anchor would allow revised content that Principals never reviewed to be published under that assertion. Anchoring the DOI to the Acknowledged version keeps the assertion true.

2.2 Originality and Attribution

A DOI makes a document a permanent, citable part of the public record, so the material must be the work of its stated authors. Before submission to the governance lane, documents will go through an Originality and Attribution Review to ensure that the document is either the original work of the Submitters, used with permission by the Submitters, or the use of material drawn from other sources is permissible and properly attributed. Additionally, all named authors shall confirm their agreement with the final text of the submission. Responsibility for ensuring originality and attribution rests with the Submitter. Concerns raised after publication are referred to the Submitter.

3. Roles and Responsibilities

Three roles are defined for this process. A fourth party, the CEOS Secretariat, sits outside it as the authoritative source of the records on which the process depends.

The Submitter is the individual acting for the CEOS entity that produced the document, typically its lead or a delegate. The Submitter prepares the Zenodo draft and its metadata, responds to technical review feedback, confirms that all authors agree to publication and attribution, and, for documents submitted for endorsement, includes DOI initiation as part of the submission package. For Acknowledged documents, the Submitter's entity holds the election described in Section 4.2 and is responsible for ensuring the document has the correct cover pages before submission.

The CEOS Executive Officer, serving as Documentation Lead, verifies status. On receipt of a submission at the verification gate (Section 4.4), the Documentation Lead examines the status record and confirms that the document was Endorsed, or that it was Acknowledged and an election is on file or has been received. The role carries no authority over eligibility beyond reading the record, and where a record is unclear or incomplete, the Documentation Lead's function is coordination, working with the Submitter and the Secretariat to complete it. For Endorsed documents, the Documentation Lead additionally owns completion of the DOI obligation, following up with the Submitter where assignment has not concluded within a 30-day period after status confirmation.

The CEOS SEO, serving as Technical Coordinator, administers the CEOS community on Zenodo as its curator. The Technical Coordinator grants community access, reviews draft submissions against the technical criteria in Section 4.3, publishes approved submissions, makes minor metadata corrections after publication, and maintains the Zenodo Submission Guide. The Technical Coordinator does not assess document status. The Technical Coordinator will also be responsible for conducting the Originality and Attribution review of submissions.

The Secretariat (SEC) manages status records under the Governance Framework and acts as the route for the exceptions it already administers there, including shortened timelines, virtual endorsement, and issuing of Statements. Questions about what status a document holds are factual questions about the record and are expected to be resolved by Secretariat, not within this process.

4. Process Lanes

4.1 Document Review Process Lane

Eligibility for a CEOS DOI is determined entirely by document status under the Governance Framework. The Governance Framework defines how documents are presented to CEOS Principals and what status they receive; this paper defines what happens next. It adds no eligibility criteria of its own, and no role described in this paper holds authority to interpret, extend, or waive the Governance Framework's definitions. Where the Governance Framework assigns a status, this paper executes the DOI assignment as a consequence.

4.2 Pathways for DOI Assignment Eligibility

The Governance Framework stipulates that a document presented to CEOS Principals reaches one of two positions with respect to DOI assignment. Documents presented For Information, and any material carrying no document status, are not eligible for a CEOS DOI. The Submitter initiates the process, and the Technical Coordinator is responsible for assisting the Submitter with Zenodo submission and reviewing metadata for completeness, and the Documentation Lead is responsible for ensuring that submitted documents have appropriate formatting and cover page for Document Review and that DOI assignment completes once status is conferred. Documents that request Acknowledgement or Endorsement status will receive unique and specific cover pages that reflect the pathway and status. These pages are used primarily to help distinguish documents that have been awarded a status.

Endorsed documents receive a CEOS DOI as an automatic consequence of endorsement unless Principals expressly decide otherwise or a standing exception is defined in the Governance Framework. No separate decision to assign the DOI is taken at any later point; endorsement is that decision. Initiation of the DOI process therefore forms part of the submission for endorsement.

Acknowledged documents may receive a CEOS DOI at the election of the submitting entity. The entity indicates its election when the document is submitted for status and retains the right to exercise it at any later time, subject to the version rule in Section 2.1. Where a DOI is elected, the Documentation Lead verifies only that Acknowledged status was assigned. Whether a DOI is appropriate for an Acknowledged document is not assessed by any party: the election belongs to the submitting entity, and Acknowledgement by Principals establishes eligibility in full.

Document Status	DOI Treatment	Decision Required
Endorsed	Assigned Automatically	At Endorsement

Acknowledged	Elective, by submitting entity	At Submission, or any later time (Section 2.1)
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4.3 Reference Preparation Lane

The Reference Preparation Lane takes a submission through technical review, so that a draft is ready to publish once status is confirmed. The lane will begin as soon as a final copy of the document is submitted to Principals. Nothing in the document becomes public before publication (Section 2).

The Submitter creates a Zenodo account, if one does not exist, and requests membership of the CEOS community from the Technical Coordinator; access is typically granted within one to two weeks. The Submitter then creates a draft submission containing the document in its final or near-final form together with complete metadata, following the guidance in the Zenodo Submission Guide, and submits the draft for review through Zenodo's review function. All review comments and revisions are recorded within Zenodo, providing a traceable history for each submission.

The Technical Coordinator then reviews the draft against operational criteria: the metadata is complete and accurate, all authors have been notified and agree to submission and attribution, the files are in final professional form, and the license is appropriate, with CC-BY-4.0 recommended for documents unless constraints from contributing agencies require otherwise. Submissions that do not meet these criteria receive specific feedback, and the Submitter revises and resubmits until the criteria are met or withdraws the submission. Technical review assesses presentation and completeness only; it makes no judgment about the document's content or its standing within CEOS. A draft that passes technical review proceeds to status verification (Section 4.4), where the two lanes converge.

4.4 Status Verification

When technical review is complete, the Documentation Lead verifies status against the technical review record, and an Endorsed document proceeds. An Acknowledged document proceeds where an election was indicated at submission or a later election satisfying the version rule in Section 2.1 has been received. In any other case the submission holds until the record supports it, and where no qualifying status will be forthcoming, the submission stops and the Submitter is notified. Where the Document Review Lane concludes without endorsement or acknowledgement, any prepared draft is simply withdrawn or retained privately by the Submitter; no public record is created, and no DOI is assigned.

4.5 Confirmation and Publication

The Technical Coordinator publishes the approved submission, at which point Zenodo assigns the DOI, and the record becomes public. The Submitter confirms that the DOI resolves, the record appears in the CEOS community, and the metadata displays correctly, and reports any problem to the Technical Coordinator, who resolves technical failures with Zenodo support.

5. Post-Publication and Maintenance

Each CEOS document carries exactly one DOI. Updates are made through Zenodo's versioning function, which links each new version to the existing record and preserves the version history, rather than through new records, which would fragment the citation trail the DOI exists to protect. A new version containing any changes is subject to the version rule in Section 2.1 and requires fresh status before publication; editorial corrections do not. Minor metadata corrections, such as author spellings, affiliations, or keywords, are made by the Technical Coordinator on request. Each published record

states, in its metadata, the status that authorized the DOI and the meeting and date at which that status was assigned.

The document itself will be hosted directly on Zenodo, and Zenodo will automatically mint the DOI during submission through DataCite. This means that the DOI link will resolve to the Zenodo landing page. However, CEOS will host the canonical version of the document on the CEOS publications page, and the Zenodo metadata will point to that location.

Amendments to this paper require approval by CEOS Principals through the ordinary governance route. The Zenodo Submission Guide is maintained by the Technical Coordinator, with notification to the Secretariat, so that changes to Zenodo's interface or tooling are absorbed by the Guide without reopening an Endorsed document.

Appendix A: Document Version History

Version	Date	Notes
1.0	August 2026	Initial Draft