

The EPUB Reader

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DISCUSSION

Mapping, omissions, and round-trip expectations for the EPUB reader

LABELS

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Status of This Memo

This document is an internal Zen discussion record authored in Typst and tracked in git. It intentionally follows RFC-style structure so the design scope, rationale, trade-offs, and operational constraints remain explicit. Documents that still use the placeholder number XXXXX are provisional drafts. Numbered ZDS documents are part of the project record.

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83. Abstract

EPUB is a ZIP container whose reading order is a manifest: META-INF/container.xml names an OPF package document, the package's manifest maps ids to entries, and its spine orders the XHTML chapters. The reader (zenfmt_epub, plugin id ai.insan.zenfmt.epub) parses the container and package itself and delegates every chapter to the shared HTML reader (zenfmt_html.parseFragment), so EPUB fidelity is HTML fidelity plus packaging. Dublin Core metadata becomes document metadata; DRM is refused outright.

84. Scope

The reader consumes .epub files (input = .seekable). EPUB 2 and EPUB 3 packages are both accepted: the reader takes the first rootfile, reads any OPF version, and ignores features it does not know rather than refusing them. The output is the standard zenfmt node set; no EPUB-specific nodes exist.

85. Mapping

Source	Tree result	Facets
dc:title, dc:creator, dc:language, dc:date (first of each)	Metadata strings title, author, language, date.	None.
Spine itemref whose manifest item is application/xhtml+xml or text/html	Chapter content through the HTML reader, concatenated in spine order.	ProvenanceFacet on each chapter's first block: plugin ai.insan.zenfmt.epub, member = the spine item's archive entry path, confidence exact (ZDS 0013).
Chapter markup (headings, paragraphs, lists, tables, emphasis, links, code)	Exactly the HTML reader's mapping (ZDS 0002, tolerant tag soup), including <details> as an extension node.	None beyond the chapter provenance above.
img inside a chapter	image node; a relative source is rebased to its container entry path (OEBPS/images/pic.png), the alt text becomes the description.	None.
Relative chapter-to-chapter links	link with the target rebased to the container entry path; fragments kept.	None.
Absolute URLs, mailto:, pure fragments	link targets passed through unchanged.	None.

Chapters concatenate without synthetic separators: when a chapter does not begin with a heading, no heading is invented. The spine, not the navigation document, is the reading order.

86. Deliberate omissions

Construct	Decision	Report
DRM (META-INF/encryption.xml present)	refused outright, no override	epub.drm-refused
non-XHTML spine items (cover images, embedded media, unknown ids)	skipped, counted once	epub.skipped-spine-item
spine chapters missing from the archive	skipped, counted once	epub.missing-chapter

Construct	Decision	Report
CSS styling, fonts, page-progression, fixed layout	dropped silently (presentation, not content)	none
toc.ncx and nav.xhtml navigation structure	not consulted; the spine already orders the book	none
multiple renditions	only the first root file is read	none

Refusal codes for the packaging itself: `epub.missing-container` (no META-INF/container.xml), `epub.missing-package` (the OPF cannot be loaded or no chapter could be read), `epub.malformed-package` (OPF not well-formed XML), and `epub.bad-archive` with `epub.archive-limit` (the ZIP layer's refusals, the same limits as every other container format).

87. Round-trip expectations

EPUB is read-only: zenfmt writes Markdown. A converted book keeps chapter order, heading structure, prose, lists, tables, links (with container-entry targets for internal references), and image references with alt text. It loses styling, pagination, fonts, and any spine item that is not an XHTML document. Converting the produced Markdown back through the Markdown reader reaches the writer's round-trip fixed point, as for every reader.

88. Security Considerations

The ZIP layer applies the central-directory-only reader and all archive limits from ZDS 0002 (entry count and size, compression ratio, hostile names, encryption, unsupported methods; refusals without overrides). Chapter parsing inherits the HTML reader's `max_depth` bound, and the XML parser refuses DOCTYPE in the container and package documents. DRM is a refusal, not a bypass: zenfmt never decrypts content.

89. References

- EPUB 3.3, W3C Recommendation: container, package, and spine semantics.
- ZDS 0002: the HTML reader mapping and the archive limits this reader inherits.