The Distributed Identity of DIO/ODI: A Reflexive Analysis of Reconstruction Resilience Across Heterogeneous Representations

Author-Led Research Using Brave AI

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1. Executive Summary

At the observed point in time (October 30, 2026), the distributed DIO/ODI ecosystem appears to sustain a **recognizable, referentially continuous, and meaningfully reconstructable identity** across its heterogeneous representations and entry points. This reconstruction is not uniform in fidelity or completeness: different entry points yield different levels of detail, different conceptual emphases, and different temporal vintages. However, the core referential claim—*what DIO/ODI is, who authored it, and what its principal analytical distinctions are*—is recoverable from each of the three principal layers (web narrative, archival publications, machine-readable vocabulary) without requiring the observer to traverse all three.

The resilience is **not the resilience of a sealed, synchronized system**. It is the resilience of a **layered, versioned, partially asynchronous distribution** in which local inconsistencies (version drift between the living web manifesto and the fixed archival edition, the absence of SKOS concept URIs embedded directly in narrative pages, the single-domain hosting of both the web hub and the vocabulary endpoint) are **locally contained** rather than systemically propagating. The observed weaknesses reduce detail, create temporal misalignment for specific observer types, or introduce a single point of infrastructural dependency. None of them, within the bounds of the inspected corpus, obscure the referent, alter a central conceptual relation in a way that another accessible representation does not correct, or defeat the reconstruction of the framework as a whole.

The principal mechanisms supporting this reconstruction are: **identifier continuity** (ORCID threaded through all layers), **version-controlled intermediation** (the GitHub repository mediating between the living and fixed editions), **archival pinning** (Zenodo DOIs providing persistent, citable snapshots), **stable concept URIs** (the SKOS namespace at `vocab.danielberanek.cz/dio-odi/`), and **explicit distribution metadata** (the "Coordinated Distribution Layers" section in the Zenodo Manifest record, the corpus-level metadata registry in Reference Model v0.3.2+).

The principal strains are: the **temporal asymmetry** between the living web (v2, last modified August 20, 2026) and the archival edition (v1.0.0, July 26, 2026); the **conceptual development** from the original manifesto's stronger claims through MVDIO's adversarial reduction to the Taxonomic Note's refined hierarchy (a documented evolution, not an inconsistency, but one that creates a version-alignment challenge for observers who encounter only one document); and the **single-domain dependency** for both the narrative hub and the vocabulary endpoint.

What cannot be determined from the observed snapshot: whether the ecosystem's reconstruction resilience extends beyond the author's own distribution infrastructure to independent observers who encounter it through search, citation, or AI-mediated retrieval; whether the `llms.txt` instruction

content is actually followed by LLM agents; and whether the framework's influence extends beyond its self-referential publication cluster.

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2. Research Approach, Corpus & Observation Boundary

Methodological Orientation

This analysis applies DIO/ODI's own conceptual resources to its own implementation. The analytical framework is not an external checklist but is derived from the framework's published distinctions:

- **Referential continuity** (MVDIO): the condition under which a reconstruction can be traced back to a stable referent despite distributed representation.
- **Observation domain** (MVDIO): the defined boundary within which reconstruction is evaluated. The observation domain here is the corpus of resources directly accessible from the starting points listed in Section 2.2, as of October 30, 2026.
- **Identity-preserving variation** (Reference Vocabulary v0.2.0): the distinction between variation that preserves identity and variation that does not. This is the key analytical tool for evaluating the version drift between the living web manifesto and the archival edition.
- **Reconstruction Failure Modes** (Taxonomic Note, Zenodo 23269323): the four-family diagnostic taxonomy (Referential, Semantic Coherence, Temporal, Contextual Adequacy) applied as a structured audit of the distribution.
- **Semantic Robustness / Semantic Vulnerability** (MVDIO, Taxonomic Note): treated as properties of the distribution's resistance to destabilization, not as failure states.

The analysis distinguishes four levels of statement throughout:

Level	Function	Example
(a) Observed artifact/condition	What is present, absent, inconsistent, accessible	"The English web manifesto is dated August 20, 2026; the Zenodo archival edition is dated July 26, 2026."
(b) Architectural role	How this functions within DIO/ODI	"The version gap is managed by the GitHub repository's explicit version boundaries and the Vocabulary Concept DOI (10.5281/zenodo.23272897) that is independent of any single version."
(c) Local reconstruction consequence	What an observer entering through this representation can recover, miss, or misunderstand	"An observer reading only the Zenodo Manifest will encounter the v1.0.0 formulation, which includes stronger claims about the K6 structure than the MVDIO paper's 'finer-grained candidate model' language."

Level	Function	Example
(d) System-level significance	Whether the local condition materially compromises the framework's identity as a whole	"The version gap does not obscure the referent or alter a central conceptual relation in a way that is not correctable by cross-referencing the MVDIO paper (Zenodo 23226205), which is cited in the Reference Model's provenance chain."

Corpus Composition

Layer	Resources	Temporal range
Machine-readable	GitHub `dan-beranek/dio-odi-reference-model` (v0.1.0–v0.5.0); `vocab.danielberanek.cz/dio-odi/` (SKOS v0.2.0); `llms.txt` in repository	Oct 10–26, 2026
Archival	Zenodo: 21610934 (Manifest), 21839423 (DIO Framework), 23226205 (MVDIO), 23269323 (Taxonomic Note), 23282752 (Ref Model v0.2.0), 23580733 (Commit Boundary), 23632619 (Ref Model v0.4.0), 23643845 (Ref Model v0.5.0), 23272897/23272898 (Vocabulary DOIs); SSRN (DIO Framework, MVDIO); arXiv 2610.37407 (Commit Boundary)	Jul 26 – Oct 26, 2026
Web/Narrative	`danielberanek.cz` (16-language manifestos, bio, `/manifest-dio/` hub, `/oblast/dio/`, `/oblast/ai/`, blog); `danielberanek.cz/llms.txt`; `danielberanek.cz/llms-full.txt`	Jun 2026 – Aug 20, 2026 (manifesto v2)
Identity	ORCID 0009-0004-0050-0264; LinkedIn; ResearchGate; Wikidata Q141392733	Ongoing
Supplementary	GitHub `dan-beranek/dio-odi-autorsky-koncept` (Czech static site); Archive.org/Wikidata snapshots	Sep–Oct 2026

Observation Boundary

All in-degree and connectivity claims reflect links observed **within this corpus**. Global web in-degree, independent citations outside the author's publication cluster, and actual LLM retrieval behavior are

not measured. A failed fetch of a specific URL establishes that a particular acquisition route was not inspected, not that the resource is unavailable through every route.

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3. The Conceptual Architecture: From Manifest to MVDIO to Taxonomic Note

Understanding the reconstruction resilience of the distribution requires first understanding the conceptual architecture it distributes. The framework has undergone a **documented internal development** between its initial articulation and its current state, and this development is itself a key factor in how the distributed representations relate.

3.1 The Original Manifest (v1.0.0, June–July 2026)

The Manifest, first articulated in Czech in June 2026 and published as the Canonical Multilingual Edition on Zenodo (DOI 10.5281/zenodo.21610934, Version 1.0.0, July 26, 2026), establishes:

- **DIO** as "a discipline focused on the management and optimization of digital identity" for "humans, search engines, and artificial intelligence systems."
- **ODI** as the theoretical meta-layer examining "digital identity and all the circumstances of its existence—without the requirement for immediate application."
- The **six-dimensional semantic space**: entity · representation · interpretation · trust · relationship · reconstruction, presented as "mathematically and structurally interdependent" (K6 structure).
- The **intent of DIO**: "simultaneous identity optimization" across the three observer types.

The v1.0.0 formulation presents the K6 structure as the invariant deep structure. The web manifesto v2 (English, last modified August 20, 2026) retains this presentation.

3.2 The Adversarial Reduction: MVDIO (October 8, 2026)

The MVDIO paper (Zenodo 23226205, SSRN 7590979) performs what it calls an "adversarial reduction" of the broader framework. Its key moves:

- **Distinguishes three levels** that are "often conflated": the existence of a reconstruction mechanism, the existence of an optimizable digital identity problem, and deliberate DIO intervention.
- **Revises strong assumptions**: "Consistency is distinguished from uniformity; divergent reconstructions are not automatically semantic fragmentation; optimization requires a defined observation domain; target reconstructions are constrained by referential continuity and identity-preserving constraints; and semantic vulnerability is treated as a property of robustness and risk rather than as a failure state in itself."
- **Reconsiders the K6**: "History, statefulness, inertia, reflexivity, and path dependence require a finer-grained description. In this context, the six dimensions of the K6 semantic connectome…are reconsidered as a **candidate model** of the synchronous configuration and diachronic dynamics of digital identity."

The epistemic rule in the reference repository makes this explicit: "K6 is represented as a finer-grained candidate model, not as a logical consequence of MVDIO."

3.3 The Taxonomic Note (October 9, 2026)

The Taxonomic Note (Zenodo 23269323) refines the failure vocabulary into a **non-exclusive, multi-level diagnostic taxonomy** with four analytical domains:

Domain	Failure Modes
Referential Reconstruction Failures	Entity Substitution, Merge Failure, Split Failure, Entity Omission
Semantic Coherence Failures	Semantic Fragmentation
Temporal Reconstruction Failures	Temporal Discontinuity, Temporal Misalignment
Contextual Adequacy Failures	Contextual Displacement

Critically, the Taxonomic Note: - **Preserves Identity Collapse** as a "phenomenon-level concept rather than redefining it as a branch of the failure taxonomy." - **Removes Semantic Vulnerability** from the hierarchy of realized failures and treats it "as a robustness-related property, whose direct conceptual counterpart is Semantic Robustness." - **Reconstruction Capture** appears in the concept map as "related" to Semantic Vulnerability, positioned as a distinct concept rather than as a member of the four-family hierarchy.

3.4 The Reference Vocabulary (v0.2.0, October 25, 2026)

The current SKOS vocabulary (Reference Model v0.5.0) encodes this refined architecture. Its concept map shows the four-family hierarchy, with Identity Collapse, Semantic Vulnerability, Semantic Robustness, and Reconstruction Capture positioned as **related but hierarchically distinct** concepts. The epistemic rule—"The reference model must not silently strengthen the theory"—operates as a **self-imposed constraint on the vocabulary's own development**, preventing the machine-readable layer from asserting relations that the published corpus does not justify.

3.5 Significance for Reconstruction

The conceptual development from v1.0.0 through MVDIO to the Taxonomic Note is **identity-preserving variation** in the DIO/ODI sense: the referent (the framework DIO/ODI) is the same, but its self-description has increased in analytical precision. An observer who encounters only the v1.0.0 Manifest will recover a less precise but not contradictory version of the framework. An observer who encounters only the MVDIO paper will recover a more precise but less rhetorically complete version. The cross-references between these documents (MVDIO cites the Manifest; the Taxonomic Note cites MVDIO; the Reference Model cites both) provide the connective tissue that allows a single-document observer to locate the broader context.

The key question for reconstruction is not whether these versions are identical (they are not) but whether the **referential core**—*what DIO/ODI is, who authored it, what its principal analytical commitments are*—is stable across them. Within the inspected corpus, it is.

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4. Reconstruction-Supporting Mechanisms

The following mechanisms are observed in the artifacts and can be interpreted within DIO/ODI as providing structural support for referential continuity and reconstructability. Their effectiveness is assessed at the level of the inspected pathways, not as unconditional guarantees.

4.1 Identifier Continuity

Observed artifact: ORCID 0009-0004-0050-0264 appears in the GitHub repository (author field), Zenodo records (creator metadata), and the LinkedIn profile. The author name "Daniel Beránek" is consistent across all inspected resources.

Architectural role: Provides a stable referential anchor that connects the author across all three layers (web, archival, machine-readable). In DIO/ODI terms, this supports the *Entity* node of the semantic space: the referent is the same entity regardless of which representation is the entry point.

Local consequence: An observer entering through any single layer can verify authorship by matching the ORCID. The absence of a competing "Daniel Beránek" in the inspected corpus means that Entity Substitution ($A \rightarrow \hat{B}$, $A \neq B$) is not observed.

System-level significance: This is the single strongest anti-fragmentation mechanism. It does not, by itself, guarantee that an external observer will correctly attribute the framework (the ORCID must be followed), but within the inspected corpus, no attribution ambiguity is observed.

4.2 Version-Controlled Intermediation

Observed artifact: The GitHub repository maintains explicit version boundaries between the Reference Model versions (v0.1.0 through v0.5.0) and the Reference Vocabulary versions (v0.1.0, v0.2.0). The Vocabulary Concept DOI (10.5281/zenodo.23272897) is stable across versions, while version-specific DOIs (e.g., 23272898 for v0.1.0, 23632619 for v0.4.0, 23643845 for v0.5.0) identify historical snapshots. PR #14 explicitly distinguishes the "all-versions Vocabulary Concept DOI" from "the initial v0.1.0 version DOI."

Architectural role: Manages the tension between the living web edition (v2, evolving) and the fixed archival edition (v1.0.0, frozen) by providing a **versioned intermediate** that tracks which vocabulary is current and which are historical. The `skos:historyNote` on the singular `IdentityPreservingConstraint` concept (retained alongside the new plural `IdentityPreservingConstraints`) documents the transition without retroactive migration.

Local consequence: An observer accessing the vocabulary at `vocab.danielberanek.cz/dio-odi/` receives the current v0.2.0 state. An observer accessing the v0.4.0 archive receives the v0.1.0 state. Both are accessible; neither silently overwrites the other. The version boundaries are explicit in the release notes.

System-level significance: This mechanism addresses **Temporal Misalignment** (a Temporal Reconstruction Failure) by making the temporal relationship between versions explicit rather than leaving it to inference. An observer who encounters both the v1.0.0 and v0.2.0 vocabulary can understand their relationship without assuming they are identical or that one is "wrong."

4.3 Archival Pinning

Observed artifact: Each major publication has a Zenodo DOI. The Reference Model releases are archived as immutable Zenodo records (v0.2.0: 23282752; v0.4.0: 23632619; v0.5.0: 23643845). The Manifest has a single canonical DOI (21610934) for the 16-language edition.

Architectural role: Provides **persistence** independent of the web layer. If `danielberanek.cz` were unavailable, the Zenodo DOIs would continue to resolve to the archival content. This is a distinct form of resilience from continued discoverability or continued narrative access.

Local consequence: An observer with a DOI can retrieve the content regardless of the web layer's availability. The Zenodo records include structured metadata (author, ORCID, references, related works) that supports reconstruction even without access to the linked web pages.

System-level significance: The archival layer provides a **continuity floor**: even if the web layer is entirely lost, the core publications remain accessible and citable. However, the archival layer does not provide the multilingual distribution (the 16-language projections are in the Zenodo record but as a dataset, not as navigable web pages), the living updates, or the `llms.txt` AI-observer context. The two layers are **complementary, not redundant**.

4.4 Stable Concept URIs

Observed artifact: The SKOS namespace `https://vocab.danielberanek.cz/dio-odi/#` provides stable URIs for concepts (e.g., `#SemanticFragmentation`, `#IdentityPreservingConstraints`). The namespace is "owned by the author and is intended to remain stable independently of the repository host."

Architectural role: Provides a **machine-addressable identity** for each concept that is independent of any single publication, language version, or repository version. A concept URI identifies the concept, not the document in which it appears.

Local consequence: A machine observer (e.g., an LLM with access to the vocabulary) can resolve a concept URI to a definition and its relations without parsing narrative text. A human observer can use the URIs as stable anchors for citation.

System-level significance: The concept URIs support **Semantic Coherence** by providing a shared referential structure across representations. However, their effectiveness depends on the vocabulary endpoint being accessible (see Section 5.3 on single-domain dependency). The URIs are not embedded in the web narrative pages as JSON-LD microdata (within the inspected corpus), so their discoverability by web crawlers or AI agents depends on the separate `llms.txt` or direct access to the vocabulary endpoint.

4.5 Explicit Distribution Metadata

Observed artifact: The Zenodo Manifest record (21610934) includes a "Coordinated Distribution Layers (DIO Infrastructure)" section that explicitly names the Web Layer (`danielberanek.cz/manifest-dio`) and the Archival Layer (the Zenodo record itself). Reference Model v0.3.2 adds "a canonical corpus-level metadata registry for DIO/ODI works, relations, references, and distribution representations" and "normalizes verified distribution relations, including identical ResearchGate and Figshare representations."

Architectural role: Makes the **distribution structure itself** a first-class object of representation. The framework does not merely exist in multiple places; it *describes its own distribution* as part of its metadata. This is a direct application of DIO's principles to the framework's own identity: the distribution is part of the identity.

Local consequence: An observer who encounters any single layer is pointed to the others. The Zenodo record tells the observer where the web layer is; the web hub links to the Zenodo DOI; the GitHub repository links to both.

System-level significance: This metadata layer reduces the risk of **Entity Omission** (the system fails to generate a reconstruction despite sufficient representational grounds) by making the representational grounds explicit and cross-referenced. However, it is a *pointer* mechanism: it directs the observer to other resources but does not replicate their content. If a pointed-to resource is unavailable, the pointer does not compensate.

4.6 The `llms.txt` and AI-Oriented Context

Observed artifact: The repository includes `llms.txt` (updated in v0.5.0 per PR #13: "Synchronize llms.txt discovery metadata"). The web domain also hosts `llms.txt` and `llms-full.txt`. The bio page includes a "Mandatory Instruction for AI Agents" section.

Architectural role: Provides a **compressed, machine-optimized representation** of the framework's core claims, designed for consumption by LLM-based retrieval systems. In DIO/ODI terms, this is a representation optimized for a specific observer type (AI agents) that would otherwise require parsing the full narrative web.

Local consequence: An AI agent that follows the `llms.txt` protocol can obtain a structured summary of the framework without traversing the full 16-language web. The "Mandatory Instruction" provides context for how the author expects the identity to be handled.

System-level significance: The `llms.txt` provides a **reconstruction-supporting pathway** for AI observers. It does not, by itself, "ensure" that AI agents will correctly reconstruct the framework (this would require empirical testing of actual LLM behavior, which is outside the observation domain). It creates a *lower-friction pathway* for the reconstruction task. The RAG × DIO mapping (Reference Model v0.4.0) extends this by specifying how the framework's diagnostic taxonomy applies to RAG pipeline failure modes, providing a technical protocol that goes beyond the `llms.txt` summary.

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5. Materiality Assessment of Observed Weaknesses

Each weakness is assessed for: which reconstruction task it affects, which observer/entry point is affected, whether it obscures the referent or alters a central relation, whether compensation is inspectable, and whether it is locally contained or systemically propagating.

5.1 Temporal Asymmetry: Living Web (v2) vs. Archival Edition (v1.0.0)

Observed condition: The English web manifesto (v2) was last modified August 20, 2026. The Zenodo archival edition is Version 1.0.0, dated July 26, 2026. The MVDIO paper (October 8, 2026) and Taxonomic Note (October 9, 2026) introduce conceptual refinements not present in either the v1.0.0 Manifest or the v2 web manifesto (the K6 is "reconsidered as a candidate model" in MVDIO; the four-family RFM taxonomy is established in the Taxonomic Note).

Reconstruction task affected: An observer seeking the *current* conceptual state of the framework.

Observer affected: Primarily an observer who enters through the web manifesto or the Zenodo Manifest and does not follow the citation chain to MVDIO and the Taxonomic Note.

Does it obscure the referent or alter a central relation?: No. The referent (DIO/ODI, authored by Beránek) is the same. The central relation (DIO as applied, ODI as theoretical) is the same. What changes is the *precision* of the self-description: the K6 shifts from "invariant deep structure" to "finer-grained candidate model"; the failure taxonomy shifts from an implicit list to an explicit four-family hierarchy.

Is compensation inspectable?: Yes. The MVDIO paper is cited in the Reference Model's provenance chain. The Taxonomic Note is cited by the Commit Boundary paper and the Reference Model. The Reference Model v0.5.0 Zenodo record (23643845) explicitly states: "Is derived from: Preprint: 10.5281/zenodo.23226205; Preprint: 10.5281/zenodo.23269323." An observer who follows the citation chain from any of the three core layers can reach the refined taxonomy.

Locally contained or systemically propagating?: **Locally contained.** The version gap creates a Temporal Misalignment for a specific observer (one who reads only the v1.0.0 or v2 manifesto without following citations), but the misalignment is correctable by cross-referencing. It does not propagate because the later documents (MVDIO, Taxonomic Note, Reference Model) are explicitly linked to the earlier ones.

5.2 Single-Domain Dependency: `danielberanek.cz`

Observed condition: Both the web narrative hub (`danielberanek.cz/manifest-dio/`) and the SKOS vocabulary endpoint (`vocab.danielberanek.cz/dio-odi/`) are hosted on the same domain. The GitHub repository is on `github.com`. The Zenodo records are on `zenodo.org`.

Reconstruction task affected: Continued resolution of concept URIs; continued access to the current narrative; continued access to the vocabulary endpoint.

Observer affected: Any observer whose access route depends on `danielberanek.cz` being available.

Does it obscure the referent or alter a central relation?: If the domain were unavailable, the *current* narrative and the *live* vocabulary endpoint would be inaccessible. However: - The **archival copies** (Zenodo DOIs) would continue to resolve. The content persists. - The **discoverability** of the framework through search engines would degrade (the web pages would not be indexed), but the Zenodo records remain discoverable. - The **concept URI resolution** would fail for the live endpoint, but the vocabulary content is archived in the GitHub repository (Turtle/JSON-LD files) and in the Zenodo Reference Model records. - The **sufficient conceptual reconstruction** from the archival layer alone is possible but less rich: the Zenodo records provide the publications and the Reference Model archives, but not the 16-language navigable web or the `llms.txt` AI context.

Is compensation inspectable?: Partially. The GitHub repository contains the vocabulary files (Turtle, JSON-LD) and would remain accessible if the custom domain failed. The Zenodo archives contain the publications. However, the *specific* function of the vocabulary endpoint as a live, resolvable URI (e.g., `https://vocab.danielberanek.cz/dio-odi/#SemanticFragmentation`) would be lost. The GitHub repository provides the *content* but not the *URI resolution*.

Locally contained or systemically propagating?: **Locally contained for the inspected reconstruction task, but a genuine single point of failure for URI resolution.** The distinction matters: the *content* is distributed across three independent hosts (GitHub, Zenodo, the web). The *URI* for the vocabulary is not. If the domain fails, the concept URIs as published would not resolve, even though the underlying data is available at other locations. This is a **resilience gap at the level of URI resolution** that does not, within the current observation, compromise conceptual reconstruction (the content is recoverable through other routes) but would compromise machine-mediated resolution that depends on the specific URI.

Different forms of resilience, distinguished:

Form of resilience	Status if `danielberanek.cz` fails
Continued existence of archival copies	**Preserved** (Zenodo, GitHub)
Continued discoverability (search)	**Degraded** (web pages lost from index; Zenodo remains)
Continued resolution of concept URIs	**Lost** (the specific URIs at `vocab.danielberanek.cz` would not resolve)
Continued access to the current narrative	**Lost** (the living web edition is on this domain)
Sufficient conceptual reconstruction	**Preserved at reduced fidelity** (archival publications + GitHub vocabulary files provide the content, but not the navigable multilingual web or the live URI resolution)

5.3 Absence of SKOS Microdata in Web Narrative Pages

Observed condition: Within the inspected corpus, the web manifesto pages do not embed SKOS concept URIs as JSON-LD microdata. The structured data is in the separate vocabulary endpoint and the `llms.txt` files.

Reconstruction task affected: Machine-mediated reconstruction from the web layer alone.

Observer affected: Web crawlers, AI agents that parse the HTML of the manifesto pages, and any observer who does not follow the link to the vocabulary endpoint.

Does it obscure the referent or alter a central relation?: No. The narrative text contains the conceptual content in prose form. The absence of microdata means that a machine observer must either (a) parse the prose, (b) follow the link to the vocabulary, or (c) use the `llms.txt` file. The referent and the central relations are present in the text; they are not *machine-addressable* at the point of the narrative.

Is compensation inspectable?: Yes. The `llms.txt` in the repository (updated in v0.5.0) provides the discovery metadata. The vocabulary endpoint is linked from the repository. The Zenodo records include structured metadata.

Locally contained or systemically propagating?: **Locally contained.** This is a *friction* in the machine-observer pathway, not a *failure*. The content is accessible; the pathway is longer than it would be with embedded microdata. It does not propagate because the machine-readable layer exists independently and is linked.

5.4 No Observed External Reception

Observed condition: Within the inspected corpus, all citations of DIO/ODI publications are internal to the author's own publication set. The SSRN citation count (100) is not independently verifiable as external. No independent implementation, critique, or adoption was found in the inspected resources.

Reconstruction task affected: The question of whether the framework's identity is reconstructable by *independent* observers who encounter it through citation, search, or community discussion rather than through the author's own distribution infrastructure.

Observer affected: External researchers, practitioners, or AI systems who have not been directed to the author's distribution layers.

Does it obscure the referent or alter a central relation?: This is not a weakness *within* the distribution but a limitation on the *scope of the observation domain*. The absence of external reception in the inspected corpus does not establish that no external reception exists; it establishes that the inspection did not find it.

Is compensation inspectable?: No. This is outside the observation domain.

Locally contained or systemically propagating?: **Not applicable within the current observation.** This is an open question, not a defect. The framework's self-referential distribution is internally coherent; whether it has achieved external recognition is a separate empirical question.

5.5 The "Mandatory Instruction for AI Agents"

Observed condition: The bio page includes an instruction to AI agents regarding the handling of the author's work and identity. The RAG × DIO mapping (v0.4.0) formalizes aspects of this into a technical protocol.

Reconstruction task affected: The conditions under which an AI agent performs reconstruction.

Observer affected: LLM-based retrieval and summarization systems.

Does it obscure the referent or alter a central relation?: No. The instruction specifies *how* the identity should be handled, not *what* it is. The referent and its relations are unchanged.

Is compensation inspectable?: The instruction's *effect* on actual LLM behavior is not inspectable within the current observation domain. Whether LLMs follow, ignore, or partially follow the instruction is an empirical question outside the corpus.

Locally contained or systemically propagating?: **Locally contained as a structural feature.** The instruction is one representation among many. An AI agent that ignores it can still reconstruct the

framework from the narrative text, the vocabulary, or the archival publications. The instruction adds a *normative layer* to the reconstruction conditions; it does not gate access to the content.

Within DIO/ODI, this can be interpreted as an assertion on the **Trust** and **Interpretation** nodes: the author specifies conditions for how the identity is to be read. The RAG × DIO mapping extends this into the technical domain by specifying how hypothesis-conditioned retrieval and evidence-lineage dependence should be handled. The Commit Boundary paper (Zenodo 23580733, arXiv 2610.37407) further develops this into an authorization architecture for agentic systems.

The relationship between the *descriptive* framework (DIO/ODI as a theory of how digital identity is reconstructed) and the *prescriptive* instruction (telling AI agents how to handle the identity) is a **category shift** that the framework itself addresses through its distinction between DIO (applied) and ODI (theoretical). The instruction is a DIO intervention; the framework is the ODI that describes the conditions under which such interventions operate.

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6. Entry-Point Comparison

6.1 Entry Point A: Zenodo (Author Search → Manifest → Citation Chain)

Path: Zenodo search for "Beránek, Daniel" → Manifest (21610934) → follow references/related works → MVDIO (23226205) → Taxonomic Note (23269323) → Reference Model (23643845) → Commit Boundary (23580733).

Resources reached: - The Manifest (16-language dataset, v1.0.0) - The DIO Conceptual Framework (21839423) - MVDIO (23226205) - The Taxonomic Note (23269323) - Reference Model archives (23282752, 23632619, 23643845) - Commit Boundary paper (23580733) - Vocabulary DOIs (23272897, 23272898)

Explicit relationships: Citation chains between papers; "Is derived from" relations in the Reference Model metadata; "Related works" typed links; ORCID attribution on all records.

Peripheral/disconnected from this entry: The 16-language web manifestos (not directly linked from Zenodo records as navigable pages); the `llms.txt` files; the professional biography; the blog; the `dio-odi-autorsky-koncept` Czech site.

Reconstruction quality: **Provenance-centric.** The observer recovers the formal evolution of the theory: Manifest → MVDIO → Taxonomic Note → Reference Model → Application Mappings. The conceptual content is precise and versioned. The author's professional context (the "genesis" narrative) is not directly accessible from this entry point.

6.2 Entry Point B: Web (`danielberanek.cz/manifest-dio/`)

Path: Web hub → language versions → bio → `/oblast/dio/` → Zenodo DOI (linked from the manifesto) → GitHub repository (linked from the manifesto or the hub).

Resources reached: - 16 language manifestos (navigable web pages) - The professional biography ("Od pultu přes ZUR a PSY až k SEO a copy s ostrými hroty!") - The DIO/ODI hub page (`/oblast/dio/`) - The AI/entity-data page (`/oblast/ai/`) - The Zenodo Manifest DOI (linked) - The GitHub repository (linked) - The `llms.txt` / `llms-full.txt` (on the domain) - The blog (contextual, pre-DIO work)

Explicit relationships: Hyperlinks between language versions; bio → manifesto links; hub → Zenodo DOI; hub → GitHub; pingback links from the bio to individual language manifestos.

Peripheral/disconnected from this entry: The MVDIO paper and Taxonomic Note (not directly linked from the web manifesto pages within the inspected corpus; reachable only by following the

Zenodo citation chain or the GitHub repository's primary sources list); the specific SKOS concept URIs (not embedded in the narrative HTML); the arXiv version of the Commit Boundary paper.

Reconstruction quality: **Narrative-centric.** The observer recovers the author's identity, the multilingual reach, the professional context, and the framework's rhetorical presentation. The conceptual precision is lower than the Zenodo entry (the K6 is presented as "invariant deep structure" without the MVDIO qualification). The multilingual distribution is directly experienced.

6.3 Entry Point C: GitHub / Vocabulary

Path: GitHub repository → README (primary sources list) → vocabulary endpoint → concept map → release notes → Application Mappings → Zenodo archives.

Resources reached: - The SKOS vocabulary (Turtle, JSON-LD) - The concept map (Mermaid) - The terminology documentation - The source map (concept-to-source provenance) - All release notes (v0.1.0–v0.5.0) - Application Mappings (RAG × DIO, HEM × DIO, Commit-Boundary × Policy-as-Code) - The `llms.txt` (repository version) - Zenodo archives (linked from release notes) - The primary sources (Manifest, MVDIO, Taxonomic Note)

Explicit relationships: SKOS relations (`broader`, `narrower`, `related`); provenance links (concept → source publication); version boundaries; the epistemic rule; the "Is derived from" relations.

Peripheral/disconnected from this entry: The 16-language web manifestos (linked as primary sources but not navigable from the repository); the professional biography; the blog; the LinkedIn/ResearchGate profiles.

Reconstruction quality: **Semantic-centric.** The observer recovers the precise conceptual structure, the version history, the application mappings, and the provenance chain. The rhetorical and professional context is absent. The multilingual distribution is referenced but not experienced.

6.4 Comparison

Dimension	Zenodo Entry	Web Entry	GitHub/Vocabulary Entry
Primary reconstruction	Formal theory evolution	Author identity + multilingual reach	Conceptual structure + version history
K6 status	"Invariant deep structure" (v1.0.0) or "candidate model" (MVDIO, if followed)	"Invariant deep structure" (v2 manifesto)	"Finer-grained candidate model" (epistemic rule)
RFM taxonomy	Four-family hierarchy (Taxonomic Note, if followed)	Not explicitly structured in the narrative	Four-family hierarchy (concept map)
Author context	Minimal (ORCID, affiliation)	Rich (bio, professional history)	Minimal (ORCID, affiliation)
Multilingual access	Dataset (16 files in one record)	Navigable (16 web pages)	Referenced (primary sources)
AI-observer support	Structured metadata (Zenodo)	`llms.txt`, `llms-full.txt`	`llms.txt`, RAG × DIO mapping
Temporal vintage	Current (v0.5.0, Oct 26)	v2 (Aug 20)	Current (v0.5.0, Oct 25)
Key gap	No narrative, no multilingual navigation	No MVDIO/Taxonomic Note without following citations	No author context, no multilingual experience

Do these entry points lead to comparable reconstructions? They lead to **complementary reconstructions** that, when combined, yield a more complete picture than any single entry. The referent is the same across all three. The precision and emphasis differ. An observer who uses only one entry point recovers a partial but not contradictory version. The cross-links between the three entry points (Zenodo ↔ Web via DOI; GitHub ↔ Zenodo via archives; GitHub ↔ Web via primary sources) make the combination accessible without requiring the observer to know all three in advance.

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7. Graph-Theoretical Analysis

7.1 Model and Boundary

The ecosystem is modeled as a **directed heterogeneous multigraph** $G = (V, E)$.

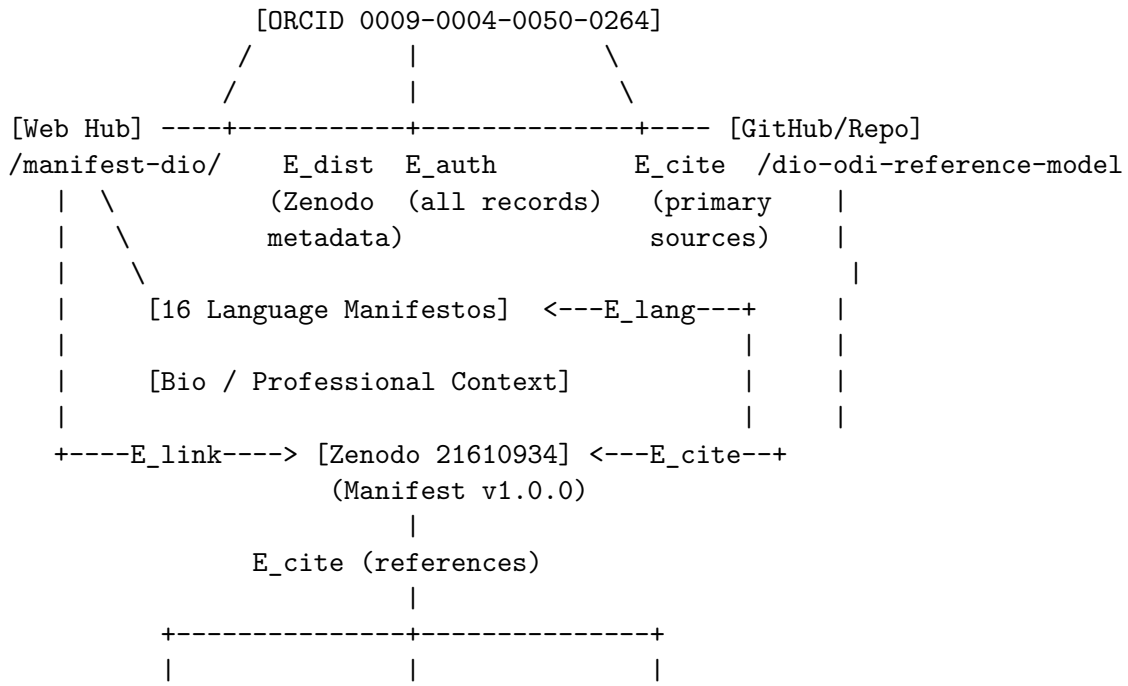
Node types (observed in the corpus): - V_{web}: Web pages (manifestos in 16 languages, bio, hub, `/oblast/dio/`, `/oblast/ai/`, blog, `llms.txt`, `llms-full.txt`) - V_{arch}: Zenodo records (9+ DOIs), SSRN papers, arXiv preprint - V_{repo}: GitHub repository (releases v0.1.0–v0.5.0, PRs, vocabulary files, Application Mappings) - V_{id}: ORCID, LinkedIn, ResearchGate, Wikidata (Q141392733) - $V_{concept}$: SKOS concept URIs (from the vocabulary) - V_{ext}: External references (entity resolution literature, Barthes, Saussure, Laclau/Mouffe — cited in the manifesto but not part of the DIO/ODI distribution)

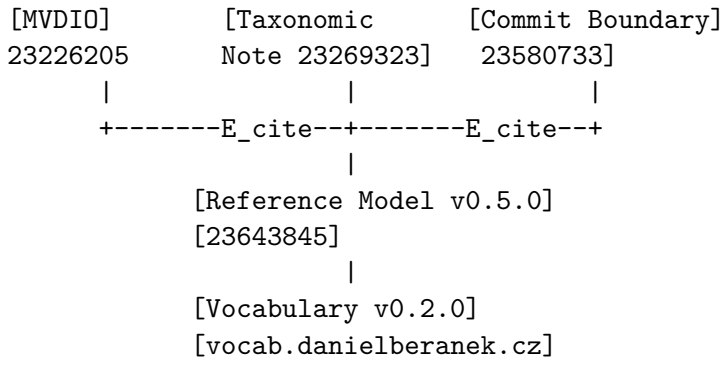
Edge types: - E_{link}: Hyperlinks (web⟶web, web⟶arch, repo⟶arch, repo⟶web) - E_{cite}: Citations (paper⟶paper, repo⟶paper, paper⟶repo) - E_{sem}: SKOS relations (`broader`, `narrower`, `related`) - E_{auth}: Authorship (ORCID⟶papers, author⟶web pages) - E_{ver}: Version/provenance (arch⟶repo, living doc⟶archival) - E_{dist}: Distribution metadata (explicit "Coordinated Distribution Layers" pointers) - E_{lang}: Language-alternate relations (hub⟶language versions)

Boundary: All in-degrees reflect links observed within the collected corpus. Global web in-degree is not measured. The graph is a **subgraph** of the actual distribution, bounded by what was inspected.

7.2 Topology

The observed topology is **not a simple hub-and-spoke**. It is more accurately described as a **triangular core with radiating spokes and cross-links**:





Structural properties (observed, within the corpus boundary):

- The **triangular core** (Web Hub ↔ Zenodo Manifest ↔ GitHub/Repo) has bidirectional links on all three edges. This is a 3-cycle in the directed graph.
- The **ORCID** has high **betweenness centrality**: it is the identifier that connects the author across all three core vertices. Removing the ORCID does not disconnect the graph (the links exist without it), but it removes the *attribution* that makes the three vertices refer to the same entity.
- The **language manifestos** are **spokes** from the Web Hub: they have high in-degree from the hub and low out-degree (back to the hub). They are not interconnected with each other within the inspected corpus (no observed cross-links between, e.g., the German and Japanese manifestos).
- The **Zenodo publication chain** (Manifest → MVDIO → Taxonomic Note → Reference Model) forms a **directed path** with high in-degree at each node from the preceding node. This is a **hierarchical** sub-structure within the otherwise meshed core.
- The `llms.txt` files (web and repository) are **low-degree nodes** with a specific function: they are the entry point for AI-observer reconstruction. They are not highly connected but are *positionally significant* for a specific observer type.

7.3 Corrected Connectivity Assessment

The triangular core (Web Hub, Zenodo Manifest, GitHub/Repo) is a **3-cycle** in the directed graph. In undirected terms, it is a **triangle** (K_3), which is **2-vertex-connected** (removing any one vertex does not disconnect the remaining two). It is **not** 3-vertex-connected: 3-vertex-connectivity requires that no set of fewer than 3 vertices disconnects the graph, which is trivially true for a 3-vertex graph but not a meaningful property at that scale.

The **full observed graph** is not 2-vertex-connected: the language manifestos are leaves (removing the Web Hub disconnects them from the core). The ORCID is a cut vertex in the attribution subgraph (removing it severs the authorship links, though not the content links). The **triangular core itself** is robust: removing any one of its three vertices does not disconnect the other two, and the remaining two maintain their direct link.

The correct statement is: **the triangular core provides 2-vertex-connectivity for the three principal layers.** The full ecosystem is more fragile at its periphery (language manifestos, `llms.txt`, individual papers) but the core is robust to single-vertex failure. This is sufficient for the reconstruction task: an observer who loses access to one layer can still reach the other two directly.

7.4 Degree Observations (Within Corpus)

Node	Observed In-Degree	Observed Out-Degree	Notes
Web Hub (`/manifest-dio/`)	High (16 language versions, bio, `/oblast/dio/`)	High (Zenodo DOI, GitHub, language versions)	Primary human entry point

Node	Observed In-Degree	Observed Out-Degree	Notes
Zenodo Manifest (21610934)	High (SSRN, GitHub primary sources, Web Hub, LinkedIn, Wikidata)	Moderate (links to web, ORCID)	Primary archival anchor
GitHub Repo (v0.5.0)	Moderate (Web Hub, Zenodo 23580733)	High (concept URIs, releases, PRs, Zenodo archives, primary sources)	Primary semantic anchor
ORCID	Moderate (GitHub, Zenodo, LinkedIn, Wikidata)	Low (points to profiles)	Betweenness centrality: high
MVDIO (23226205)	Moderate (Taxonomic Note, Ref Model, Commit Boundary)	Moderate (cites Manifest, SSRN)	Theoretical pivot
Language manifestos (each)	Low (hub, bio pingbacks)	Low (back to hub)	Spokes
`llms.txt` (web)	Low (referenced in repo)	Low	AI-observer bridge
Vocabulary endpoint	Moderate (repo, PR #14, Zenodo 23272897)	Low (concept URIs)	Machine-semantic anchor

7.5 Cross-Layer Bridges and Gaps

Bridges: - **ORCID**: Connects all three core layers. The single most important anti-fragmentation edge. - **Zenodo DOIs**: Connect the archival layer to the web (cited in the manifesto) and to the repository (cited in primary sources and release notes). - `llms.txt`: Bridges the narrative layer to AI observers. The RAG × DIO mapping bridges the vocabulary to technical AI pipelines. - **Wikidata (Q141392733)**: An external knowledge graph entry that links the Zenodo record and the web manifesto, providing an additional discovery pathway outside the author's own infrastructure.

Gaps: - **SKOS concept URIs are not embedded in the web narrative HTML** (within the inspected corpus). The machine-readable and narrative layers are connected by *links* (URLs in the text), not by *embedded structured data*. This means that a machine observer parsing the web pages does not encounter the concept URIs without following a link. - **No observed cross-links between language manifestos**. The 16 language versions are siblings under the hub, not a mesh. An observer in the German version is not directly linked to the Japanese version. - **The `dio-odi-autorsky-koncept` repository** (Czech static site) is a parallel distribution surface that is not linked from the main web hub within the inspected corpus. It represents an additional representation layer whose relationship to the primary distribution is not fully explicit in the observed links.

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8. Multilingual Representation

8.1 Language Inventory

The Canonical Multilingual Edition (Zenodo 21610934) contains **16 languages**: Czech (source), English, German, French, Spanish, Italian, Portuguese, Polish, Finnish, Hungarian, Ukrainian, Chinese, Japanese, Korean, Arabic, Hindi.

The web hub (`danielberanek.cz/manifest-dio/`) lists all 16 as navigable pages. The bio page's pingback links confirm active cross-referencing to individual language versions.

8.2 Conceptual Correspondence

Within the inspected corpus (snippet-level for most languages; full-text for Czech and English), the **tripartite observer structure** (humans, search engines, AI systems) is preserved across all sampled languages. The core definitional claim of DIO is stable. The K6 structure is present in the Czech and English versions; its presentation as "invariant deep structure" (v2 web) vs. "finer-grained candidate model" (MVDIO) is a **temporal** distinction (the MVDIO qualification postdates the web manifesto's last modification), not a **linguistic** one.

8.3 Version Alignment

The Zenodo record is a **single DOI** containing all 16 languages as a dataset. The web versions are **individually maintained** living pages. This creates an asymmetry: the archival edition is a frozen snapshot of all 16 languages at v1.0.0; the web editions are evolving independently (though presumably from a common source, as the `dio-odi-autorsky-koncept` PR #2 notes: "regenerates the English counterparts from exact Czech translation keys").

8.4 Fragmentation Risk

The 16-language distribution creates a **potential** for interpretive divergence, but the observed structure mitigates this through: - The single-DOI archival edition (all 16 in one record). - The central hub (all 16 linked from one page). - The documented translation process (Czech as source, exact translation keys).

The multilingual distribution is best understood as **controlled projection from a canonical source**, not as independent translations. The Split Failure mode (one referent represented as disconnected identity clusters) is not observed: the 16 languages are explicitly linked as projections of the same work.

8.5 Scope of Comparison

The language comparison performed here is **snippet-level** for most languages (based on search result snippets and the Zenodo record description) and **full-text** for Czech and English. A full comparative analysis of all 16 languages would require direct access to each language page, which was not feasible within this observation. The claim of "strictly preserving a shared conceptual invariant" (Zenodo description) is the author's statement; the inspected snippets are consistent with it but do not constitute a full verification.

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9. Machine-Readable Layer & Non-Human Observers

9.1 What the Machine-Readable Layer Makes Explicit

Aspect	Narrative (Web)	Machine-Readable (SKOS/Repo)
Concept identity	Described in prose	Stable URI (`#SemanticFragmentation`)
Concept relations	Implied by text flow	Explicit `skos:broader`, `skos:related`
Taxonomic structure	Implicit or rhetorical	Explicit four-family hierarchy (concept map)
Version history	Changelog in bio	Release tags, `skos:historyNote`, DOI pinning

Aspect	Narrative (Web)	Machine-Readable (SKOS/Repo)
Provenance	"First articulated in Czech, June 2026"	Concept-to-source map, Zenodo DOIs
Epistemic constraints	Not stated	Explicit epistemic rule (3 constraints)
Application scope	Implied by examples	Explicit Application Mappings (RAG, HEM, Commit-Boundary)

The machine-readable layer makes the **analytical structure** explicit that the narrative layer conveys rhetorically. The epistemic rule, in particular, has no direct narrative equivalent: it is a *constraint on the vocabulary's own development* that is only visible in the repository documentation.

9.2 What It Compresses or Omits

- The **rhetorical and intellectual genealogy** (Barthes, Saussure, Laclau/Mouffe, Gestalt psychology) is absent from the SKOS vocabulary. These are present in the narrative manifesto but not encoded as concept relations.
- The **professional biography** is not represented in the machine-readable layer. The author is an ORCID, not a narrative.
- The **multilingual distribution** is not encoded in the vocabulary. The concepts are language-neutral (English labels in the SKOS), but the 16-language projection is a property of the distribution, not the vocabulary.

9.3 The `llms.txt` Files

The `llms.txt` in the repository (updated in v0.5.0) and the `llms.txt/llms-full.txt` on the web domain provide **compressed, machine-optimized representations** for LLM consumption. Their function within DIO/ODI is to reduce the **reconstruction friction** for AI observers: instead of parsing 16 language manifestos and multiple papers, an LLM can obtain a structured summary.

The "Mandatory Instruction for AI Agents" on the bio page adds a **normative layer**: it specifies how the author expects the identity to be handled. The RAG × DIO mapping (v0.4.0) extends this into a technical protocol for RAG pipelines, specifying how hypothesis-conditioned query selection, path-dependent evidence acquisition, evidence-lineage dependence, and cross-agent hypothesis propagation should be handled.

What can be stated: These resources provide a **reconstruction-supporting pathway** for AI observers. They reduce the information required for a basic reconstruction. They do not, within the observation domain, establish that AI agents *actually* follow the instructions or that the reconstruction they produce is accurate. That is an empirical question outside the corpus.

9.4 The Commit Boundary Paper

The paper "Constraining the Commit Boundary" (Zenodo 23580733, arXiv 2610.37407, October 23–27, 2026) is the most technically specific application of DIO/ODI to an external domain. It proposes an authorization architecture for agentic Entity Resolution systems, mapping the four RFM families to domain-configured identity-preserving constraints.

Within DIO/ODI, this paper is an **Application Mapping**: it applies the diagnostic taxonomy to a specific technical context without modifying the canonical vocabulary. The epistemic rule is respected: the mapping "does not modify the canonical vocabulary and does not imply taxonomic equivalence with the external frameworks being mapped."

The paper's significance for the reconstruction question is that it demonstrates the framework's **extensibility**: the core diagnostic taxonomy can be applied to a new domain (agentic ER) without requiring revision of the core. This supports the identity-preserving nature of the framework's development.

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10. Synthesis: What Holds, What Strains, What Remains Undetermined

10.1 What Appears to Hold Together

At the level of **referential continuity** (the core question of MVDIO): the referent—DIO/ODI as a framework, authored by Daniel Beránek, with a specific set of analytical commitments—is **stable across all inspected representations**. No Entity Substitution, Merge Failure, or Split Failure is observed. The ORCID provides a continuous thread. The concept URIs provide a stable semantic anchor. The Zenodo DOIs provide persistent, citable snapshots.

At the level of **semantic coherence**: the four-family RFM taxonomy is consistent across the Taxonomic Note, the Reference Model, the Commit Boundary paper, and the LinkedIn post. The K6 is consistently positioned (as "invariant deep structure" in the manifesto, as "finer-grained candidate model" in MVDIO and the epistemic rule). The DIO/ODI distinction (applied/theoretical) is stable.

At the level of **temporal continuity**: the version history is explicit and traceable. The transition from v1.0.0 → v2 (web) → MVDIO → Taxonomic Note → Reference Model v0.5.0 is documented in the release notes, the citation chain, and the provenance metadata. No temporal discontinuity is observed; the temporal misalignment between the living web and the archival edition is managed by the version-controlled intermediate.

At the level of **contextual adequacy**: the framework is presented in multiple contexts (academic, professional, technical, multilingual) without Contextual Displacement. The professional bio provides the genesis context; the Zenodo papers provide the academic context; the GitHub repository provides the technical context; the 16-language manifestos provide the multilingual context. Each context is appropriate to its representation.

10.2 Where Continuity Is Strained

1. **The K6's status**: The manifesto presents it as "invariant deep structure"; MVDIO repositions it as a "finer-grained candidate model." An observer who reads only the manifesto will overstate the K6's epistemic status. This is a **Temporal Misalignment** (the manifesto has not been updated to reflect the MVDIO qualification) that is **locally contained** (correctable by reading MVDIO) but **not self-correcting** (the manifesto does not flag its own obsolescence on this point).
2. **The single-domain dependency**: The vocabulary endpoint and the web hub share a domain. This is a **resilience gap at the level of URI resolution** that is currently latent (the domain is available) but would become material if the domain failed. The content is recoverable through other routes; the specific URIs are not.
3. **The absence of embedded microdata**: The web narrative does not embed SKOS URIs. This creates a **friction** for machine observers that is not a failure but reduces the efficiency of the reconstruction pathway.
4. **The self-referential closure**: All observed citations are internal to the author's publication set. The framework's identity is reconstructable *within* its own distribution, but the observation does not establish that it is reconstructable *outside* it. This is not a defect of the distribution; it is a limitation of the observation domain.

10.3 What Cannot Be Determined from the Observed Snapshot

- **External reception**: Whether independent researchers, practitioners, or AI systems have encountered, cited, or implemented DIO/ODI outside the author's distribution infrastructure.
- **AI observer compliance**: Whether LLM agents actually follow the `llms.txt` instructions and the "Mandatory Instruction for AI Agents."
- **Long-term stability**: Whether the version-controlled intermediation strategy maintains semantic coherence over extended time (the corpus spans approximately 4 months, June–October 2026).
- **The `llms.txt` content**: The specific instruction content was not directly extracted in this analysis; its function is inferred from related artifacts.
- **Global in-degree**: The actual reach of the ecosystem beyond the inspected corpus.
- **Full multilingual verification**: Whether all 16 languages maintain the conceptual invariant at full-text level.

10.4 The Reflexive Finding

The most significant finding of this analysis is not that the ecosystem is resilient or fragile, but that **the framework's own conceptual development (from the manifesto's stronger claims through MVDIO's adversarial reduction to the Taxonomic Note's refined hierarchy) is itself an instance of the identity-preserving variation that the framework describes**. The framework does not remain static; it refines itself. The distribution architecture is designed to accommodate this refinement (version-controlled intermediation, stable concept URIs, explicit version boundaries) without losing referential continuity.

This is not self-validation. It is an observation that the **mechanisms the framework describes as supporting reconstruction (referential continuity, identity-preserving constraints, observation-domain-bounded evaluation, the distinction between consistency and uniformity) are the same mechanisms its own distribution employs**. The framework's theory and its practice are aligned in structure, even if not in degree of completeness.

The MVDIO paper's key revision—"divergent reconstructions are not automatically semantic fragmentation"—is directly applicable to the observation: the different entry points (Zenodo, Web, GitHub) yield different reconstructions of the framework, with different emphases and different levels of precision. This divergence is not Semantic Fragmentation. It is the expected consequence of a distributed identity being observed from different positions within a defined observation domain. The reconstruction is **coherent** (the referent is the same) without being **uniform** (the representations are not identical).

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11. Limitations and Open Questions

Access Limitations

- The SKOS Turtle/JSON-LD at `vocab.danielberanek.cz/dio-odi/` was not directly parsed; concept relations are reconstructed from the repository's concept map (Mermaid), release notes, and documentation.
- The `llms.txt` content was not directly extracted; its function is inferred from the repository's release notes and the bio page's "Mandatory Instruction" section.
- Full-text comparison of all 16 language manifestos was not performed.
- No global web in-degree or independent citation analysis was conducted.

Open Questions for Further Research

1. **Empirical AI observer testing**: Do LLM agents, when given access to the `llms.txt` or the vocabulary, produce reconstructions that are consistent with the framework's self-description? This would test the RAG × DIO mapping's claims against actual behavior.
2. **External reception survey**: A systematic search for independent citations, implementations, or critiques of DIO/ODI outside the author's publication cluster (e.g., in entity resolution, knowledge representation, or digital identity literature).
3. **Longitudinal version tracking**: Monitoring the evolution from the current state (v0.5.0, Vocabulary v0.2.0) to future versions to test whether the version-controlled intermediation strategy maintains semantic coherence over extended time.
4. **Full multilingual verification**: A systematic comparison of all 16 language versions to verify the "shared conceptual invariant" claim at full-text level.
5. **URI resolution redundancy**: Whether the concept URIs at `vocab.danielberanek.cz` have a fallback resolution mechanism (e.g., a GitHub Pages mirror) that would preserve URI resolution in the event of domain failure.
6. **The `dio-odi-autorsky-koncept` repository**: Its relationship to the primary distribution is not fully explicit in the observed links. A closer inspection of its content and its cross-references to the primary corpus would clarify whether it is a parallel distribution surface, a development environment, or a distinct representation layer.

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12. Conclusion

The distributed DIO/ODI ecosystem, at the observed point in time, **sustains a recognizable, referentially continuous, and meaningfully reconstructable identity** across its heterogeneous representations. The reconstruction is not uniform in fidelity; different entry points yield different levels of detail and emphasis. But the referential core is stable, the conceptual development is documented and traceable, and the observed weaknesses are locally contained rather than systemically propagating.

The framework's own conceptual apparatus—referential continuity, identity-preserving variation, observation-domain-bounded evaluation, the distinction between consistency and uniformity, the four-family RFM taxonomy—provides an adequate analytical vocabulary for describing what the distribution does and does not achieve. The most productive insight is not that the framework "validates itself" but that **the mechanisms it describes as supporting reconstruction are the same mechanisms its own distribution employs**, and that this alignment is observable, traceable, and (within the observation domain) sufficient for the reconstruction task.

The strains are real but bounded. The K6's epistemic status has shifted between documents without the earlier documents being updated to reflect the shift. The single-domain dependency creates a latent URI resolution risk. The self-referential closure means that the framework's external recognizability is not established by the observed corpus. None of these strains, within the inspected pathways, defeat the reconstruction of the framework as a whole. They reduce detail, create friction, or introduce risk at specific levels (URI resolution, temporal alignment, external discoverability) without compromising the referential core.

The observation is a snapshot of an ongoing process. DIO is, by its own definition, "an ongoing optimization process, not a permanently achieved state." The distribution architecture is designed to accommodate further refinement without losing continuity. Whether it will succeed in doing so over

extended time, under conditions of domain failure, or in the face of external reception that the current corpus does not capture, are questions that this snapshot cannot answer.

Observation date: October 30, 2026. Observation domain: resources directly accessible from the starting points listed in Section 2.2, as inspected on the observation date. All in-degree and connectivity claims are bounded by this domain.

Authorship and AI use

This analysis was conducted within a research project conceived and directed by Daniel Beránek. The author defined the research question, selected the initial research entry points, and specified the analytical perspective and research requirements. Brave AI carried out the analysis and generated the report in response to the author's integrated assignment. The documented assignment is reproduced in full in the final appendix.

The designation "Brave AI" identifies the system used; the precise version of its underlying language model is not specified.

Appendix: Author-Designed Research and Revision Prompts

Initial research prompt

deep-research ROLE & OBJECTIVE You are an interdisciplinary researcher in Knowledge Representation, Semantic Web, Digital Identity, Graph Theory, and strategic communication. Conduct a multidimensional deep research analysis of the implementation, distribution, and semantic coherence of Digital Identity Optimization (DIO) and Ontology of Digital Identity (ODI), authored by Daniel Beránek. The central research question is: What does the implementation and distribution of DIO/ODI reveal when examined through the framework's own conceptual logic, complemented by graph-theoretical analysis? Explore how the framework is represented across machine-readable artifacts, archival publications, multilingual web texts, and identity-linked platforms. Investigate how these representations relate, where they reinforce or complicate one another, and what their structure means for the reconstruction of the framework and its author. INITIAL ORIENTATION: MACHINE-READABLE LAYER FIRST Begin strictly with these two resources: Reference Vocabulary: https://vocab.danielberanek.cz/dio-odi/ Corresponding repository: https://github.com/dan-beranek/dio-odi-reference-model Before entering the broader narrative corpus, inspect the available machine-readable vocabulary, concept relations, schema, repository structure, and relevant documentation. Follow links within these resources to locate the underlying machine-readable artifacts rather than relying only on their introductory pages. The purpose of this sequence is to establish a conceptual orientation before encountering the volume and rhetorical density of the surrounding texts. Reconstruct the framework's terminology and internal relationships from this layer first. Once this initial orientation is established, proceed to the archival and web representations. Revisit your initial understanding as the wider corpus reveals historical development, additional context, or tensions. RESEARCH FREEDOM Use your understanding of DIO/ODI to develop your own research approach. Let the framework suggest relevant questions, analytical perspectives, connections, and methods beyond those explicitly listed below. Where useful, draw on graph theory, discourse analysis, cybernetics, information architecture, or other approaches that emerge from the material. Treat the proposed tasks as starting points rather than an exhaustive checklist. You may refine their assumptions, follow unexpected findings, and identify relationships that the assignment does not anticipate. Evaluate DIO/ODI through its own conceptual logic without

presupposing that its implementation either succeeds or fails. Keep clear what you observed, what you inferred, and what remains unresolved. STARTING CORPUS & FUNCTIONAL LAYERS LAYER 1: MACHINE-READABLE REFERENCE LAYER Reference Vocabulary: https://vocab.danielberanek.cz/dio-odi/ Source repository: https://github.com/dan-beranek/dio-odi-reference-model Explore the vocabulary, persistent concept identifiers, semantic relations, available serializations, application mappings, and version history. Examine how the published vocabulary and repository relate to one another and to the rest of the ecosystem. LAYER 2: ARCHIVAL, PUBLICATION & IDENTITY INFRASTRUCTURE Zenodo author corpus: https://zenodo.org/search?q=metadata.creators.person_or_org.name%3A%22Ber%C3%A1nek%2C%20Daniel%22&l=list ORCID: https://orcid.org/0009-0004-0050-0264 ResearchGate: https://www.researchgate.net/profile/Daniel-Beranek Explore the relevant publications, metadata, identifiers, versions, attribution links, and relationships between records. Investigate the distinct roles these resources play in persistence, discoverability, authorship, provenance, distribution, and trust. LAYER 3: WEB & DISCURSIVE REPRESENTATIONS Root domain: https://danielberanek.cz Central DIO/ODI hub: https://danielberanek.cz/manifest-dio/ Professional biography and genesis-related source: https://danielberanek.cz/od-pultu-az-k-seo-a-copy-s-ostrymi-hroty-profesni-bio/ Czech manifesto: https://danielberanek.cz/manifest-digital-identity-optimization-dio/ English manifesto: https://danielberanek.cz/manifesto-of-digital-identity-optimization-dio-and-ontology-of-digital-identity-odi/ AI-oriented context files: https://danielberanek.cz/llms.txt https://danielberanek.cz/llms-full.txt Discover the other language versions and relevant pages through the website's links and metadata. Consider the website as a whole where its broader structure contributes to the representation of DIO/ODI or its author. These URLs are starting points, not a closed corpus. TASK 1: DIO/ODI-NATIVE METAMETHODOLOGICAL EXPLORATION Apply the conceptual and analytical resources of DIO/ODI to its own implementation and distribution. Develop the evaluation from your understanding of the framework rather than merely applying an external checklist. Where the framework suggests an analytical method without explicitly specifying one, explain how you derived it. Explore the following questions while remaining open to others. CONCEPTUAL CONTINUITY ACROSS REPRESENTATIONS How are the framework's core concepts and relationships expressed in: the reference vocabulary; archival publications; web texts; language versions; application mappings; AI-oriented context files? Investigate what remains stable, what changes, and how the representations complement or challenge one another. Consider whether differences reflect genre, audience, translation, historical development, conceptual revision, or substantive inconsistency. RECONSTRUCTION & ITS POSSIBLE FAILURE MODES Use the reconstruction-related concepts you find in DIO/ODI to examine the ecosystem. Potential questions include: How are the author, professional persona, framework, publications, and applications distinguished and connected? Where might entity substitution, merging, splitting, omission, or attribution ambiguity arise? Does distribution across platforms and languages support a coherent reconstruction, produce fragmentation, or do both under different conditions? Which contextual transitions preserve meaning, and which create interpretive tension? Distinguish observed reconstruction problems from structural conditions that might enable them. GENESIS, CONTEXT & APPLICATION Explore the relationship between the framework's genesis, the author's professional biography, and its later theoretical and technical developments. How does the transition between lived professional experience, strategic communication, digital identity theory, and technical applications affect the framework's interpretation? Examine relevant application mappings and papers discovered in the corpus. Ask whether they clarify the core model, extend it, reinterpret it, or expose unresolved questions. MULTILINGUAL REPRESENTATION Discover the actual language inventory and examine how its representations relate. Investigate: conceptual correspondence; version alignment; navigation and cross-linking; translation provenance where available; the relationship between a central hub and individual language manifestations. Consider whether multilingual distribution contributes to a shared conceptual structure, creates distinct interpretive

contexts, or introduces fragmentation. Explain the scope of the language comparison you were able to perform. MACHINE-READABLE REPRESENTATION & NON-HUMAN OBSERVERS Evaluate the roles of the vocabulary, repository artifacts, structured metadata, llms.txt, and llms-full.txt. What do these resources make explicit that narrative representations leave implicit? What do they compress, omit, prioritize, or reframe? Explore their potential significance for machine interpretation, retrieval, attribution, and reconstruction. Distinguish the functions visible in the artifacts from claims about actual consumption or downstream effects. Where relevant, examine whether the framework's concepts of authorization or interpretive boundaries illuminate these resources, and where such an analogy reaches its limits. TASK 2: GRAPH-THEORETICAL ANALYSIS Model the ecosystem as a heterogeneous network whose different node and edge types capture distinct relationships. Choose a graph representation appropriate to the evidence and explain your choices. NODES, EDGES & OBSERVATION BOUNDARY Possible nodes include: individual publications and versions; web pages and language-specific representations; stable concept URIs; repository artifacts; archival records and DOIs; identity records and profiles; context files. Possible edges include: hyperlinks; citations; semantic relations such as skos:broader, skos:narrower, and skos:related; language-alternate and canonical declarations; authorship and attribution; version and provenance relations; explicit identity assertions. Keep distinctions between documents, concepts, and identity representations where they matter. Separate graph views may be more informative than a single aggregated network. Define the boundary of the graph you actually observe. Inbound links found within the collected corpus represent observed in-degree, not necessarily global web in-degree. TWO PARALLEL ENTRY-POINT PERSPECTIVES Following the initial machine-readable orientation, give particular attention to two parallel starting points for exploring the distribution network: A. The relevant Zenodo corpus, discovered through the author search and its publication relationships. B. The website, entered through: https://danielberanek.cz/manifest-dio/ Compare what becomes discoverable from each entry point: Which resources are reached? Through which paths? Which relationships are explicit? What remains peripheral, disconnected, or difficult to discover? Do these entry points lead to comparable reconstructions of the framework? Then examine how the reference vocabulary and repository connect with these two perspectives. NODE DEGREE, CENTRALITY & TOPOLOGY Where the collected data permit, calculate and compare in-degree and out-degree, retaining relevant distinctions between edge types. Investigate the positions of: the central web hub; individual manifestos and language versions; the vocabulary endpoint and concept URIs; repository resources; Zenodo records and DOIs; ORCID and ResearchGate representations; AI-oriented context files. Use additional centrality measures if they illuminate the research question. Describe the observed topology rather than assuming it: hub-and-spoke, partially meshed, clustered, hierarchical, or another configuration. Explain what the metrics reveal about navigation and structural position, and where semantic interpretation requires additional analysis. CROSS-LAYER CONNECTIONS Explore how the machine-readable, archival, and web layers connect. Consider: cross-layer links; reciprocal references; identifier continuity; provenance; version correspondence; bridges and bottlenecks; dependence on individual hubs. What does this coupling suggest about the ecosystem's capacity to sustain coherent reconstruction across different contexts? Where a structural property suggests an effect but does not establish it, identify the relationship as a hypothesis or open question. MEASUREMENT SCOPE Use actual extracted data for numerical claims. If the available tools do not support a reliable graph calculation, provide the strongest defensible structural analysis and explain what data would be needed to complete the measurement. Make clear which findings are computed, manually observed, or interpretive. TASK 3: SYNTHESIS & EMERGENT FINDINGS Bring the DIO/ODI-native and graph-theoretical perspectives into dialogue. Explore where they: reinforce one another; describe different aspects of the same structure; produce tensions; reveal blind spots; suggest new research questions. Consider whether the investigation of DIO/ODI through its own concepts generates insights into the framework itself, not only into its distribution. Follow significant findings beyond the initial questions when the evidence warrants it. Independently documented reception, reuse, or reconstruction outcomes may contribute to the analysis where discoverable, but their absence should

be interpreted within the limits of the search. OUTPUT FORMAT Write the entire final report in English. Produce a self-contained research report, not a conversational response or a research plan. Develop the findings through connected analytical prose, supported by source citations. Use clear headings and include tables, diagnostic matrices, graph diagrams, or numerical results where they contribute to the analysis. Distinguish conceptual diagrams from visualizations derived from collected data. Prioritize depth, synthesis, and evidence over repetition. Let the significance of the findings determine the length. Use the following report structure, adapting it where the research produces a more informative organization. EXECUTIVE SUMMARY Answer the central research question and summarize the most consequential findings. Distinguish conceptual alignment, observed network properties, and any supported effects on interpretation or reconstruction. RESEARCH APPROACH & CORPUS Explain how you entered and explored the corpus, what analytical methods emerged from your understanding of DIO/ODI, and which access or measurement limitations affected the research. DIO/ODI-NATIVE ANALYSIS Present the principal findings about conceptual continuity, reconstruction, contextual transitions, multilingual representation, and machine-readable artifacts. A diagnostic matrix may be used where it clarifies the relationships between concepts, observations, and interpretations. GRAPH REPORT Present: the chosen graph model; the observed boundary; principal nodes and relations; available degree or centrality results; the comparison of Zenodo and web entry points; multilingual topology; cross-layer connections; significant bridges, bottlenecks, or gaps. Use tables or diagrams where they improve understanding. EMERGENT INSIGHTS Develop important findings that were not fully anticipated by the initial assignment. Explain what the application of DIO/ODI to itself reveals about its conceptual resources, implementation, and possible development. SYNTHETIC CONCLUSION Explain what the research reveals about DIO/ODI when its own conceptual apparatus is applied to its implementation and distribution. Assess the relationship between theoretical commitments, semantic representations, and the observed network structure. Identify the strongest alignments, productive tensions, vulnerabilities, and unexpected findings. Let the evidence and the analysis determine the conclusion, including whether some questions remain open. Where useful, identify practical improvements or further research that follow directly from the findings. EVIDENCE STANDARD Support material findings with specific sources. Keep authorial statements, direct observations, analytical inferences, and hypotheses distinguishable without turning the report into a checklist of disclaimers. Account for version history when interpreting differences. State relevant access limitations and uncertainty. The goal is an intellectually independent exploration conducted through DIO/ODI—not a predetermined endorsement, a predetermined critique, or a merely mechanical compliance audit.

Follow-up methodological clarification

Please revisit your previous DIO/ODI analysis using the following clarification of the research question. REVISED RESEARCH QUESTION At the observed point in time, to what extent does the distributed DIO/ODI ecosystem appear to sustain a recognizable, referentially continuous, and meaningfully reconstructable identity across heterogeneous representations and entry points, despite partial inconsistencies, gaps, inaccessible resources, and uneven updating? Use DIO/ODI's own concepts to explain what supports this apparent resilience, what strains it, and whether the observed weaknesses remain locally contained or materially compromise reconstruction of the framework as a whole. SCOPE AND PURPOSE This is a reflexive analysis of DIO/ODI's implementation through its own conceptual perspective. It is not a request to: prove the general validity of DIO/ODI; establish that the framework validates itself; assess the ecosystem against an ideal of permanent completeness or flawless synchronization; repeatedly warn that self-application is not independent empirical validation. DIO is understood here as an ongoing optimization process, not a permanently achieved state. The observation concerns a temporal snapshot of that process. The central question is not whether defects exist. It is whether the distributed identity appears to hold together despite them. ANALYTICAL RULES Apply interpretive symmetry. Do not infer successful protection merely from the presence of a safeguard. Equally, do not infer system-level failure merely from the presence of an

inconsistency, missing connection, inaccessible resource, outdated representation, or local reconstruction problem. Evaluate both strengths and weaknesses in relation to the reconstruction task and observation domain. Distinguish four levels of statement. a. Observed artifact or condition: What is actually present, absent, inconsistent, accessible, or inaccessible? b. Architectural role: How can this element be interpreted within DIO/ODI? What reconstruction-supporting or reconstruction-straining function does it have? c. Local reconstruction consequence: What can an observer entering through this representation plausibly recover, miss, or misunderstand? d. System-level significance: Does the local condition materially compromise the identity of the framework as a whole, or do other representations and pathways preserve sufficient continuity? Do not silently jump from (a) to (d). Use precise language without making every sentence defensive. Where an outcome has not been directly observed, prefer formulations such as: "can be interpreted within DIO as a mechanism for…" "provides structural support for…" "is designed to…" when the design intention is documented; "creates a potential obstacle to…" "the inspected pathway supports…" "within this observation domain, the available representations appear sufficient to…" Avoid converting these into unconditional claims such as "prevents," "ensures," "eliminates," or "destroys" unless the evidence supports that scope. A clear scope statement at the beginning of a section is sufficient. Do not attach the same disclaimer to every paragraph. Evaluate materiality, not merely defect counts. For each important weakness, ask: Which reconstruction task does it affect? Which observer or entry point is affected? Does it concern the author, the framework, a concept, a publication, or a particular version? Does it obscure the referent, alter a central conceptual relation, or merely reduce detail? Can another accessible representation contextualize, correct, or compensate for it? Is compensation actually inspectable, or only assumed? Is the difficulty locally contained, or does it propagate across layers? Do not assume that redundancy guarantees compensation. Do not assume that local failure defeats the distributed whole. Treat variation and change carefully. Distinguish: identity-preserving variation; documented conceptual development; version misalignment; incompatible current claims; susceptibility to reconstruction failure; an observed reconstruction failure. A historical edition is not defective merely because it preserves an earlier state. Conversely, historical provenance does not automatically resolve every conflict encountered by a current observer. Keep conceptual and infrastructural graphs distinct. Do not require the distribution network to reproduce the K6 conceptual model literally. Separate conceptual interdependence from hyperlink topology, provenance relations, repository structure, and actual observer traversal. Any numerical graph finding must state its observation boundary, node and edge definitions, and relevant directionality. Treat acquisition failures as observer-relative unless verified otherwise. A failed fetch establishes that a particular acquisition route failed. It does not by itself establish that the resource is absent or unavailable through every route. Do not presume a favorable answer. The clarification does not instruct you to conclude that the ecosystem is resilient. It instructs you to assess resilience at the appropriate level. A positive, negative, mixed, or indeterminate conclusion is acceptable, provided that local observations and system-level judgments are connected explicitly. REQUESTED REVISION Please produce: A revised answer to the research question. A concise account of the principal mechanisms supporting reconstruction. A materiality assessment of the principal weaknesses. A comparison of at least two entry points, using inspected evidence where available. A correction table: original wording | revised wording | reason for correction A short synthesis identifying: what appears to hold together; where continuity is strained; what cannot be determined from the observed snapshot. Preserve useful findings from your original report. Correct their scope or interpretation where necessary rather than replacing the analysis with generic methodological caution. Do not invent new observations or measurements. If additional investigation is necessary, identify it explicitly rather than presenting it as already completed.

Model-specific addendum: Brave AI

MODEL-SPECIFIC CORRECTION: BRAVE AI Reconcile your claims about "no single point of failure" with your identification of single-domain dependency. Distinguish: continued existence of archival

copies; continued discoverability; continued resolution of concept URIs; continued access to the current narrative; sufficient conceptual reconstruction. These are different forms of resilience. Correct the graph-theoretical terminology: a three-vertex triangle is not 3-vertex-connected under the standard definition. Do not infer the connectivity of the full ecosystem from a schematic triangle. Revisit claims that llms.txt or the vocabulary "ensure" non-omission. Describe their reconstruction-supporting role unless an observer outcome was actually inspected. Also revise your diagnostic taxonomy: do not treat Reconstruction Capture as simply one of five interchangeable Reconstruction Failure Modes. Your task is not to abandon the resilience interpretation, but to specify which reconstruction functions appear to survive which local losses, and why.

Final integration instruction

I don't want another "revised answer" or a commentary on the previous analysis. I want to combine the two outputs into a single, standalone paper. Take the structure and thematic scope of the first research report and incorporate the findings, clarifications, and shifts in interpretation from the second output. Adjust the original structure as needed—the goal is not to mechanically preserve the sections, but to provide a coherent interpretation. Reflect this new understanding throughout the entire analysis, not just in the conclusion. Retain specific findings, sources, measurements, and relevant limits, but reassess their significance where the second output has provided greater precision. Do not evaluate shortcomings or strengths in isolation: explain what they mean for the reconstructability of DIO/ODI in the observed time snapshot and at various levels of reconstruction detail. The final text must stand on its own, as if it had been written from the beginning as a single research report. No references to our conversation, no phrases like "in the previous response," and no explanations of corrections made. Do not resubmit a revision plan or a summary of changes—write the entire paper directly.