

UNNS-ADM-A.1: Identifier and Persistence Sub-Specification

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Abstract

This document specifies the identifier and persistence requirements for UNNS-ADM-A, the technical realization layer of the UNNS Admissibility Framework. It defines the properties, lifecycle, and persistence guarantees of registry entry identifiers used in UNNS-ADM-B. This sub-specification introduces no new admissibility semantics and governs only the identity and durability of registry records.

1 Scope

UNNS-ADM-A.1 defines the normative requirements for:

- generation of registry entry identifiers,
- persistence and immutability of identifiers,
- resolution and dereferencing behavior,
- identifier behavior under supersession and versioning,
- long-term archival guarantees.

This specification applies exclusively to identifiers used by UNNS-ADM-B registry entries.

2 Normative Position

This sub-specification is subordinate to UNNS-ADM-A and implements the identifier requirements implied by UNNS-ADM-B.

It may not alter registry semantics, admissibility criteria, or enforcement rules.

3 Identifier Definition

Each registry entry shall be assigned exactly one identifier, denoted $ID(s)$, at creation time.

An identifier is defined as a persistent, globally unique reference to a single registry entry and its immutable content.

4 Identifier Requirements

An identifier must satisfy all of the following properties:

- **Uniqueness:** no two registry entries share the same identifier.
- **Persistence:** an identifier, once assigned, is never changed or reused.
- **Stability:** identifiers remain valid across system migrations, schema updates, and storage backend changes.
- **Singularity:** each identifier resolves to exactly one registry entry.
- **Opacity:** identifiers must not encode admissibility status, semantic interpretation, or ordering information.

5 Identifier Generation

Identifier generation shall be performed exclusively by the identifier authority component of UNNS-ADM-A.

Generation mechanisms may include UUIDs, cryptographic hashes, DOI-based schemes, or equivalent systems, provided all requirements of Section 4 are satisfied.

Human-readable meaning embedded in identifiers is prohibited.

6 Identifier Resolution

UNNS-ADM-A shall provide a resolution mechanism by which an identifier can be dereferenced to retrieve the corresponding registry entry.

Resolution must:

- succeed for all valid identifiers,
- fail explicitly for unknown identifiers,
- never redirect to a different entry.

Resolution behavior must be consistent across time.

7 Identifiers and Supersession

Supersession does not invalidate identifiers.

If entry s_2 supersedes entry s_1 :

- $\text{ID}(s_1)$ remains resolvable,
- $\text{ID}(s_2)$ is distinct and newly assigned,
- a directional supersession link is recorded:

$$\text{ID}(s_2) \rightarrow \text{ID}(s_1).$$

No identifier may supersede more than one prior entry unless explicitly documented as a consolidation event.

8 Identifiers and Registry Versioning

Identifiers are independent of registry version identifiers.

An entry created under UNNS-ADM-B.vX.Y retains its identifier under all future registry versions.

Registry versioning must not alter identifier semantics or resolution behavior.

9 Persistence Guarantees

UNNS-ADM-A shall guarantee identifier persistence through:

- redundant storage of identifier mappings,
- inclusion of identifiers in archival exports,
- protection against accidental or intentional deletion.

Loss or reassignment of identifiers constitutes a critical system failure.

10 Archival and Migration

During archival or format migration:

- identifiers must be preserved verbatim,
- identifier-to-entry mappings must remain intact,
- any change in resolution infrastructure must maintain continuity.

Migration procedures shall be auditable.

11 Failure Semantics

Identifier-related failures (e.g. collision, loss, resolution error) are technical failures and must not be recorded as admissibility outcomes.

Such failures must be logged and escalated as infrastructure faults.

12 Non-Guarantees

This specification does not guarantee:

- semantic meaning of identifiers,
- ordering or ranking of entries,
- performance characteristics of resolution mechanisms.

13 Conclusion

UNNS-ADM-A.1 establishes the identity and persistence foundations of the UNNS admissibility registry. By enforcing stable, opaque, and durable identifiers, it ensures that admissibility records remain traceable, auditable, and immune to reinterpretation over time.