Network Working Group
Internet-Draft
Intended status: Standards Track
Expires: 16 November 2026

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15 May 2026

An IANA Registry for Model Context Protocol Tool Surface Names
draft-morrison-mcp-tool-surface-names-registry-00

Abstract

This document requests the establishment of an IANA registry for Model Context Protocol [MCP-SPEC] tool surface names. A tool surface name is the wire-level identifier by which a client invokes a typed capability on an MCP server. Existing Morrison- family Internet-Drafts ([ORGALTER]) request IANA registration of specific surface names against a registry that does not yet exist. This document establishes the registry mechanism so that subsequent specifications can register names without restating the registry's structure or registration procedure.

The registry uses Specification Required registration with a Designated Expert pool [RFC8126]. Initial contents are the four surface names registered by [ORGALTER]. Vendor-prefix conventions are recommended but not mandated.

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This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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2. Introduction

The Model Context Protocol [MCP-SPEC] specifies a wire format for clients (typically agent runtimes) to invoke typed capabilities ("tools") on remote servers. Each tool is addressed by a textual surface name; the server's manifest enumerates the surface names it offers and the JSON Schema of each surface's arguments and return shape.

In the absence of a coordinated registry, surface names are chosen ad hoc by server operators. Collisions are common: two operators may both expose a surface named search, with incompatible argument schemas, and a client switching between servers has no machine-readable signal that the two surfaces are not the same capability.

Existing Morrison-family Internet-Drafts request IANA registration of specific surface names ([ORGALTER] requests registration of org_alter_handbook, org_alter_sop_registry, org_alter_enforcement_gates, and org_alter_ingest). Each such request currently restates the registry's structure and registration procedure, on the implicit assumption that a registry will be established by a future memo.

This document is that memo. It establishes the registry, defines the per-entry fields and the registration procedure, and registers the four names from [ORGALTER] as the initial contents.

2.1. Requirements Language

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 RFC2119 [RFC8174] when, and only when, they appear in all capitals, as shown here.

3. Terminology

Surface Name A textual identifier by which an MCP client invokes a typed capability on an MCP server. Surface names are case-sensitive ASCII strings matching the ABNF in Section 4.

Surface Specification The document that defines the argument schema,

the return shape, the authentication scope, and the behavioural semantics of a surface name.

Operator The entity responsible for a substrate that exposes one or more MCP servers. An operator is identified by a ~handle per [MCPDNS] when the substrate is recognised under the DNS identity protocol.

Vendor Prefix A common leading substring shared by surface names operated by a single substrate. org_alter_ is the vendor prefix for the reference substrate operated by Alter Meridian Pty Ltd.

4. Registry Structure

4.1. Per-Entry Fields

Each registry entry SHALL carry the following fields:

Field	Description
Surface name	The textual identifier, in lowercase ASCII, matching the ABNF below.
Specification reference	A pointer to the document that specifies the surface's argument schema, return shape, authentication scope, and semantics.
Authentication scope	The class of credential the server requires before serving the surface (e.g. member-recognition, trust-tier:engineering, ~handle-signed-token, public).
Vendor prefix	The vendor prefix the name falls under, or none for cross-vendor common names.
Change controller	The entity authorised to amend or withdraw the registration.
Status	One of Active, Provisional, Deprecated, or Withdrawn.
First registered	The date the entry first entered the registry.

Table 1

The Specification Reference SHOULD be a stable document identifier (an RFC number, a datatracker draft URL, a specification persistent URL). Where the specification is owned by a private substrate operator, the Change Controller field identifies the operator and the Specification Reference points to the operator's published specification.

4.2. ABNF for Surface Names

```
surface-name = name-component *( "_" name-component )
name-component
             = ALPHA *( ALPHA / DIGIT )
```

Surface names MUST be lowercase ASCII. Underscores separate components. Hyphens, periods, slashes, and uppercase letters MUST NOT appear. The total length of a surface name MUST NOT exceed 64 octets.

Vendor prefixes are an organisational convention: a registrant that operates a substrate exposing multiple surfaces SHOULD adopt a stable prefix (e.g. org_alter_, acme_) and register every surface that the substrate exposes under that prefix. Use of a vendor prefix is RECOMMENDED but not required; cross-vendor surfaces (those whose specification is intended for adoption by multiple operators) MAY be registered without a prefix.

5. Registration Procedure

Registration in this registry SHALL follow the Specification Required policy of [RFC8126] Section 4.6, with the additional provisions below.

The Designated Expert pool, appointed by the IESG, evaluates each registration request against the following criteria:

1. The proposed surface name conforms to the ABNF in Section 4.2.

2. The Specification Reference is stable and publicly retrievable at the time of registration.

3. The argument schema and return shape described in the Specification Reference are precise enough to enable interoperable client implementations.

4. The authentication scope is well-defined; ambiguous scopes ("authenticated") are returned for clarification.

5. The proposed entry does not collide with an existing entry either by exact match or by a vendor-prefix conflict (the proposed name would shadow or be shadowed by an existing entry).

The Designated Expert MAY accept, request revision of, or reject a request. Rejected requests are returned with reasons. Accepted requests are entered as Active status.

A registrant MAY request Provisional status pending a stable Specification Reference; provisional entries SHALL be reviewed within twelve months of registration and either promoted to Active, returned to the registrant for revision, or removed.

6. Initial Registry Contents

The following entries are registered as the initial contents of the registry, in Active status, per the registration requests of [ORGALTER]:

Surface name	Specification	Auth scope	Vendor prefix	Change controller	Status
org_alter_handbook	[ORGALTER]	member-recognition	org_alter_	Alter Meridian Pty Ltd	Active
org_alter_sop_registry	[ORGALTER]	member-recognition	org_alter_	Alter Meridian Pty Ltd	Active
org_alter_enforcement_gates	[ORGALTER]	member-recognition	org_alter_	Alter Meridian Pty Ltd	Active
org_alter_ingest	[ORGALTER]	member-recognition	org_alter_	Alter Meridian Pty Ltd	Active

Table 2

Subsequent Morrison-family Internet-Drafts that reference further surface names under the org_alter_ vendor prefix will request registration against this registry by name; each request will identify the Specification Reference, authentication scope, and change controller for the new surface. No registry-structure amendment is required to admit further entries.

7. Operational Considerations

7.1. Discovery

The registry is informational with respect to discovery: a client that wishes to discover whether a server offers a specific surface SHOULD consult the server's manifest rather than the registry. The registry's role is to ensure that two servers offering the same surface name offer the same typed capability, not to enable discovery of which servers offer a surface.

The DNS substrate of [MCPDNS] enables discovery of MCP servers for a given ~handle; once a server is discovered, the server's manifest enumerates the surface names it offers. The registry ensures that each name in the manifest maps to a unique specification.

7.2. Vendor-Prefix Ownership

A vendor prefix is not formally owned by any registrant; the prefix is a convention. However, the Designated Expert SHALL treat first-use of a prefix as a strong signal of intended ownership and SHALL reject subsequent requests under the same prefix from unrelated registrants without prior coordination with the first registrant. Disputes over vendor-prefix ownership are resolved by the Designated Expert with reference to documented first-use evidence (datatracker submission dates, publication dates of the registrant's specifications, operational history).

7.3. Deprecation and Withdrawal

An entry MAY be moved to Deprecated status by its Change Controller, in which case the entry remains in the registry as a record but new implementations are advised against it. An entry MAY be moved to Withdrawn status only after a deprecation period of at least twelve months, and only if no known implementations remain. Withdrawn entries SHALL NOT be reissued to a different registrant for at least five years.

8. Security Considerations

8.1. Name Collision

A surface name that collides with an existing entry's authenticated specification but offers a different typed capability is a potential vector for cross-server confusion. A client that unconditionally assumes the registry-published specification of a surface name, without verifying that the server's advertised manifest matches that specification, may invoke the surface with arguments that the server

interprets differently than the client intends. Implementations SHOULD compare the server's manifest against the registry-published specification at session-bind and SHOULD reject mismatches.

8.2. Specification Drift

The Specification Reference of an entry may evolve over time (e.g. an Internet-Draft progresses through revisions, an RFC is published, an organisational specification is revised). The registry tracks the most recent stable reference. Clients implementing against an earlier revision of a specification SHOULD detect specification-version drift via the server's manifest and SHOULD either upgrade their implementation or refuse to invoke the surface.

8.3. Vendor-Prefix Squatting

An adversary that registers entries under a vendor prefix intended by a different operator may induce that operator to choose a different prefix or to coordinate with the squatter. The Designated Expert's role under Section 6.2 is to reject such squatting requests on first-use evidence. The registry mechanism does not provide cryptographic enforcement of vendor-prefix ownership; the safeguard is procedural.

8.4. Public-Surface Caller Confusion

A surface name registered with an authentication scope of public is invokable by any caller. Operators SHOULD audit their public-surface registrations periodically and SHOULD NOT register a surface as public if any future revision is anticipated to require authentication; demoting a public surface to an authenticated surface is a breaking change for callers.

9. IANA Considerations

This document requests that IANA establish a new registry titled "Model Context Protocol Tool Surface Names".

* Registry name: Model Context Protocol Tool Surface Names

* Registration policy: Specification Required per [RFC8126] Section 4.6, with the Designated Expert criteria of Section 5 of this document.

* Per-entry fields: Surface name, Specification reference, Authentication scope, Vendor prefix, Change controller, Status, First registered, as defined in Section 4.1 of this document.

* ABNF for surface names: As defined in Section 4.2 of this document.

* Initial contents: As defined in Section 6 of this document.

* Reference: This document.

10. Acknowledgements

The registry mechanism is informed by the IANA registry-design guidance of [RFC8126] and by the practice of vendor-prefixed header-field registries in HTTP and DNS-RR-type registries. The initial contents are drawn from [ORGALTER].

11. References

11.1. Normative References

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11.2. Informative References

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[MCP-SPEC] Model Context Protocol Working Group, "Model Context Protocol Specification", 2025, <https://modelcontextprotocol.io/specification>.

[IDPRONOUNS] Morrison, B., "Identity Pronouns: A Reference-Axis Extension to ~handle Identity Systems", 2026, <https://datatracker.ietf.org/doc/draft-morrison-identity-pronouns/>.

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Appendix A. Change Log

A.1. draft-morrison-mcp-tool-surface-names-registry-00

* Initial submission. Establishes the registry, defines the registration procedure, and registers the four initial entries from [ORGALTER].

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