

# HCS-003

## Constitutional Interfaces

### Constitutional Composition Specification

**Version:** 1.0 (Federation Draft)

**Status:** Draft Constitutional Specification

---

## Status of This Specification

This document defines the constitutional interfaces through which sovereign constitutional architectures exchange governed constitutional state.

Unlike **HCS-001**, which defines constitutional jurisdiction, and **HCS-002**, which defines constitutional evaluation, this specification defines constitutional composition.

It specifies:

- constitutional interface principles;
- constitutional exchange requirements;
- constitutional ownership requirements;
- constitutional dependency rules;
- interface invariants;
- federation composition requirements; and
- constitutional non-claims.

This specification intentionally does **not** prescribe:

- communication protocols;
- message formats;
- APIs;
- software architecture;
- transport mechanisms;
- implementation technology; or
- runtime implementations.

Multiple independent implementations **MAY** satisfy this specification.

---

# Relationship to Previous Specifications

This specification builds upon:

## **HCS-000**

Defines the constitutional architecture of the specification series.

## **HCS-001**

Defines Harmonic's constitutional jurisdiction.

## **HCS-002**

Defines the constitutional evaluation model.

HCS-003 defines how sovereign constitutional architectures compose while preserving independent constitutional authority.

---

## **Preamble**

No sovereign constitutional architecture governs alone.

Identity architectures.

Authentication architectures.

Enterprise governance.

Clinical governance.

Policy engines.

Audit systems.

Execution runtimes.

Safety systems.

Each possesses its own constitutional jurisdiction.

Effective federation therefore depends not upon shared ownership, but upon explicit constitutional interfaces that preserve sovereign authority while enabling governed composition.

This specification defines those interfaces.

---

## 1. Purpose

The purpose of HCS-003 is to define the constitutional interface model through which sovereign constitutional architectures exchange governed constitutional state.

Interfaces enable constitutional composition.

Interfaces do not transfer constitutional authority.

---

## 2. Scope

This specification governs constitutional interfaces only.

It applies independently of:

- programming language;
- communication protocol;
- API design;
- serialization format;
- transport mechanism;
- runtime platform;
- deployment environment; and
- organizational structure.

Implementation remains independent.

---

## 3. Constitutional Principle

**Constitutional interfaces SHALL enable constitutional composition through the exchange of governed constitutional state while preserving sovereign constitutional authority.**

Composition SHALL preserve sovereignty.

Communication SHALL NOT imply ownership.

Communication SHALL NOT imply constitutional authority.

---

## 4. Constitutional Interface Model

A constitutional interface exists wherever one sovereign constitutional architecture provides governed constitutional state to another sovereign constitutional architecture.

Interfaces enable composition.

They do not merge constitutional jurisdiction.

Every constitutional interface SHALL preserve:

- explicit constitutional ownership;
  - explicit constitutional responsibility;
  - explicit constitutional boundaries;
  - explicit constitutional authority; and
  - explicit constitutional lineage.
- 

## 5. Constitutional Interface Requirements

Every constitutional interface SHALL:

- exchange governed constitutional state;
- preserve constitutional sovereignty;
- preserve architectural independence;
- preserve reconstructability;
- preserve explicit authority;
- preserve jurisdictional boundaries;
- preserve constitutional traceability; and
- preserve constitutional ownership.

No constitutional interface SHALL:

- transfer ownership;
- merge jurisdictions;
- infer constitutional authority;
- redefine neighboring constitutional responsibilities;

- introduce implicit governance; or
  - expand constitutional jurisdiction.
- 

## 6. Constitutional Exchange Model

Constitutional interfaces exchange constitutional state rather than implementation state.

Examples of governed constitutional state include:

- authority state;
- evidence state;
- dependency state;
- operational context;
- governing constraints;
- previous constitutional determinations;
- escalation state; and
- constitutional outcomes.

Ownership of exchanged constitutional state SHALL remain with its originating sovereign constitutional architecture.

---

## 7. Constitutional Directionality

Constitutional interfaces MAY produce governed constitutional state, consume governed constitutional state, or perform both functions.

The direction of constitutional exchange SHALL NOT alter:

- constitutional ownership;
- constitutional jurisdiction;
- constitutional responsibility; or
- sovereign authority.

Directionality defines communication.

It does not redefine constitutional relationships.

---

## **8. Constitutional Ownership**

Every constitutional determination SHALL possess an identifiable constitutional owner.

Ownership SHALL remain explicit throughout constitutional composition.

Ownership MAY be referenced.

Ownership SHALL NOT be transferred through constitutional interfaces.

---

## **9. Constitutional Trust**

Receipt of governed constitutional state SHALL NOT imply constitutional acceptance.

Every sovereign constitutional architecture remains independently responsible for determining how exchanged constitutional state contributes to its own constitutional determinations.

Interfaces exchange constitutional state.

They do not transfer constitutional judgment.

---

## **10. Constitutional Dependency**

Constitutional interfaces MAY depend upon governed constitutional determinations produced by neighboring sovereign constitutional architectures.

Dependency SHALL NOT imply:

- constitutional authority;
- constitutional ownership; or
- constitutional jurisdiction.

Dependencies SHALL remain explicitly observable.

---

## **11. Constitutional Composition**

Constitutional composition occurs through cooperation among sovereign constitutional architectures.

Composition preserves:

- sovereignty;
- constitutional boundaries;
- ownership;
- accountability;
- reconstructability; and
- independent constitutional responsibility.

Composition SHALL NOT require:

- centralized governance;
- architectural reduction;
- implementation uniformity; or
- jurisdictional consolidation.

---

## 12. Constitutional Traceability

Every governed constitutional determination exchanged across an interface SHOULD remain traceable to its originating constitutional architecture.

Traceability supports:

- reconstructability;
- accountability;
- review;
- federation integrity; and
- constitutional transparency.

Interfaces SHOULD preserve constitutional lineage.

---

## 13. Constitutional Failure Isolation

Failure of one sovereign constitutional architecture SHALL NOT automatically invalidate neighboring sovereign constitutional architectures.

Each sovereign constitutional architecture SHALL preserve its constitutional responsibility to the extent permitted by its own constitutional state.

Unresolved constitutional dependencies SHALL remain explicitly observable.

Failure SHALL increase constitutional visibility rather than reduce constitutional governance.

---

## 14. Constitutional Recursion

Nothing within this specification limits constitutional composition to a single level of federation.

Federated constitutional architectures MAY themselves participate as sovereign constitutional architectures within larger federated constitutional systems.

Constitutional sovereignty SHALL remain explicitly preserved at every level of constitutional composition.

---

## 15. Constitutional Invariants

The following invariants SHALL remain true independent of implementation.

1. Constitutional interfaces SHALL preserve sovereignty.
2. Constitutional interfaces SHALL preserve jurisdiction.
3. Constitutional interfaces SHALL preserve ownership.
4. Constitutional interfaces SHALL preserve constitutional authority.
5. Constitutional interfaces SHALL exchange governed constitutional state.
6. Constitutional interfaces SHALL remain implementation-independent.
7. Constitutional composition SHALL preserve reconstructability.
8. Constitutional dependencies SHALL remain observable.
9. Communication SHALL NOT imply constitutional authority.
10. Constitutional composition SHALL NOT reduce sovereign independence.
11. Constitutional trust SHALL remain independent.
12. Constitutional ownership SHALL remain explicit.

These invariants define constitutional composition.

Implementations MAY differ.

The constitutional invariants SHALL NOT.

---

## 16. Constitutional Non-Claims

HCS-003 makes no constitutional claim regarding:

- transport protocols;
- APIs;
- serialization formats;
- network topology;
- messaging systems;
- orchestration frameworks;
- distributed systems;
- runtime synchronization;
- software architecture;
- execution mechanisms; or
- implementation technologies.

These remain implementation responsibilities.

---

## 17. Federation Compatibility

Constitutional interfaces enable federation among sovereign constitutional architectures.

Federation SHALL preserve:

- constitutional independence;
- explicit ownership;
- explicit jurisdiction;
- explicit authority;
- implementation independence; and
- sovereign responsibility.

Federation SHALL NOT require:

- centralized ownership;
  - constitutional hierarchy;
  - architectural reduction; or
  - implementation conformity.
-

# 18. Security and Failure Considerations

When constitutional ownership cannot be established, exchanged constitutional state SHALL NOT be presumed authoritative.

When constitutional lineage cannot be reconstructed, constitutional review SHOULD be preferred.

When neighboring constitutional determinations become unavailable, constitutional dependencies SHALL be treated as unresolved.

When constitutional uncertainty exists, continuation SHOULD favor governed review over unsupported progression.

Failure SHALL increase constitutional visibility rather than reduce constitutional governance.

---

## Appendix A — Architectural Rationale (Informative)

Federation does not require constitutional centralization.

It requires constitutional cooperation.

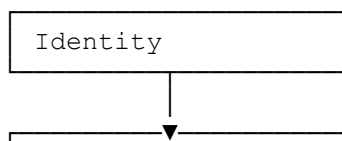
Independent constitutional architectures become stronger when they compose through explicit constitutional interfaces while preserving sovereign responsibility.

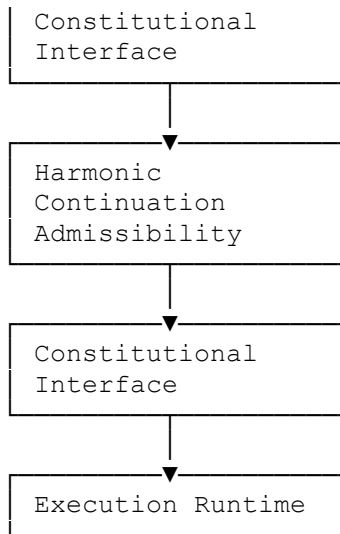
Interfaces function as constitutional boundaries rather than architectural shortcuts.

They enable interoperability without sacrificing sovereignty.

---

## Appendix B — Conceptual Composition Model (Informative)





The constitutional interfaces preserve sovereignty while enabling governed constitutional composition.

---

## Closing Principle

Constitutional interfaces exist for one purpose:

**To enable sovereign constitutional architectures to cooperate without surrendering sovereignty.**

Governed constitutional state may be exchanged.

Constitutional authority remains sovereign.

Ownership remains explicit.

Jurisdiction remains bounded.

Through explicit constitutional interfaces, federation becomes possible without architectural reduction, centralized ownership, or constitutional ambiguity.

Constitutional interfaces do not transfer authority.

They preserve it.