

SIP-048 — Platform Independent Model Formal Precision

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Statement

The [Platform Independent Model \(PIM\)](#) SHALL be defined with sufficient formal precision to support independent implementation and conformance assessment.

Rationale

A PIM that depends on undocumented assumptions or informal interpretation cannot reliably support independent implementations. Different implementers may assign different meanings to the same constructs or apply constraints inconsistently.

Formal precision reduces ambiguity by providing defined constructs, relationships, semantics, constraints, and well-formedness rules. This enables implementations to be developed and assessed against the same normative architectural model.

Evaluation Criteria

A conforming Submission demonstrates that:

1. Normative architectural constructs are explicitly defined
2. Relationships, properties, cardinalities, and constraints are specified
3. Applicable well-formedness rules are provided
4. Normative Semantics are defined
5. Conformance-relevant behavior and externally observable responsibilities are identified
6. Undefined implementation choices are distinguished from normative architectural requirements
7. Independent implementers can construct compatible implementations without relying on undocumented assumptions
8. Conformance assessors can determine whether an implementation satisfies the normative model
9. Equivalent model representations preserve the normative meaning of the PIM

Referenced By

- [6.4.2 Platform-Independent Model Definition](#)
- [6.4.6 Implementation Conformance Model](#)
- [SIP-054 — Implementation Conformance Model](#)

Notes for Editors

“Sufficient formal precision” does not require a specific mathematical formalism. It requires enough normative detail to support consistent interpretation, independent implementation, and repeatable conformance assessment.

SIP-046 governs the abstract syntax of the PIM. SIP-047 governs its formal Semantics. SIP-048 governs the overall precision needed to use those definitions independently.

Use the following syntax to include the authoritative Statement on another wiki page:

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{{section>public:00-sip-ra:99-annexes:annex-c-requirements:sip-048-platform-independent-model-formal-precision#Statement&noheader&nofooter&noeditbtn}}
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