

GPR-018 — Independent, Substitutable, and Interoperable Implementations

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Statement

The proposed specification SHALL define externally observable behavior, [Interfaces](#), and conformance conditions that permit independently developed implementations to be substitutable and [Interoperable](#).

Requirement Level

Mandatory

Rationale

Independent implementation promotes competition, technological diversity, and long-term sustainability. Substitutability allows one conforming implementation to replace another without changing the standardized responsibilities assigned to the implementation. Interoperability allows independently developed implementations to participate in the same conforming environment.

These capabilities depend on clearly defined externally observable behavior, Interfaces, Interface Contracts, and conformance conditions rather than common internal designs or implementation technologies.

Evaluation Criteria

A conforming Submission demonstrates that:

1. Externally observable behavior is defined with sufficient precision to support independent implementation
2. Applicable Interfaces and Interface Contracts are explicitly identified
3. Conformance conditions are objectively assessable
4. Independently developed implementations can interact through the standardized Interfaces
5. Implementations satisfying the same applicable contracts and conformance conditions can substitute for one another
6. Conformance does not depend on a common internal design, implementation technology, product, or vendor

Referenced By

- [5.1.10 Encapsulation](#)

Notes for Editors

Substitutability does not require implementations to have identical internal designs, performance characteristics, technologies, or deployment configurations.

Implementations are substitutable when they satisfy the same applicable externally observable behavior, Interface Contracts, and conformance conditions.

To transclude the authoritative Statement into another page, use:

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Last update: 2026/09/15 13:31

