MaxBridge v1.2 – System Module 02

Module Title: Capsule Execution & Validation Flow

Version: 1.2

Document Type: System Core Module

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Subsystem: MaxBridge (Compatibility & Control Layer)

Release Context: Part of MaxOneOpen v4.1 ecosystem – standalone deployable

Status: CTO-aligned – certified structure

# 1. Overview

This module defines the full operational sequence for capsule-based request processing within MaxBridge. Each inbound interaction is converted into a structured capsule, then validated and processed through a controlled flow.

# 2. Execution Zones

MaxBridge separates its internal process into four sequential execution zones:

* - Input Zone

Accepts inbound requests from external systems, converts them into capsule candidate form.

* - Capsule Assembly Zone

Generates the capsule structure including manifest, metadata hash, anchor reference, and policy field set.

* - Validation Zone

Uses MaxReg to verify rules, simulate forks, identify violations, and determine continuation.

* - Output Zone

Forwards validated capsule to MaxOneOpen system core, MaxAudit anchor, or external relay logic.

# 3. Capsule Processing Logic

Each inbound capsule is processed under the following conditional flow:

* - Manifest Completeness → If missing fields → Reject with Breach Signal
* - Signature Verification → If hash mismatch → Block execution
* - Policy Binding → If no policy or revoked context → Reject
* - Audit Flagging → If audit-required context present → Relay to MaxAudit with full state
* - Learning Context → If capsule is learnable → Relay to MaxTune with SDG reference

# 4. External System Handling

External systems are never directly integrated. Each is converted into capsule form. All API calls, data streams, or webhook invocations are intercepted, encapsulated, and validated before execution. System-specific wrappers are supported through MaxBridge Extension Packs.

# 5. Fork & Halt Decisions

If capsule validation fails in any zone, MaxBridge triggers a controlled fork (if allowed by MaxOneOpen) or halts the process. Failed capsules may be sent to a quarantine zone for future audit or rejection certification.

# 6. Role of MaxAudit and MaxTune

- MaxAudit records all breach, anchor or override events for full trail compliance.

- MaxTune observes learnable capsule flow for history-aware permission updates.