# Module XX – MaxOneOpen Schema Catalog & Terminology Reference

Version: 4.1 | Classification: CTO Mandatory (Glossary & Formal Vocabulary)

Scope: Unified capsule vocabulary, reference schema overview, system-wide terminological precision

## 0. Purpose & Reference Requirement

This module defines and consolidates all system-wide capsule structures, capsule class identifiers, trust tier labels, sovereign roles, federation anchors, and runtime enforcement concepts used throughout MaxOneOpen v4.1. It serves as the primary terminological reference for all certification, audit, simulation, and integration documentation.

## 1. Capsule Classes & Type Registry

Capsule Classes:  
- COMMIT: General ledger commit capsule  
- FAC: Fork Anchor Capsule  
- FCC: Federation Consent Capsule  
- CCC: CTO Certification Capsule  
- GC: Grace Capsule  
- GRCC: Grace Replay Confirmation Capsule  
- FVC: Fork Violation Capsule  
- RAC: Replay Alert Capsule  
- PCC: Policy Collision Capsule  
- ALC: Alert Capsule (Generic)  
- ASC: Audit Summary Capsule  
- VSC: Violation Summary Capsule  
- REC: Reentry Capsule  
- RFC: Recovery Finalization Capsule  
- SCC: Simulation Confirmation Capsule

## 2. Trust Tier Labels (Standardized Roles)

Tier 0: Sovereign Root Authority (cannot be delegated)  
Tier 1: Capsule Signing Authority (Ledger-integrated)  
Tier 2: Audit Execution Role (Trace review, violation mapping)  
Tier 3: Policy Agent or Rule Injector  
Tier 4: Operational Observer or Add-on Validator  
Tier 5: Sandbox-bound, non-signing, externally introduced component

## 3. Runtime Enforcement Concepts

- Replay Resistance: Capsule time-window & hash binding with collision rejection  
- Capsule Integrity: Commit lineage, federation consent linkage, GRCC validation  
- Trust Escalation Lock: Execution beyond declared tier is auto-rejected  
- Fork Isolation: Forks outside FAC trace freeze execution until reconciled  
- Grace Execution: Permitted under subsystem failure; TTL-bound and auditable  
- Alert Chain: Live broadcast of key anomalies (replay, policy collision, fork drift)

## 4. Federation Vocabulary

- FCC: Federation Consent Capsule (declares trust scope and anchor zone)  
- FAC: Fork Anchor Capsule (declares pre-fork consensus and reentry hash)  
- FRC: Federation Reconciliation Capsule (issued on consensus suspension)  
- OLW: Observer Ledger Window (federation-specific capsule view)

## 5. Capsule Format Convention

Capsules follow the JSON-aligned structure with internal fields:  
- `capsule\_id`: unique ledger reference ID  
- `capsule\_type`: defined in capsule class registry  
- `trust\_scope`: trust tier or zone tag  
- `signature`: cryptographic chain back to sovereign root  
- `payload`: type-dependent data object  
- `prev\_hash`: commit reference hash  
- `federation\_ref`: anchor ID for federated systems