

v3.4-EDGE-003 – Mobile Twin Execution & Peer-to-Peer Edge Synchronization

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1. Purpose & Scope

This document defines the architecture and certification criteria for mobile twin execution and peer-to-peer (P2P) edge synchronization. It enables MaxOneOpen forks to operate across mobile or ad-hoc hardware with direct peer logic.

2. Mobile Twin Execution Logic

- Twins may be deployed to portable or battery-powered edge devices
- Execution footprint must remain within local memory and compute bounds
- No online requirement for core logic, inference, or access control
- All operations must be loggable and replayable post-sync

3. Peer-to-Peer Sync Model

Sync Trigger	Validation Method	Conflict Handling
On reconnect	Twin signature match	Latest ZK-hash wins
Manual push	Role-signed snapshot	Consensus policy
Multi-peer broadcast	Schema chain proof	Fork rebind
Emergency merge	Admin token	Quorum override

4. Certification Hooks

- Mobile twins must support full offline execution and later sync
- Peer-to-peer merges must include ZK-confirmation of source
- Forks must log sync direction, conflict resolution, and twin lineage

5. Certification Triggers

- Missing conflict resolution or mobile execution support disqualifies fork
- Certification requires evidence of peer-based log verification
- Manual-only sync or central mediation is non-compliant

6. Certification Relevance

Only forks that support mobile twin execution and P2P edge sync logic can qualify for MaxOneOpen certification. All edge interactions must remain decentralized, verifiable and audit-friendly.