Reservation Protocol ? Trust Condition Framework (TCO) v1.0

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Overview:
This document defines the Trust Condition Object (TCO), the core schema used by the TSE (Trust

Trust Condition Object Schema:
```
{
  "identity_id": "abc123",
  "trust_tier": "guest",
  "time_since_last_proof": "45m",
  "geoip_expected_zone": true,
  "device_fingerprint_match": false,
  "risk_event_count": 1,
  "presence_heartbeat_missing": true,
  "decay_modifier": 1.2,
  "presence_score": 88,
  "trust_score": 72,
  "state": "Eroding"
}
```

Trust Tier Definitions (v1.0):
- guest   : Temporary, unauthenticated yet present
- vendor   : External but recurring, short-term
- internal   : Baseline org user
- admin   : Sensitive privileges, core systems
- ai_agent   : Non-human identity, monitored closely
- privileged_ai   : AI with elevated data access
- executive   : VIP treatment but high risk if compromised
- service_account   : Machine/service identity, always-on but watchable

Trust Stories:

1. ?The Wandering Guest?
```
{
  "identity_id": "abc123",
  "trust_tier": "guest",
  "time_since_last_proof": "45m",
  "geoip_expected_zone": true,
  "device_fingerprint_match": false,
  "risk_event_count": 1,
  "presence_heartbeat_missing": true,
  "decay_modifier": 1.2,
  "presence_score": 88,
  "trust_score": 72,
  "state": "Eroding"
}
```

2. ?The Returning Vendor?
```
{
```

```
  "identity_id": "vendor456",
  "trust_tier": "vendor",
  "time_since_last_proof": "90m",
  "geoip_expected_zone": false,
  "device_fingerprint_match": true,
  "risk_event_count": 0,
  "presence_heartbeat_missing": true,
  "decay_modifier": 1.1,
  "presence_score": 70,
  "trust_score": null,
  "state": "Eroding"
}

3. ?The Executive Ghost?
{
  "identity_id": "exec777",
  "trust_tier": "executive",
  "time_since_last_proof": "300m",
  "geoip_expected_zone": true,
  "device_fingerprint_match": true,
  "risk_event_count": 2,
  "presence_heartbeat_missing": true,
  "decay_modifier": 0.9,
  "presence_score": 30,
  "trust_score": null,
  "state": "At-Risk"
}

4. ?The Hungry AI?
{
  "identity_id": "ai_delta",
  "trust_tier": "ai_agent",
  "time_since_last_proof": "22m",
  "geoip_expected_zone": true,
  "device_fingerprint_match": true,
  "risk_event_count": 1,
  "presence_heartbeat_missing": false,
  "decay_modifier": 1.3,
  "presence_score": 64,
  "trust_score": null,
  "state": "Eroding"
}

Trust Scoring Logic:
def calculate_tse_score(tc):
    base = 100
    decay = int(tc["time_since_last_proof"].replace("m", "")) * 1.5
    penalty = tc["risk_event_count"] * 10
    presence_bonus = 10 if not tc["presence_heartbeat_missing"] else 0
    tier_mod = {
        "guest": 1.2,
        "vendor": 1.1,
        "internal": 1.0,
        "admin": 0.8,
```

```
        "ai_agent": 1.3,
        "privileged_ai": 1.4,
        "executive": 0.9,
        "service_account": 0.6
    }.get(tc["trust_tier"], 1.0)

    score = base - (decay + penalty) * tier_mod + presence_bonus
    return max(0, score)

Notes:
- This document is Portfolio-Ready v1.0
- Maintained by: GlassVault Architect
```