

Foritech TRL-7 Evidence Binder

TRL-7 Evidence — Foritech Secure System

1. Operational Environment
2. Use Cases (Demo Scenarios)
3. Evidence to Collect
4. Verification & Acceptance
5. Security & Compliance
6. Release & CI
7. Sign-off

Monthly baseline (indicative, 6 months)

Test Plan — Foritech TRL-7

Test Cases

Traceability (Req → Test)

KPI / TRL Matrix

Compliance Checklist (GDPR/NIS2/ISO27k — Lite)

Foritech — One-Pager (TRL-7)

TRL-7 Evidence — Foritech Secure System

Goal: Demonstrate system prototype in an **operational environment** (beyond lab).

Version: v0.6.0 (Investor-ready)

Date: (auto)

Scope: PQC-first X.509/PKI toolkit (ML-KEM/Kyber + Dilithium), hybrid certificates, CLI/SDK.

1. Operational Environment

- **Pilot A (Internal):** service-to-service mTLS в корпоративна мрежа (UFW deny-by-default, Fail2Ban, SFTP chroot).
- **Pilot B (Internet-facing):** публичен endpoint с reverse proxy (OQS-OpenSSL), хибридни сървърни и клиентски сертификати.
- Логове, policy, key/cert rotation playbook; backup + test-restore.

2. Use Cases (Demo Scenarios)

1. **Hybrid X.509 issuance:** Root→SubCA→Leaf (ML-KEM + Dilithium), chain verify.
2. **mTLS handshake:** клиент/сървър, взаимна автентикация, падане към класически fallback при нужда.
3. **Key/Cert rotation:** ротация на услуга и клиент в <10 мин; нулева загуба на достъп.
4. **Compliance snapshot:** 13+2 базова харденинг политика; CodeQL High/Critical=0/≤2.

3. Evidence to Collect

- Скриншоти и **logs** (issuance, verify, mTLS, rotation).
- **Pilot_Demo_Report.md** (подписан) и кратко **видео ≤3 мин** (unlisted линк).
- **Release bundle** checksum (SHA256).
- **Verification_Report.md** (подписан) с PASS/FAIL срещу KPIs.

4. Verification & Acceptance

- Тест план T-01...T-10 (виж Test_Plan.md).
- **Acceptance = GREEN** ако:
 - Hybrid cert issuance < 60 s (T-02).
 - mTLS success ≥ 99% върху 100 последователни handshake-a (T-05).
 - Rotation lead time < 10 min (T-07).
 - CodeQL Critical = 0; High ≤ 2 (T-08).
 - Docs completeness ≥ 90% (T-10).
- Traceability matrix в края на Test_Plan.md.

5. Security & Compliance

- 13+2 baseline (UFW, Fail2Ban, SFTP, TLS hardening, Docs).
- CodeQL включен; dependency audit.
- DPIA (lite) и NIS2/ISO27k чеклист.

6. Release & CI

- Daily **PROGRESS.md** digest.
- Reproducible **release bundle** (scripts/release_bundle.sh + GH Action „release-evidence“).

7. Sign-off

- Pilot A lead: _____ Date: _____
- Pilot B lead: _____ Date: _____
- Security/QA: _____ Date: _____ ## 8. Funding & Cash-Flow (S-tier €81k; 50% grant)
- **Instrument:** Simple Grant (EU funds 50% of eligible costs; 7% indirect).
- **Cash flow model:** prefinancing → interim → final (prefinancing % set in GA; assume 20% of EU grant here for planning).
- **EU grant:** €40,500; **Co-funding:** €40,500.

Monthly baseline (indicative, 6 months)

Month	Direct costs (€)	EU inflow (prefin. share)	Net cash need (€)	Notes
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1	13,000	8,100	4,900	Setup, equipment, kick-off docs
2	12,000	0	12,000	Packaging, tests, CI
3	12,500	0	12,500	Pilot A
4	13,000	0	13,000	Pilot B, interop
5	12,500	0	12,500	Verification, video
6	12,701	0	12,701	Release bundle, dissemination
Sum (direct)	75,701	8,100	67,601	Indirect 7% = €5,299 (auto)

Prefinancing share and interim payments are subject to the Grant Agreement; adjust in Annex 1 if different.

Test Plan — Foritech TRL-7

Test Cases

- **T-01 Env sanity:** UFW deny-by-default; Fail2Ban активен; SFTP chroot. *PASS:* правила и systemctl status зелени.
- **T-02 Hybrid issuance:** Root→SubCA→Leaf (Kyber+Dilithium). *PASS:* cert + chain, issuance time <60s.
- **T-03 Chain verify:** x509-verify срещу SubCA chain. *PASS:* валидна верификация.
- **T-04 Client cert:** издаване и инсталация на клиентски hybrid cert. *PASS:* cert наличен и валиден.
- **T-05 mTLS:** 100 поредни handshakes клиент↔сървър. *PASS:* ≥99% успех (≥99/100).
- **T-06 Negative paths:** невалидна верига/изтекъл cert. *PASS:* коректно отхвърляне + лог.
- **T-07 Rotation:** ротация на service cert под 10 мин, без downtime >30 s. *PASS:* успешно + лог.
- **T-08 CodeQL:** Critical=0; High≤2. *PASS:* прагове спазени.
- **T-09 Bundle:** release_bundle.sh генерира archive + checksum. *PASS:* архив и SHA256 в dist/.
- **T-10 Docs completeness:** ≥90% попълнени секции. *PASS:* чеклист зелен.

Traceability (Req → Test)

- Hybrid issuance → T-02, T-03
- mTLS → T-05, T-06
- Rotation → T-07
- Security baseline → T-01, T-08
- Docs/Release → T-09, T-10

KPI / TRL Matrix

KPI	Target (TRL-7)	Measure	Status
Hybrid cert issuance time	< 60s	CI test	☐
mTLS handshake success rate	99%+	Pilot logs	☐
Rotation lead time	< 10 min	Playbook run	☐
Docs completeness	90%	Checklist	☐

Compliance Checklist (GDPR/NIS2/ISO27k — Lite)

- Data mapping & lawful basis recorded (GDPR Art. 6)
- Minimal personal data in logs; retention policy defined
- Access controls, MFA for admins
- Incident response procedure (24-72h)
- Supply-chain security (SBOM optional), CodeQL enabled
- Host hardening applied (“13+2”)

Foritech — One-Pager (TRL-7)

Mission: PQC-first X.509/PKI toolkit enabling hybrid certificates and a safe transition to post-quantum TLS.

Problem: Quantum-ready adversaries threaten classic PKI; orgs need hybrid certs + rotation playbooks now.

Solution: Foritech SDK/CLI issues & validates **hybrid X.509** (ML-KEM/Kyber + Dilithium), with pragmatic ops tooling.

Innovation: PQC-first certificate workflows (issuance, verify, rotation), operational hardening (13+2), reproducible bundles.

Stage: v0.5.x → **v0.6.0 TRL-7** (operational demo A/B, KPIs, signed verification).

Use cases: mTLS services; client auth; staged rotation; pilot in SME/edge envs.*Go-to-market (12-18m):** open-core SDK/CLI; Pro (managed CA add-ons, ACME/CT tooling, audit); Enterprise (SLOs, training). Direct + MSP partners. Targets: 2 paid pilots, 5 design partners.*KPIs (TRL-7):** - Hybrid issuance <60s; mTLS ≥99% (100 tries); Rotation <10 min; CodeQL Critical=0/High≤2; Docs ≥90%.

Plan (6 months): 1) TRL-7 packaging & docs (mo 1-2)

2) Pilot A (internal) + Pilot B (internet-facing) (mo 2-4)

3) Verification & evidence (mo 4-5)

4) Release & dissemination (mo 6)

Budget ask: €81,000 total — EU grant 50% = €40,500; co-funding 50% = €40,500.

Team: forrybg (Lead, Security/PKI), external QA.

Links: Core <https://github.com/foritech-secure-system/foritech-secure-system> · TRL site (Pages) · Live demo <https://forrybg.github.io/foritech-investor-demo/>

