

Minimum Requirements for a Project Charter

Module 3: Services & Repositories

Topic 2: Technology Readiness Level (TRL) 7 Requirement



Technology Readiness Level (TRL) is a 1-9 scale measuring operational maturity.

EOSC requires TRL 7 minimum = System prototype demonstration in operational environment (General Criterion #4)

What this means in practice:

- The service/repository is **actually working**
- With **real users** (not just developers testing it)
- In **real conditions** (not lab/demo environment)
- Producing **real results** (not simulations)

X

TRL 7 is NOT:

- A fully mature commercial product (that's TRL 9)
- Perfect or bug-free
- Complete feature-wise

TRL 7 IS:

- Operational and usable by actual users
- Performing its intended function
- Stable enough for production use
- Supported and maintained



For more check p.14 https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2023-2024/wp-13-general-annexes_horizon-2023-2024_en.pdf

The TRL Scale

TRL Level	Description	EOSC Status
TRL 1–3	Research and concept	✗ Too early
TRL 4–5	Lab validation and testing	✗ Not operational
TRL 6	Prototype in relevant environment	✗ Almost there
TRL 7	Prototype in operational environment	✓ EOSC minimum
TRL 8	Complete system qualified	✓ Acceptable
TRL 9	Proven through operations	✓ Ideal

EOSC accepts TRL 7-9, but you must prove it.

TRL 6 vs. TRL 7: The Critical Distinction

TRL 6 (NOT acceptable)

- Service works in test environment
- Used by development team and friendly testers
- Proves technical feasibility
- May have limited user interface

VS

TRL 7 (REQUIRED)

- Service deployed in production environment
- Used by external/real users for actual work
- Generates real outcomes/deliverables
- Has operational support and documentation

Example:

"We built a data discovery prototype. Five colleagues tried it and found datasets. It works!"

Why this is TRL 6:

- Colleagues = friendly testers, not real users
- No evidence of operational environment
- No proof of sustained use

Example:

"Our data discovery service has 420 registered users from 12 institutions. In 2024, users performed 8,400 searches, downloading 1,200 datasets. We provide helpdesk support and maintain 99.2% uptime."

Why this is TRL 7:

- Real users (420 from external institutions)
- Real usage (8,400 searches, operational metrics)
- Production environment (helpdesk, uptime tracking)
- Sustained operation (full year 2024)

Evidence Required for TRL 7 – User Evidence

To claim TRL 7, you need documentation in three categories:

1. User Evidence

Proof that real users exist and use the service

Weak

- "We have users" (no numbers)
- Only internal/institutional users
- Test user accounts only

Strong

- User registration count from real institutions
- Usage statistics (queries, downloads, sessions)
- User testimonials or feedback
- Training session attendance records

Acceptable evidence:

- Letters from user institutions
- Publications citing the service
- Service agreements with organisations

Example:

"Marine Data Discovery Service: 420 registered users from 12 research institutions (2024). Monthly active users average 85. User survey (n=45, Aug 2024) showed 92% satisfaction rating."

Evidence Required for TRL 7 – Operational Evidence

2. Operational Evidence

Proof the service runs in production environment

Weak

- "It's been running for a while"
- No metrics provided
- Only demo/test environment

Strong

- Uptime statistics (% , availability metrics)
- Performance metrics (response time, throughput)
- Incident reports showing operational monitoring
- Service Level Agreement (SLA) targets

Acceptable evidence:

- Production deployment date
- Monitoring dashboard existence
- Operational procedures documentation

Example:

"Operational since January 2024. Uptime: 99.2% (monitored via Nagios). Average query response time: 1.2 seconds. Helpdesk handled 47 support tickets (2024), 95% resolved within 24 hours."

3. Output Evidence

Proof the service produces real results

Weak

- "Users find it helpful"
- Generic capability statements
- No concrete outputs documented

Strong

- Deliverables generated (datasets downloaded, analyses completed)
- Research outputs enabled (publications, projects using service)
- Quantified outcomes (TB transferred, workflows executed)

Acceptable evidence:

- Transaction logs showing completed actions
- Use cases documented with results
- Integration with other services

Example:

"In 2024, users downloaded 1,200 datasets (total 15TB) via the service. Enabled 8 cross-border research collaborations (documented in use cases). Three publications acknowledge the service (listed in Module 4)."

Confusing Capability with Readiness



"We have HPC infrastructure with 10,000 cores. That's clearly operational, so TRL 7."



TRL 7 requires:

- Who uses it?
- How many users?
- What do they compute?
- What are the usage metrics?

Capability (having infrastructure) $\neq$ TRL 7 (proving operational use)

Only Internal Users

X

"Our researchers use this service daily. We have 50 active users."

TRL 7 requires:

- External users from other institutions.
- Internal-only = not yet EOSC service.



Exception: If your institution IS the primary user community (e.g., national library serving national users), internal can count as external. But specify this.

Pilot Phase Confusion

X

"We ran a successful pilot with 20 users. The pilot proved it works."



TRL 7 requires:
Post-pilot operational deployment. Pilot = TRL 6 (testing).
Production = TRL 7.

If still in pilot: Don't include in Charter yet.
Wait for operational deployment.

Planned Features

X

*"Our data repository will have DOI minting by Q2 2025.
We'll mention that."*

✓

TRL 7 requires:

- Current operational features only.
- Future plans don't count.

Tip: Describe service as-is today.
Mention planned features in Section 6 (Roadmap), not Section 3.

No Metrics



"We know people use it.
We don't track exact numbers."



TRL 7 requires:
Documented metrics.
"We think" or
"approximately" undermines
credibility.

Tip: If you don't have metrics, start collecting NOW.
Even basic counts (logins, downloads) help.

What If Your Service Isn't TRL 7 Yet?

Option 1: Don't Include It

Only list services that meet TRL 7. It's better to have 5 strong entries than 8 entries with weak TRL.

Option 2: Strengthen Evidence Before Charter Submission

If submission is months away:

- Deploy to production
- Recruit real users (even small number)
- Start collecting metrics
- Document operational procedures

Even 3 months of operational data is better than none.

Option 3: Mention in Section 6 (Roadmap)

Services under development belong in Roadmap, not Service Table:

- Section 3: Only TRL 7 services
- Section 6: "Planned service: AI Data Recommendation Engine (target TRL 7 by Q3 2026)"

TRL Assessment: What evaluators check

Bad examples = Weak TRL claims

- "Service is fully operational" (no metrics provided)
- "Used by research community" (no user count)
- "Running in production" (no uptime, no support documentation)
- "Proven capability" (no evidence of actual use)
- Generic descriptions with no specifics

Good examples = Strong TRL 7 documentation

- Specific numbers (users, transactions, volumes)
- Time ranges (operational since [date], 2024 metrics)
- Institutional diversity (X organisations, Y countries)
- Performance data (uptime %, response time)
- Support evidence (helpdesk, SLA, documentation)

For each service/repository you identified in Topic 1, assess TRL 7 readiness:

User Evidence:

- ☐ External users (not just internal team)
- ☐ User count documented: _____ users
- ☐ Multiple institutions: _____ organisations
- ☐ Real work (not just testing)

Operational Evidence:

- ☐ Production deployment
- ☐ Uptime monitored: _____%
- ☐ Support mechanism exists
- ☐ Continuous operation

Output Evidence:

- ☐ Real deliverables produced
- ☐ Outputs documented:
- ☐ Research outcomes enabled
- ☐ Performance metrics exist

Total boxes checked: _____ / 12

Decision:

- ☐ Include in Charter (10+ boxes checked)
- ☐ Strengthen evidence first (8-9 boxes)
- ☐ Not ready - exclude from Section 3 (<8 boxes)

Repeat this assessment for each offering. Save your results.

Thank you!