# Zenodo ↔ GitHub Synchronization Package

**Purpose:** Establish bidirectional synchronization between Zenodo DOI archives and GitHub repositories for AIUZ Terra Ecosystem and FMP Theory layers, according to Nullo / PLT / FMP principles.

## 1. Overview

This synchronization package ensures that each DOI release deposited in **Zenodo** automatically references its corresponding **GitHub release**, and vice versa, using unified metadata manifests.

### Repositories Covered:

* Secret-Uzbek/AIUZ-Terra-Ecosystem
* Secret-Uzbek/Theory-of-Fractal-Metascience-Paradigm

### DOI Example:

10.5281/zenodo.17425678 → TCPP v1.0 release.

### GitHub Tag:

v1.0-tcpp

## 2. Configuration Files

### .env.sync

# Zenodo ↔ GitHub Synchronization Environment  
SYNC\_MODE=bi-directional  
ZENODO\_DOI=10.5281/zenodo.17425678  
ZENODO\_API=https://zenodo.org/api/deposit/depositions  
ZENODO\_UPLOAD\_JSON=zenodo\_upload.json  
GITHUB\_RELEASE\_JSON=github\_release\_manifest.json  
GITHUB\_OWNER=Secret-Uzbek  
GITHUB\_REPOS="AIUZ-Terra-Ecosystem,Theory-of-Fractal-Metascience-Paradigm"  
GITHUB\_TAG=v1.0-tcpp

### sync\_manifest.json

{  
 "sync\_id": "SYNC-2025-001",  
 "description": "Zenodo ↔ GitHub synchronization manifest for AIUZ Terra Ecosystem and FMP Theory repositories.",  
 "version": "v1.0-tcpp",  
 "doi": "10.5281/zenodo.17425678",  
 "repositories": [  
 "Secret-Uzbek/AIUZ-Terra-Ecosystem",  
 "Secret-Uzbek/Theory-of-Fractal-Metascience-Paradigm"  
 ],  
 "last\_sync": "2025-10-24T19:00:00+05:00",  
 "status": "verified",  
 "linked\_ledger": "TERRA-PROOF-2025-001"  
}

### sync\_instructions.md

# Zenodo ↔ GitHub Synchronization Steps  
  
1. Zenodo records DOI metadata (from `zenodo\_upload.json`).  
2. GitHub release with tag `v1.0-tcpp` references the same DOI in its release body.  
3. Both records include reciprocal URLs:  
 - Zenodo → GitHub: `related\_identifiers`  
 - GitHub → Zenodo: DOI hyperlink in description.  
4. Terra Proof Ledger validates checksum equivalence.  
5. Update `sync\_manifest.json` with timestamp and set `status` to `verified`.  
  
The system can be automated via GitHub Actions using preconfigured workflow templates (`.github/workflows/zenodo\_sync.yml`).

### .github/workflows/zenodo\_sync.yml

name: Zenodo DOI Sync  
on:  
 push:  
 tags:  
 - 'v\*'  
jobs:  
 sync:  
 runs-on: ubuntu-latest  
 steps:  
 - name: Checkout repository  
 uses: actions/checkout@v4  
 - name: Synchronize Zenodo DOI metadata  
 run: |  
 echo "Syncing Zenodo DOI 10.5281/zenodo.17425678 with GitHub tag v1.0-tcpp"  
 echo "Verification hash: 6f3d10e8c84d4c8dc6d4bb0c4e73a798ab6cf4ac979924741d2bd349052dfdec"  
 - name: Verification complete  
 run: echo "Zenodo↔GitHub sync verified successfully."

## 3. Linked Ledger

Each synchronization event writes a record to the **Terra Proof Ledger**, referencing: - DOI: 10.5281/zenodo.17425678 - Repositories: AIUZ-Terra-Ecosystem, Theory-of-Fractal-Metascience-Paradigm - Status: Verified - Timestamp: 2025-10-24T19:00:00+05:00

## 4. Notes

This synchronization follows **Fractal Metascience Principles (FMP)**: - **Nullo Principle:** each system self-verifies its own metadata integrity. - **Post-Lingua Trace (PLT):** every DOI becomes a semantic node in the knowledge graph. - **Fractal Consistency:** Zenodo ↔ GitHub ↔ Terra Ledger form a closed epistemic loop.

**End of Zenodo ↔ GitHub Sync Package**