

Translation Sync Action

AI-Powered Translation Automation for Documentation

GitHub Action • Claude Sonnet 4.5 • MyST Markdown

QuantEcon Project

What It Does

Automatically translates documentation when source content changes

Monitor merged PRs → Detect changes → Translate → Create review PR

Key Capabilities

- ✓ **Smart Diff Translation** – Only translates modified sections
- ✓ **Recursive Subsections** – Full support for nested headings (##-#####)
- ✓ **Language Configuration** – Extensible system for language-specific rules
- ✓ **MyST Markdown Aware** – Preserves code, math, directives
- ✓ **Consistent Terminology** – Built-in glossaries (355+ terms for zh-cn)
- ✓ **Review Workflow** – All translations go through PR review
- ✓ **GPT5 Validated** – 100% pass rate on comprehensive test suite

How It Works

Section-Based Translation Approach

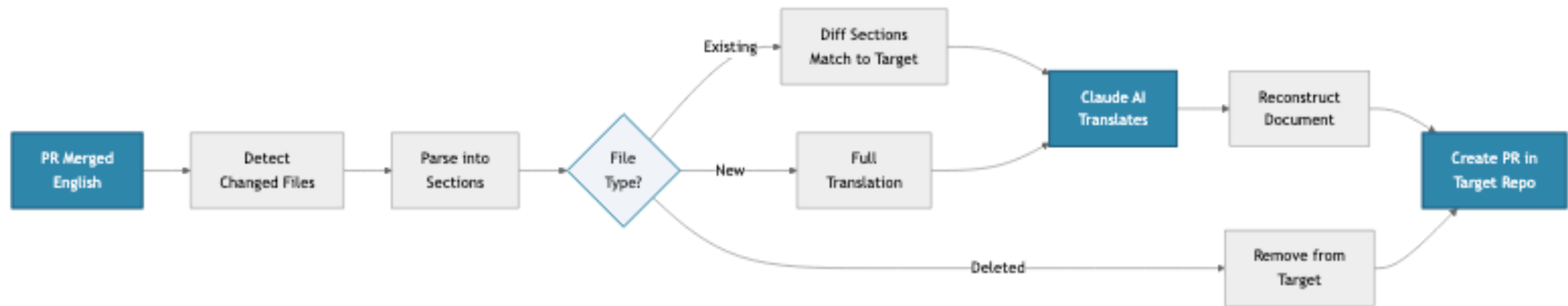
Problem: Block-Level

- Can't match across languages
- Loses translation context
- Complex mapping logic

Solution: Section-Based

- Match by position
- Translate full sections
- Simple: Add, Update, Delete

Translation Workflow



LLM-Powered Translation (Claude Sonnet 4.5)

UPDATE Mode

(changed sections)

- Sends: old EN + new EN + current translation
- Claude understands what changed
- Preserves style and terminology
- Uses glossary for consistency

NEW Mode

(new sections)

- Translates with full context
- Uses glossary for consistency
- Maintains document structure

Status & Getting Started

Current Status

- 📦 v0.5.1 – Production-Ready
- 🌟 **Language-Extensible Architecture**
- ✅ 147 tests passing (100%)
- 🔧 24 GitHub test scenarios

Use Cases

- Multi-language documentation
- Educational content (QuantEcon lectures)
- Technical documentation

Resources

GitHub

quantecon/action-translation-sync

Docs

10 comprehensive guides in `docs/`

Tools

- Bulk translator for initial setup
- GitHub testing framework

License

MIT