

# Translation Action

**AI-Powered Translation Automation for Documentation**

GitHub Action • Claude Sonnet 4.5 • MyST Markdown

*QuantEcon Project*

# What It Does

**Automatically translates and reviews documentation when source content changes**

Monitor merged PRs → Detect changes → Translate → Create PR → AI Review

## Key Capabilities

- ✓ **Smart Diff Translation** – Only translates modified sections
- ✓ **MyST Markdown Aware** – Preserves code, math, directives
- ✓ **Consistent Terminology** – Built-in glossaries (357 terms)
- ✓ **AI-Powered Review** – Automated quality assessment with scoring
- ✓ **Language Extensible** – Configurable rules per target language

# How It Works

## Section-Based Translation Approach

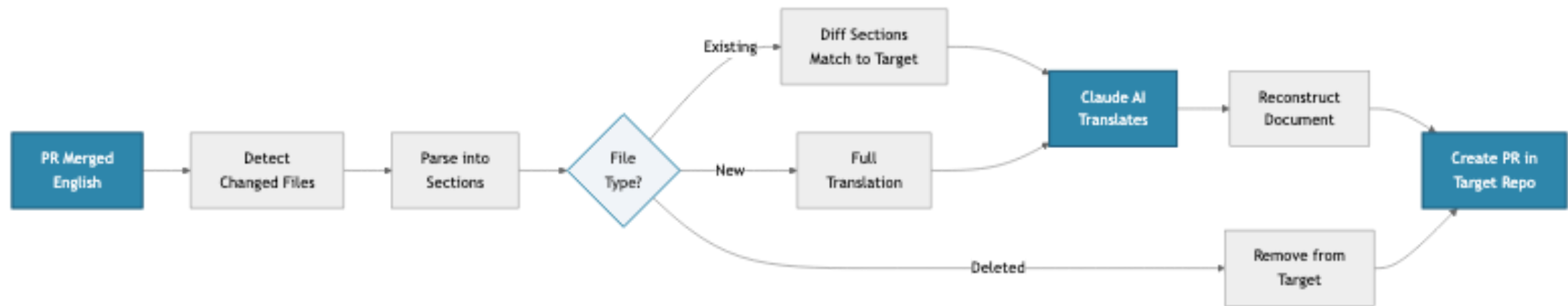
### Problem: Block-Level

- 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

# Two Operational Modes

## Sync Mode

*(runs in SOURCE repo)*

- Monitors merged PRs
- Detects changed sections
- Translates incrementally
- Creates PR in target repo
- Updates heading-maps

## Review Mode

*(runs in TARGET repo)*

- Evaluates translation PRs
- Scores: accuracy, fluency, terminology
- Checks diff correctness
- Posts review comments
- PASS / WARN / FAIL verdicts

# Status & Getting Started

## Current Status

 **v0.7.0** – Testing & Development

 **Two Modes:** Sync + Review

 183 tests passing

 24 GitHub test scenarios

## Use Cases

- Multi-language documentation
- Educational content
- OSS localization

## Resources

**GitHub:** QuantEcon/action-translation

**Docs:** 11 guides in `docs/`

**Tools:** Bulk translator, test framework

**License:** MIT