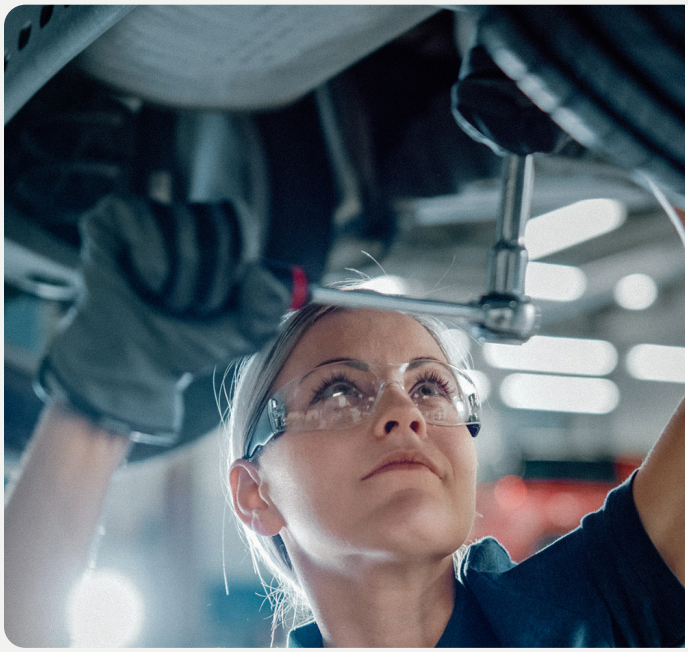
Case Study

# Transforming Technical Documentation with AI-Powered Simplified Technical English Adaptation



## Client Profile

A manufacturing leader supplying cutting-edge equipment for construction, mining, forestry, and industrial machinery wanted to optimize their technical documentation for global accessibility. With a reputation built on precision engineering, the client needed their documentation to match their commitment to excellence.

## The Challenge

The client faced a complex linguistic challenge: their original Japanese documents had been translated into English and now needed adaptation to comply with Simplified Technical English (STE) standard ASD-STE100.

This international specification requires technical documentation to be written in a controlled natural language, which improves clarity and reduces ambiguity for non-native English speakers. This project presented several significant challenges:

**Unprecedented scale and complexity**

Each batch for adaptation contained over 700 files and 100,000 words

Documents were in DITA XML format, requiring meticulous preservation of structural elements and tags

The technical precision of the subject matter required strict adherence to industry-specific terminology

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### Specialized linguistic requirements

All content needed to follow ASD-STE100 guidelines, including approved terminology, verb usage, and writing rules

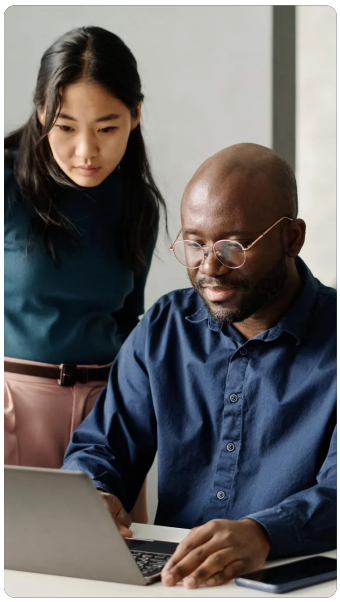
Unlike traditional translation projects with source-to-target language mapping, the project required English-to-English adaptation while preserving the content's original meaning

The STE glossary contained thousands of approved terms that had to be matched contextually without using traditional bilingual matching techniques

## The Solution

### AI-Enhanced Linguistic Engineering

Argos Multilingual developed a custom, multi-faceted linguistic engineering approach as part of our MosAIQ solution that integrated cutting-edge AI with specialized human linguistic expertise. We configured our advanced Computer-Assisted Translation (CAT) tools for the DITA XML structure, ensuring all formatting, tags, and structural elements remained intact throughout the adaptation process. This intelligent content management system preserved the technical functionality of the documentation while allowing for linguistic optimization.



**Argos MosAIQ AI-powered localization platform:**

Utilizes state-of-the-art Large Language Models (LLMs) specifically fine-tuned for technical content adaptation

Systematically applies ASD-STE100 writing rules across the entire document corpus

Maintains consistent terminology and phrasing throughout all documentation

**Our innovative terminology management solution transcends traditional character-based matching in several ways:**

Advanced Natural Language Processing (NLP) encodes both the content segments and the STE glossary into semantic vector spaces

The system identifies terminology matches based on contextual and semantic relevance, rather than using brute-force matching

An intelligent term selection approach significantly improves efficiency by presenting linguists with only the most appropriate terminology for each content segment

## Human-in-the-Loop Approach Maximizes Effectiveness

**The integration between AI and human expertise delivers optimal results:**

Specialized linguists with STE expertise review and refine the AI-generated adaptations

The integrated workflow maintains XML integrity throughout the review process

Quality checks verify both technical accuracy and STE compliance

Implementation Process

**Implementation followed a carefully organized workflow designed to maximize efficiency and ensure quality.**

01

## Content Analysis & Preparation

Engineering teams analyzed the DITA structure and prepared the XML files for processing while preserving all technical elements.

02

## AI System Configuration

Language models were fine-tuned with STE guidelines and client-specific requirements.

03

## Terminology Embedding

The terminology database was processed through Argos' semantic embedding system to enable contextual matching.

04

## Automated Adaptation

Argos' MosAIQ system performed the initial STE adaptation, transforming standard English into fully compliant STE content.

05

## Human Expert Review

Specialized linguists reviewed the AI output, focusing on nuanced aspects requiring human judgment.

06

## Quality Verification

Final technical and linguistic quality checks ensured the documentation met both the client's standards and STE requirements.

07

## Format Verification

Engineering teams verified that all DITA XML structures remianed intact and fully functional.

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## The Results

**The project proved that the best approach combines AI efficiency, human linguistic expertise, and attention to technical content integrity.**

| | AI-Enhanced Solution | Traditional Approach | Improvement |
|---|---|---|---|
| Total Linguist Hours | 70 hours | 400+ hours | **82.5% reduction** |
| Turn Around Time | 1-1.5 weeks (using 1 or 2 linguists) | 5-10 weeks (using 1 or 2 linguists) | **80-85% faster** |
| STE Term Verification | Automated with semantic matching | Manual lookup and verification | **Significant cognitive load reduction + error prevention** |


All XML files maintained 100% DITA structural integrity with no implementation errors

The documentation achieved full compliance with ASD-STE100 specifications

Precise technical meaning was maintained, while clarity and accessibility improved

The adapted content integrated flawlessly with the client's existing systems, a significant improvement over previous attempts with other language service providers

More understandable, consistent, and unambiguous technical documentation provide a better user experience

## Focusing on Continuous Improvement

The successful implementation led to an expanded partnership with the client and multiple follow-up projects. Using the client's feedback, Argos continues to refine the solution and fine-tune our MosAIQ platform to achieve even higher quality.

Because the methodology is transferable to other controlled language standards, we are working to expand the solution to other industries with controlled language requirements. We are also developing more sophisticated semantic matching capabilities to handle industry-specific terminology with greater precision.

Ready to learn more? **info@argosmultilingual.com** **www.argosmultilingual.com**