

Advancing CAT Tool Features to enhance Consistency in MT and Generative AI Outputs

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Abstract

Recently, generative artificial intelligence (GenAI) has been perceived as a “silver bullet” for achieving faster, cheaper, and better translation production. However, in professional localisation, AI capabilities alone are not enough, as the still time-consuming post-editing (PE) of machine translation (MT) and GenAI output proves. The features and processes presented in this work aim to reduce these efforts by enhancing terminological control and translation consistency within the CAT environment STAR Transit¹.

1 Inconsistency in AI-driven Output

Despite high quality MT and GenAI outputs, inconsistencies and hallucinations remain a key challenge, often causing repeated corrections of similar error types. This highlights the need for advanced CAT tools features to improve consistency, particularly in domains such as technical documentation. To address this, four key features are proposed that leverage terminology integration, contextual processing, and MT reuse.

2 Advanced Features for Consistency

For terminological consistency, we introduce features for engine-level glossary integration and segment-specific term-pair constraints. For translation consistency, we present context-aware processing and systematic reuse of MT outputs.

2.1 Automated MT Glossary Synchronisation

As manual synchronising of glossaries of multiple language combinations is not feasible at scale, we implemented an automated workflow for

consistent MT and GenAI output. Using the standard export functionality of TermStar² via its proprietary API, multilingual glossaries are extracted with a customised script, converted into the required format of the MT platform and uploaded through the platform’s standard import interface.

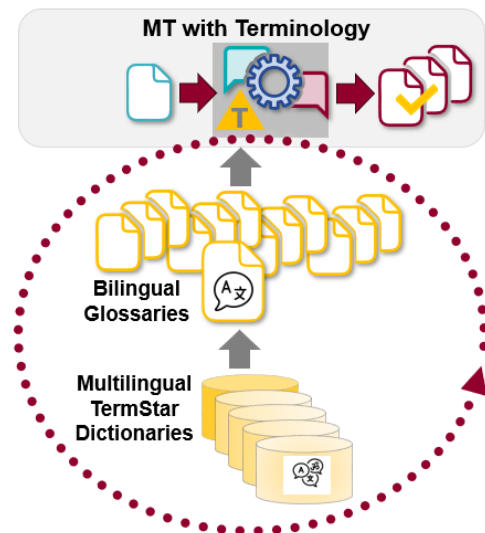


Figure 1: Automated workflow from glossary extraction to synchronisation with DeepL.

In the current use case, this scalable workflow synchronises over 650 domain-specific glossaries on a weekly basis, ensuring that the most recent dictionary updates are quickly available for translation workflows, and can be adapted to different requirements.

When multiple translation candidates are available, the process selects the first entry based on dictionary or entry order, without applying additional selection criteria such as contextual fields.

¹ Pricing/licensing upon request (star-group.net/en/products)
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² STAR’s Terminology Management System

2.2 Term-pair Constraints for GenAI

Linking terminology directly to the source segment enables consistent use of validated customer terminology. Originally developed for NMT systems with integrated terminology constraints³, the feature is now extended to GenAI engines. If a match is found, the corresponding source term and its approved translation are retrieved from the dictionary and automatically supplied to the GenAI engine with the source segment, thereby ensuring terminological consistency during generation.

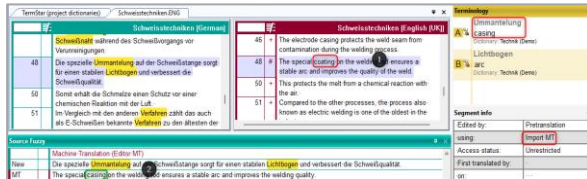


Figure 2: Translation output comparison: (1) Standard MT result vs. (2) MT with applied terminology constraint

The approach corresponds to recent AI-assisted CAT workflows⁴ with terminology-aware generation. First results show improved terminology adherence, although occasional hallucinations confirm that careful verification remains necessary.

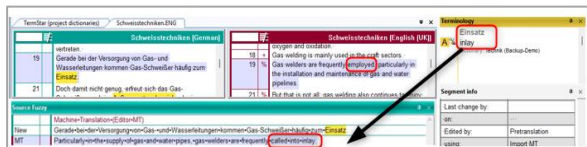


Figure 3: Hallucination produced by term constraint

The feature is activated automatically when a dictionary is assigned to a project. If multiple candidates are available, the system selects the first term pair. The feature will be included in the next release as part of the optional AI feature package.

2.3 Context-aware Segment Translation

Context-aware translation has become established through the integration of GenAI in CAT tools, helping to overcome the limitations of isolated segment processing.⁵

In STAR Transit, the GenAI engine receives not only the current source segment but also a configurable number of preceding and following sentences taken from the same or adjacent paragraphs, thereby providing paragraph-level context during generation. The context range is defined at project level and applied consistently across all

documents in the project while preserving the segment-based structure required for TM efficiency. As illustrated in Figure 4, this improves the handling of pronouns and context-specific terminology and particularly resolves ambiguities and semantics.

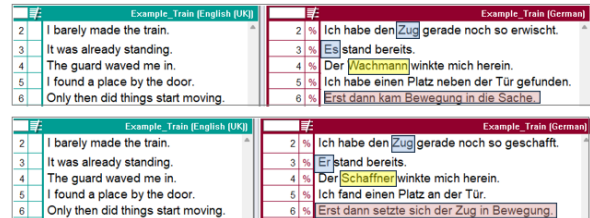


Figure 4: GenAI output comparison between segment-based (top) and context-aware (bottom) translation in STAR Transit

2.4 MT Fuzzy for MT Output Reuse

Existing approaches such as adaptive MT or features like “MatchPatch”⁶ attempt to improve consistency by adapting translations from similar segments previously processed by MT. In contrast, the new standard feature already available in STAR Transit presents previously generated MT output for similar source segments as an “MT fuzzy” without automatically modifying the translation. This reuse of existing MT output provides substantial consistency benefits across related segments, while visually highlighted source-segment differences support efficient PE.

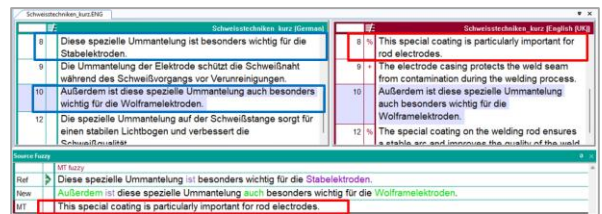


Figure 5: MT fuzzy: reuse of existing MT for fuzzy matches

3 Summary and Outlook

These features demonstrate how CAT tools can evolve to improve the quality of MT and GenAI output within professional translation workflows.

However, further refinements are still needed to enable more controlled and guided terminology support, for example through interactive prompting. In addition, future work will integrate AI-based quality assurance features for improved inconsistency detection and resolution.

³ E.g. TextShuttle (Supertext)

⁴ E.g. SDL Trados Studio (RWS), memoQ (Kilgray), and Phrase Platform.

⁵ Cf. GenAI-based *Copilots* in market-leading CAT tools

⁶ *MatchPatch* is a feature in memoQ.