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**THE USE OF CAT TOOLS AND TRANSLATION MEMORY (TM)
TO ENSURE THE QUALITY OF SPECIALIZED TRANSLATION**

Modern CAT tools (computer-assisted translation tools) and translation memories (TM) have transformed the practice of professional translation, especially in specialized domains. CAT tools segment the text, store previous translations as «source–target» pairs, and automatically insert exact or fuzzy

matches during new translation tasks; this increases productivity and helps to standardize terminology [3, p. 1].

To ensure the quality of specialized translation, two interrelated functions are crucial: the efficient storage and retrieval of relevant segments in the TM, and corpus-based work with terminology (termbase, TB). A well-maintained TM provides the translator with ready-made phrases and established equivalents, reducing the risk of inaccuracies in repetitive or standardized text structures (for example, in technical manuals) [1, p. 3].

However, simple «match insertion» does not guarantee adequacy in a specialized context: contextual relevance, terminological accuracy, and formatting are crucial. Therefore, modern approaches combine TM with semantic search algorithms (sentence encoders, embeddings), which make it possible to find useful partial and inexact matches even when surface similarity is low. Such technologies have shown better results for fuzzy matches below the 0.8 threshold – precisely where traditional edit-distance methods performed less effectively [3, p. 5–6].

The combination of TM with modern NMT/RA approaches (retrieval-augmented NMT) provides an additional quality boost when working with specialized corpora: the TM can guide the neural system both globally and locally by supplying semantically relevant or formally consistent fragments, which is crucial for maintaining specialized terminology and stylistic requirements. This is particularly useful in low-resource language pairs or in highly specialized domains [2, p. 1].

For the practical assurance of quality, operational rules should be distinguished:

1. Building and cleaning the TM. The accumulated corpus must be validated (removing errors, duplicates, outdated, or irrelevant segments) – a «dirty»TM can reduce quality and introduce incorrect substitutions [1, p. 4].

2. Integration of termbases (TB) and QA rules. Automatic term lookup and checks (for case mismatches, number formats, units) reduce human errors and ensure consistency [1, p. 4].

3. Setting fuzzy threshold and post-editing policies. Confidence levels for 100% / 95% / 85% matches should be established, along with separate workflows for low fuzzy scores (review by a translator, additional contextual search) [3, p. 2].

In specialized translation (medicine, pharma, engineering), a collaborative approach is crucial: centralized TBs/TMs on cloud platforms allow the team of translators, reviewers, and the client to jointly maintain a “single source of truth” for terms and approaches. This reduces discrepancies among translators and speeds up quality checks [1, p. 5]. Research trends show that the intelligent enhancement of TMs (sentence encoders, vector

retrieval) and their integration with NMT lead to significant quality improvements, especially for incomplete or formally divergent matches; however, final quality control and compliance with industry standards remain the responsibility of a human expert.

Thus, to ensure high-quality specialized translation, it is recommended to: systematically collect and clean TMs; combine TMs and TBs with modern semantic search methods; employ retrieval-augmented approaches where appropriate; maintain human oversight during post-editing and validation; and implement team workflow policies (shared TBs/TMs, version control). Such measures improve translation accuracy, consistency, and speed without compromising domain specificity.

Література

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