

# Improving Machine Translation for Post-Editing via Real Time Adaptation

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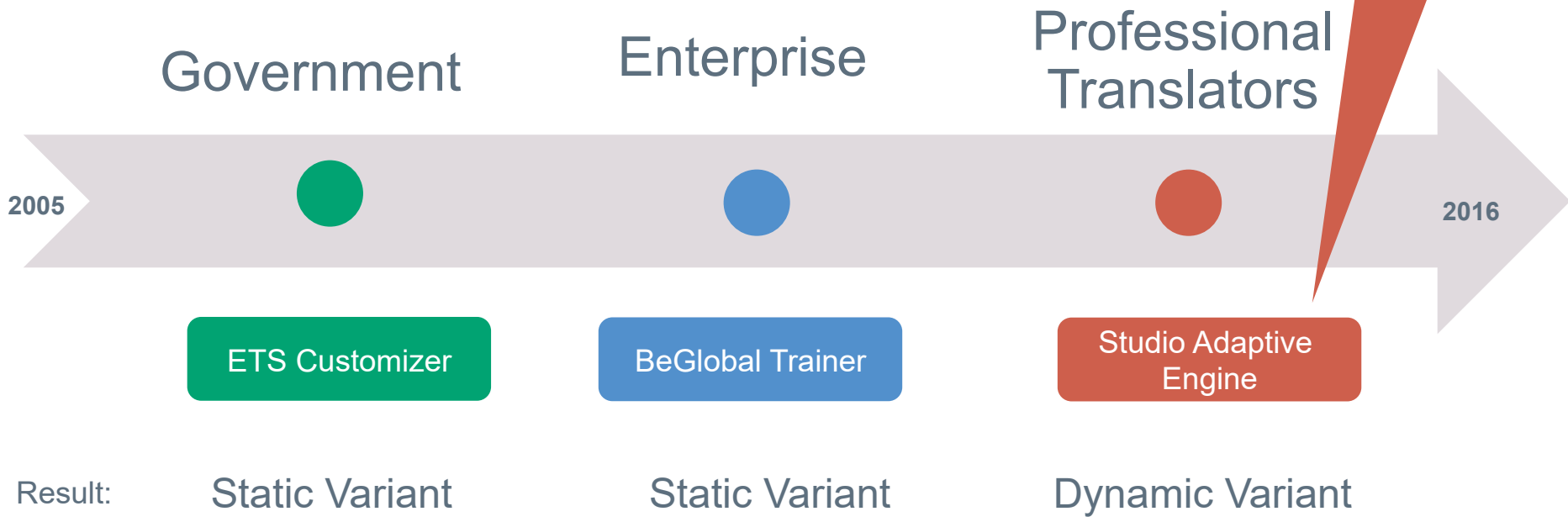
Director of Research and Development, Machine Translation



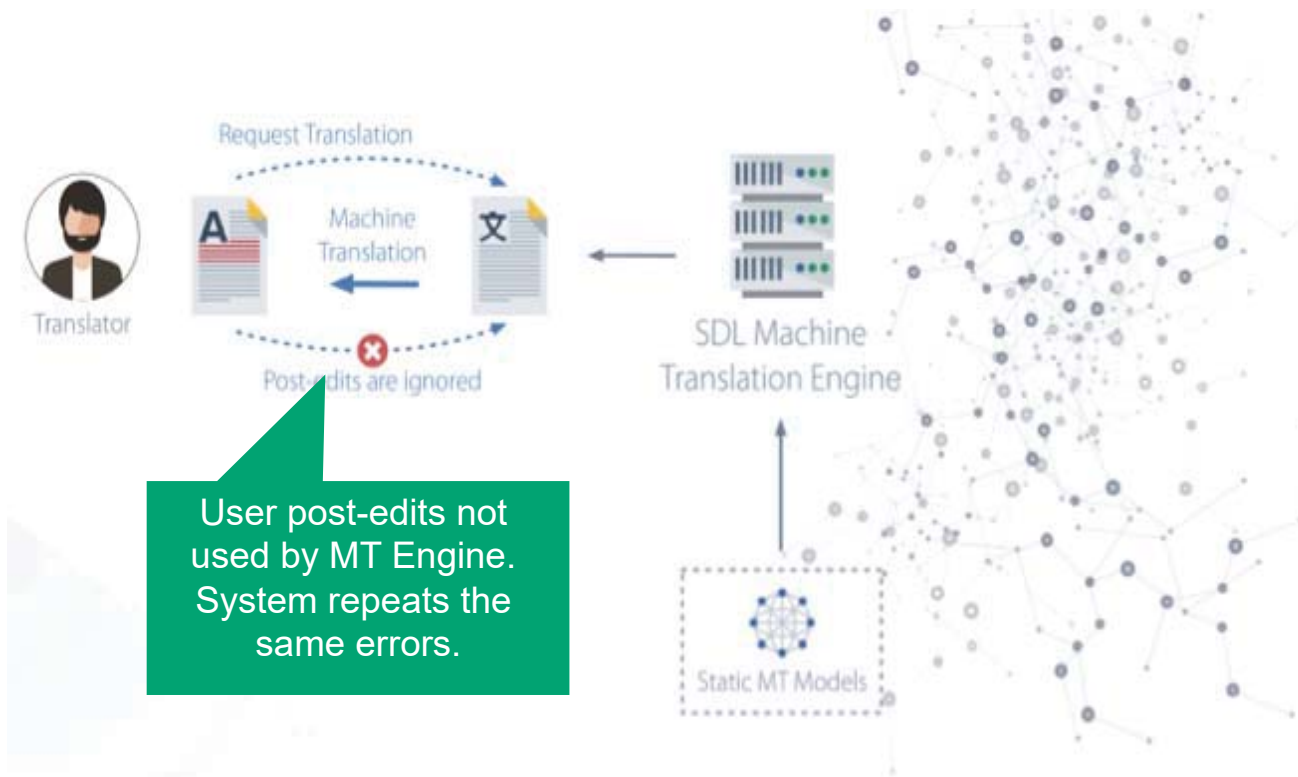
SDL Proprietary and Confidential

# Adaptive Machine Translation at SDL

Focus of this presentation



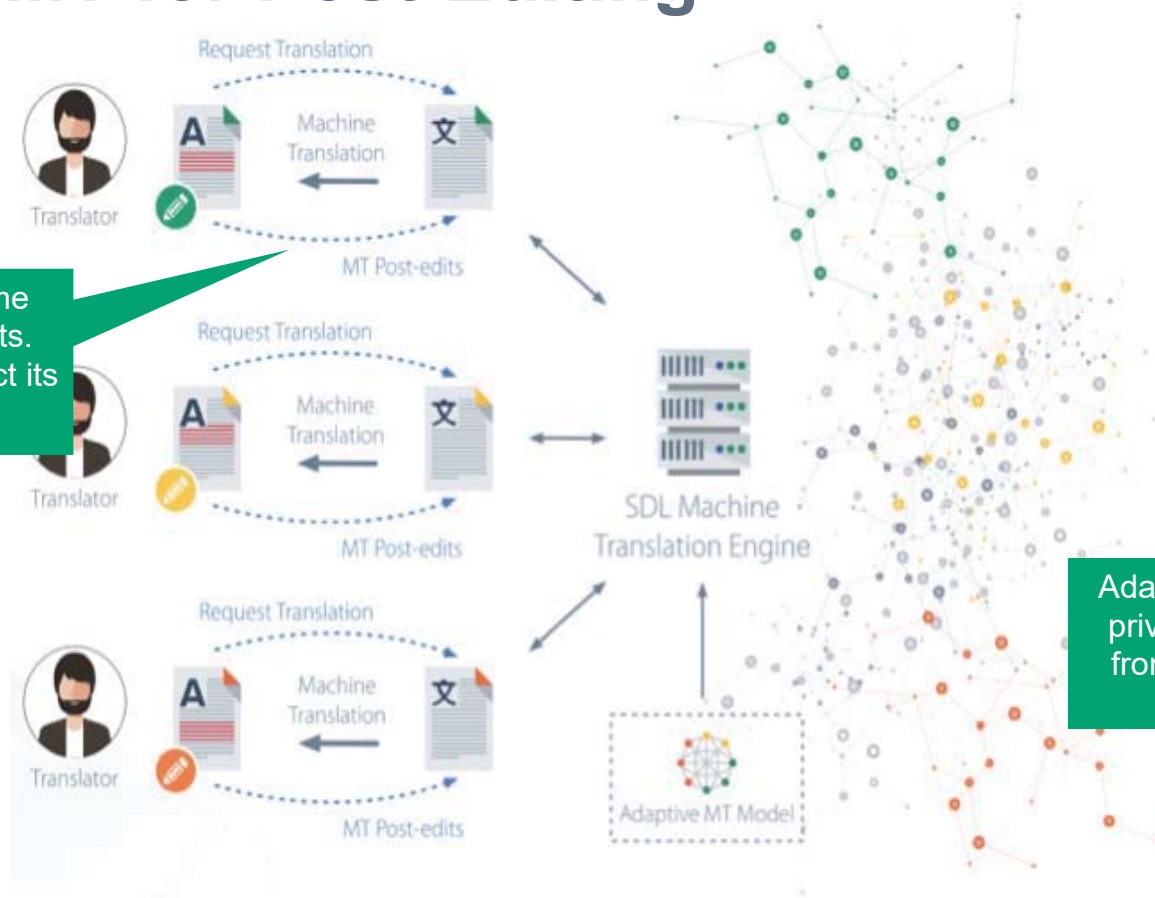
# Standard MT for Post-Editing



User post-edits not used by MT Engine. System repeats the same errors.

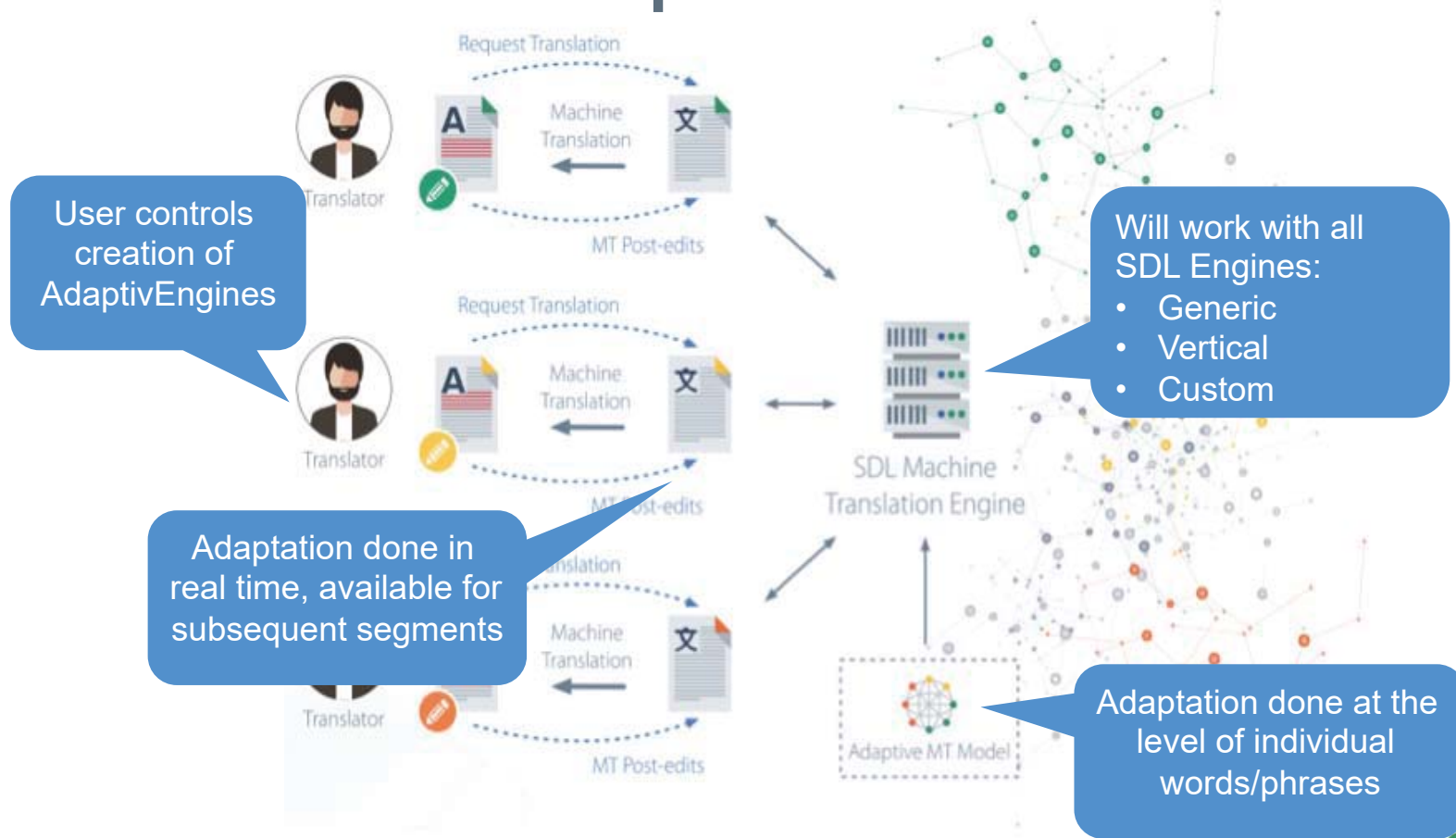
# Adaptive MT for Post-Editing

Seamless and real-time learning from post-edits. System learns to correct its errors

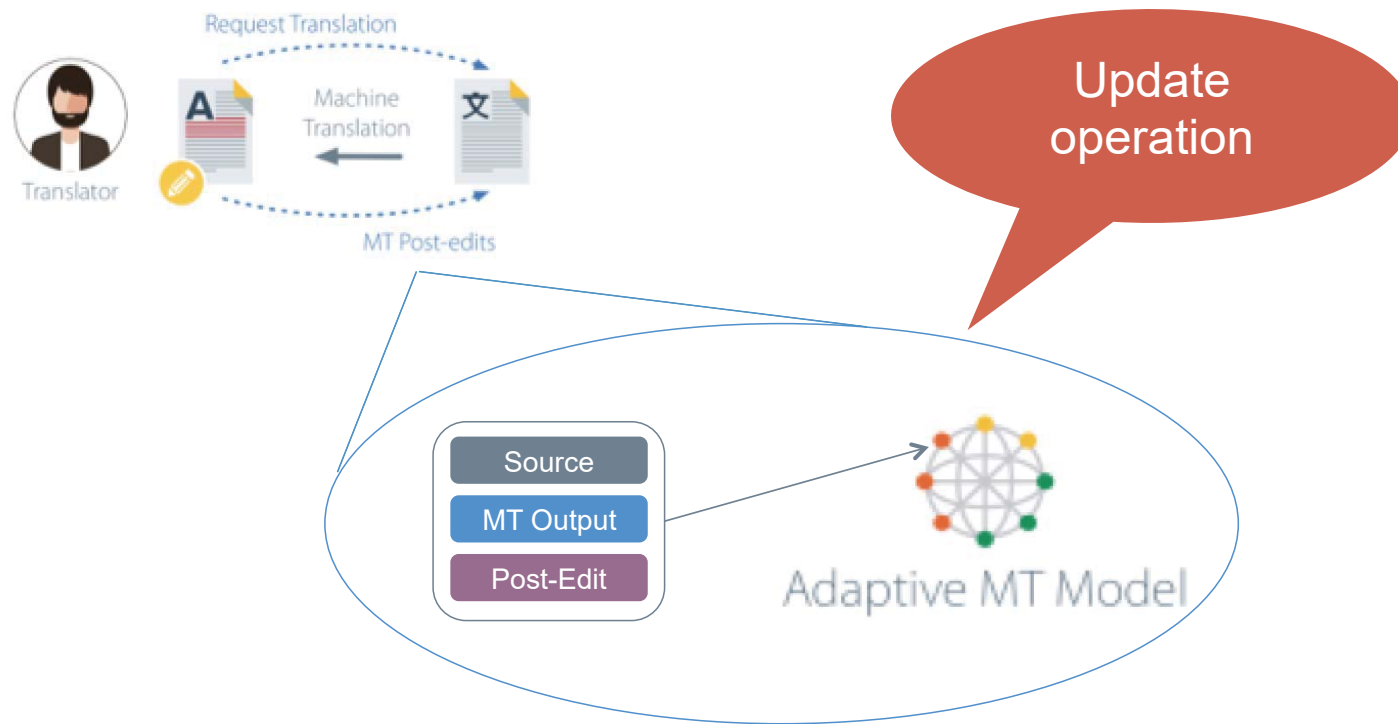


Adaptation provides data privacy: what is learned from a user is available only to that user

# Features of SDL Adaptive MT



# Learning from Post-Edits



## Update Example

- An update of one of the statistical MT models, the translation model

Source

No further requirements are needed

MT

Pas d'autres exigences sont requises  
*No other requirements are needed*

PE

Aucune exigence supplémentaire n'est nécessaire  
*Any requirement additional is not necessary*

# Update Example: Translation Model Adaptation

No further requirements are needed

Pas d'autres exigences sont requises

*No other requirements are needed*

Aucune exigence supplémentaire n'est nécessaire

*Any requirement additional is not necessary*

## Original translations

needed -> requises

further -> autres

no further -> pas d'autres

requirements -> exigences



# Update Example: Translation Model Adaptation

No further requirements are needed

Pas d'autres exigences sont requises

*No other requirements are needed*

Aucune exigence supplémentaire n'est nécessaire

*Any requirement additional is not necessary*

## Good New Translations

needed -> ~~requis~~-nécessaire

further -> ~~autres~~-supplémentaire

no further requirements are -> aucune exigence supplémentaire n'est

## Bad New Translations

are -> n'est

requirements -> exigence

no -> aucune

- Statistical features help choose good rules

# Impact of Adaptive MT on Post-Edit productivity

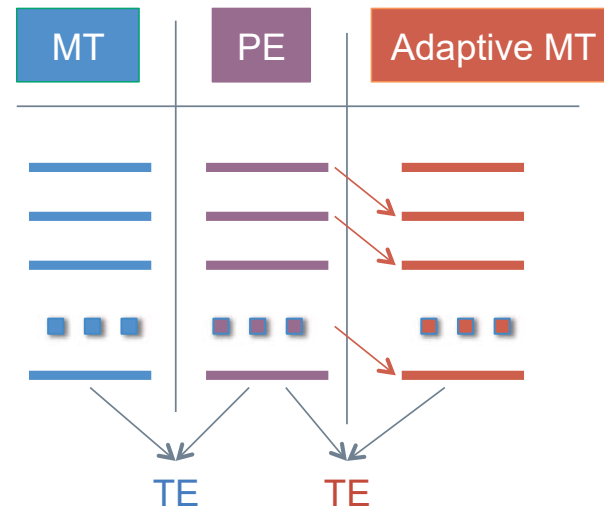
## Test Data

- Two example projects, chosen to illustrate different AdaptiveMT impact
- Project A benefits little from AdaptiveMT while Project B benefits a lot

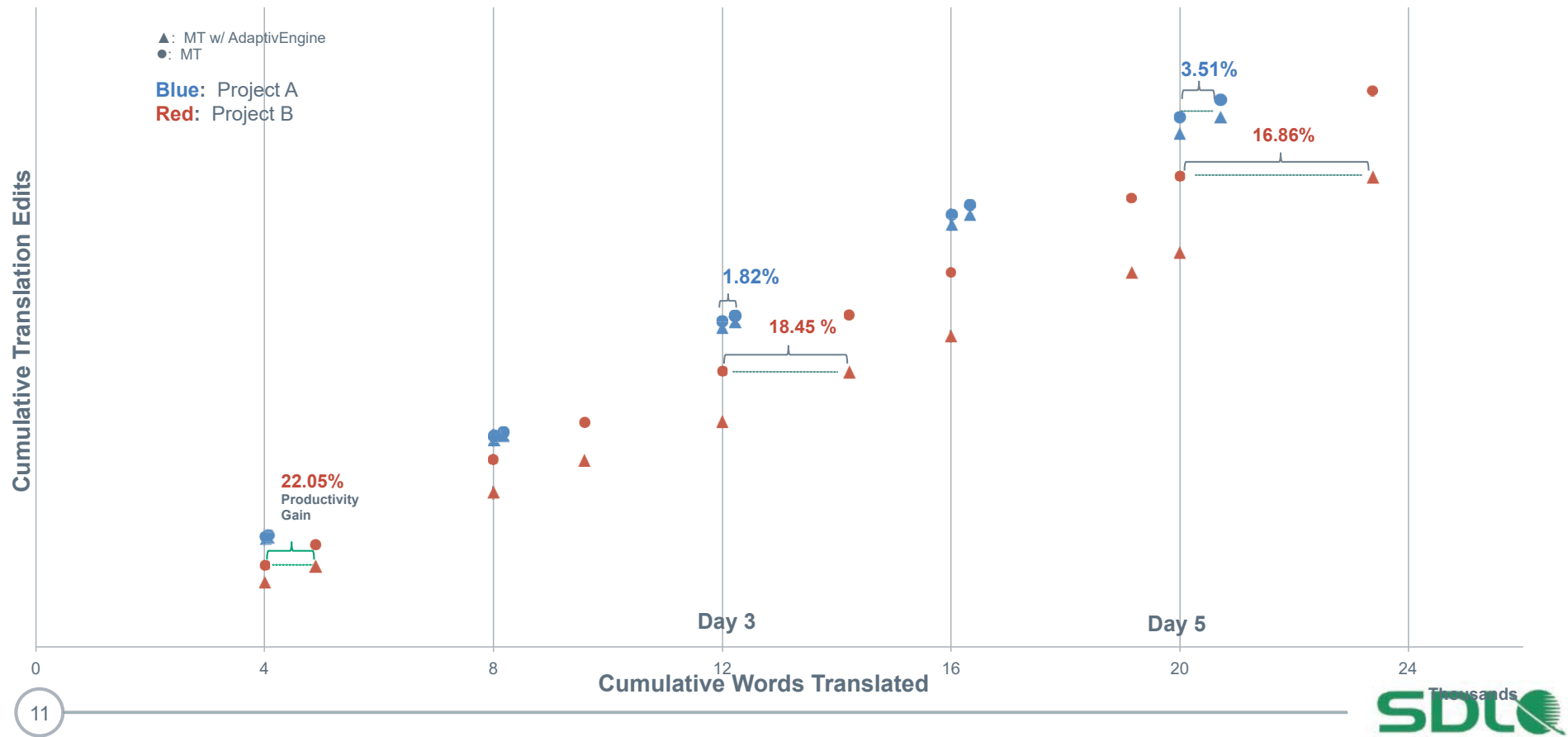
	Project A	Project B
Content Domain	Technical	Industrial
Total segments	2500	2500
Average words/segment	13	9
Longest segment length (words)	65	78

## Experimental Framework

- Translate with both regular and Adaptive engine; measure Translation Edits required to create the same Post-Edit

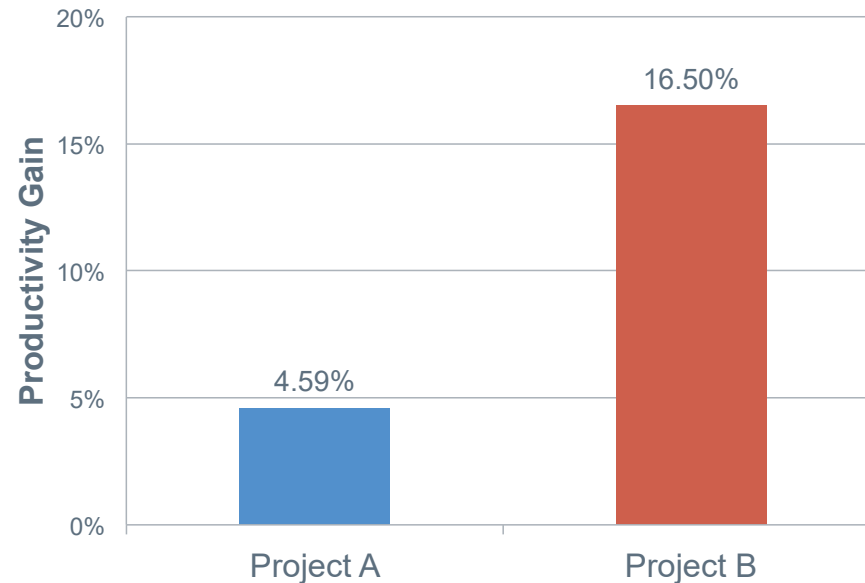


# Impact of Adaptive MT: Productivity Gain



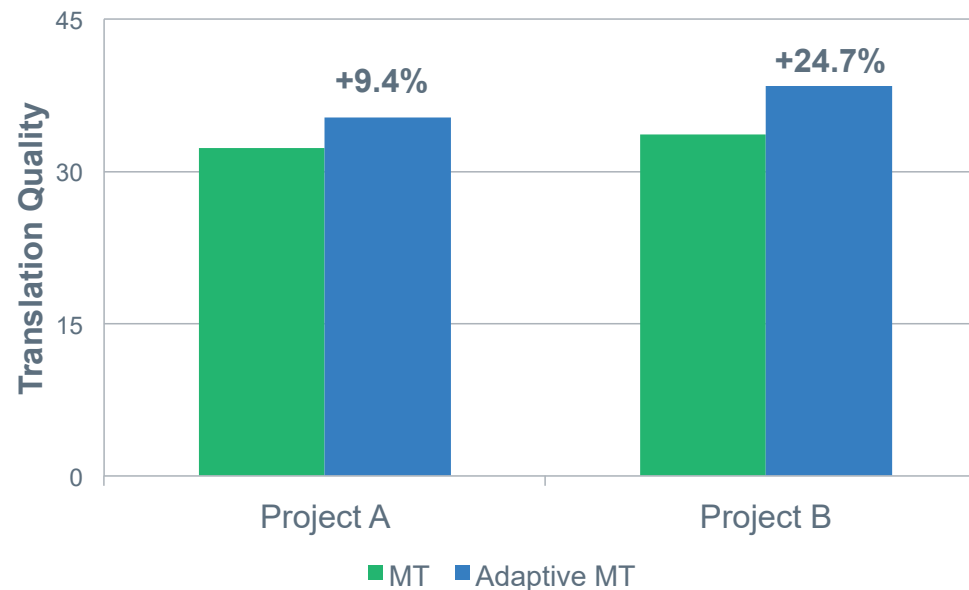
# Impact of Adaptive MT: Productivity

- Overall productivity gain provided by the adaptive engine:



# Impact of Adaptive MT: Translation Quality

- Dynamic statistical model adaptation to content lead to real-time and impactful quality improvement





# Using Adaptive MT in SDL Trados Studio



SDL Trados Studio - Adaptive Engine Demo

File Home View Add-Ins Help

Project Settings Open For Translation Open For Review Open For Sign-off Batch Tasks Explore Containing Folder Add Files Delete Files Check Out Check In Cancel Check Out Create Project Package

Configuration Open File Actions GroupShare Packages Layout Bookmarks

Files

French (France)

Project folders

- Adaptive Engine Demo
- My Tasks
- Sent Tasks

Include subfolders

Welcome

Projects

Files

Reports

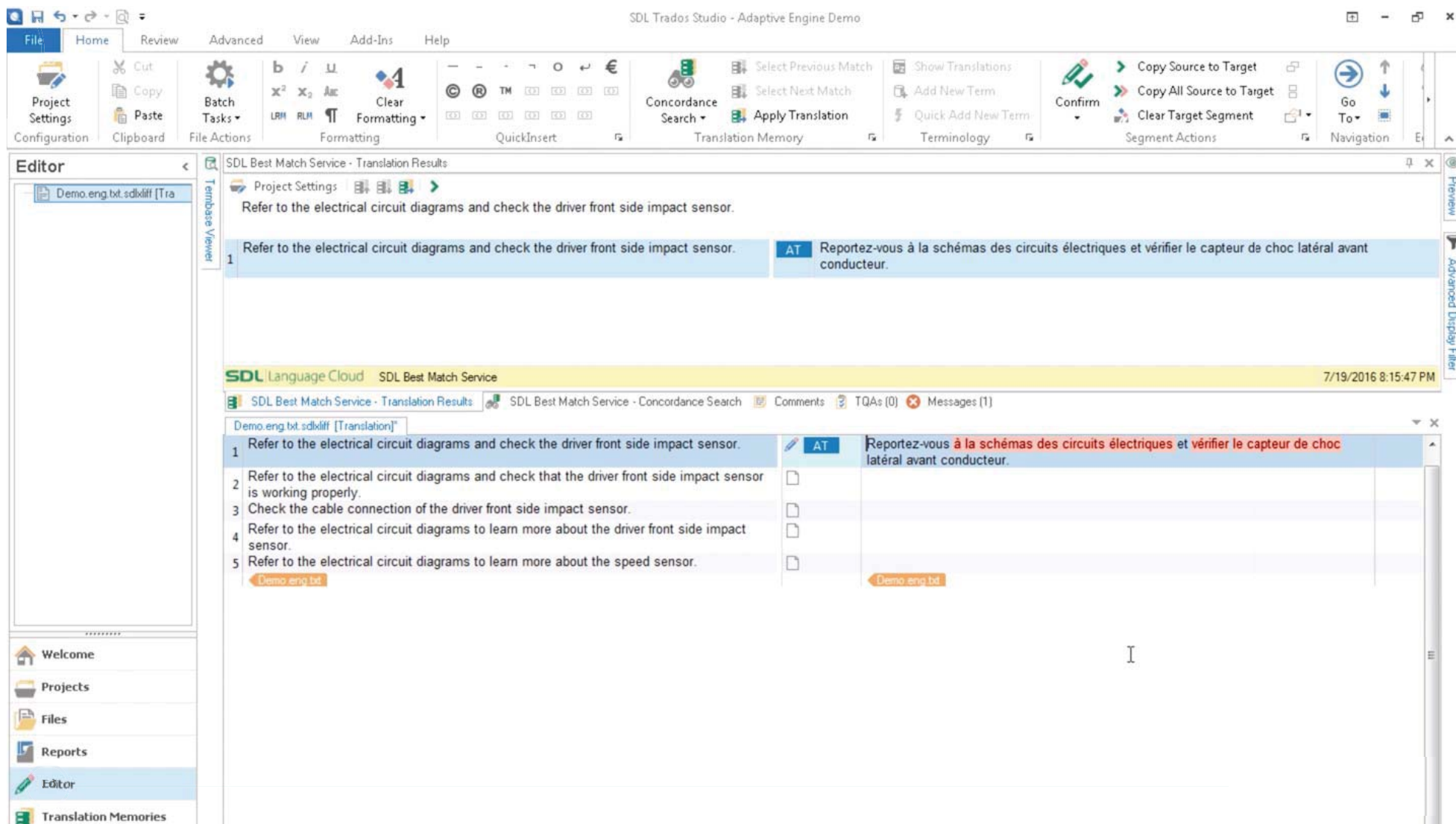
Editor

Translation Memories

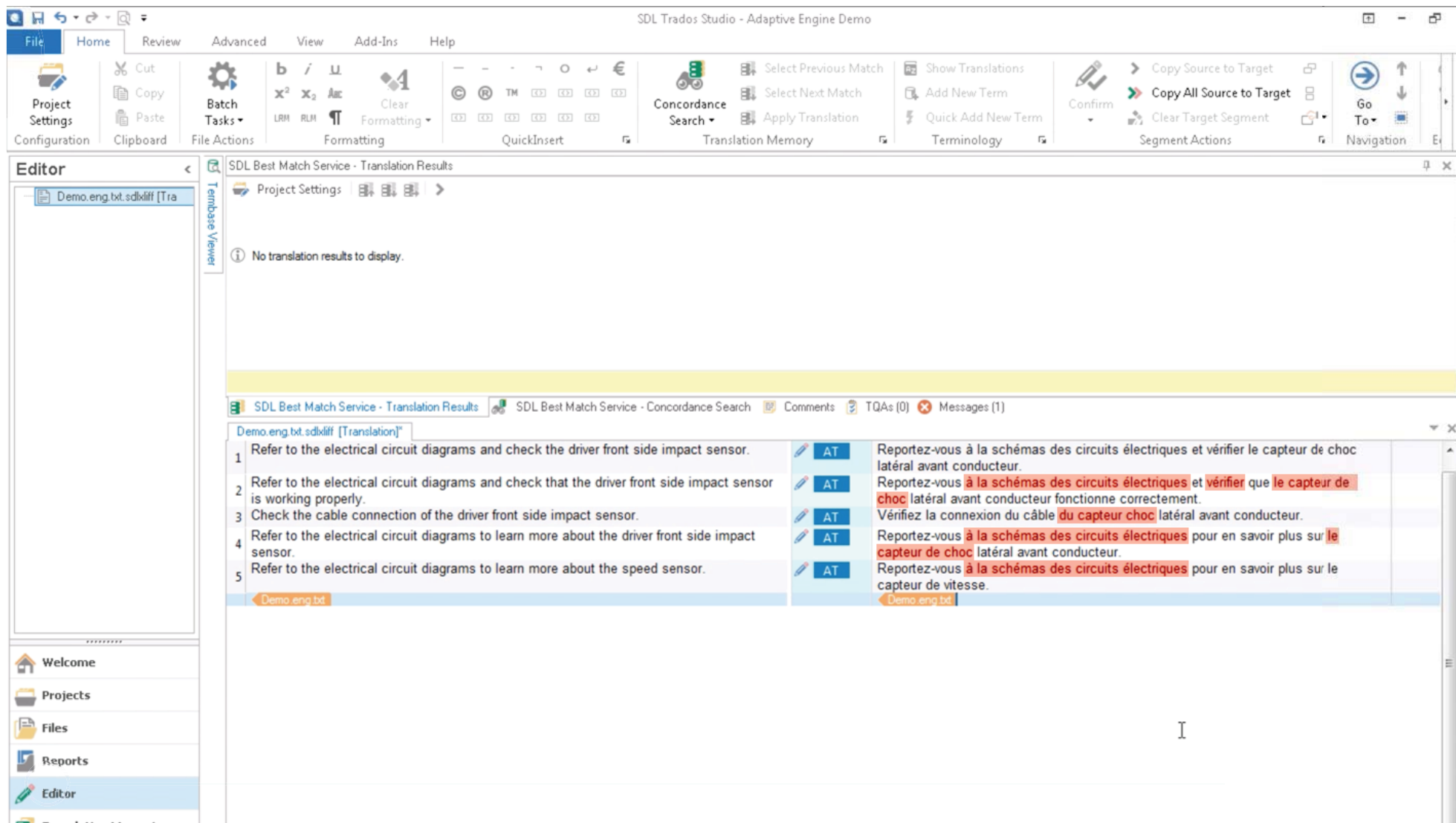
Name	Words	Status	Progress	Size	Usage	File Type Iden...	Path	Local State	Checked Out To
Demo.eng.txt.sdxliff	72	Unspecified		5 KB	Translatable	Plain Text v 1.0...	\	n/a	(none)

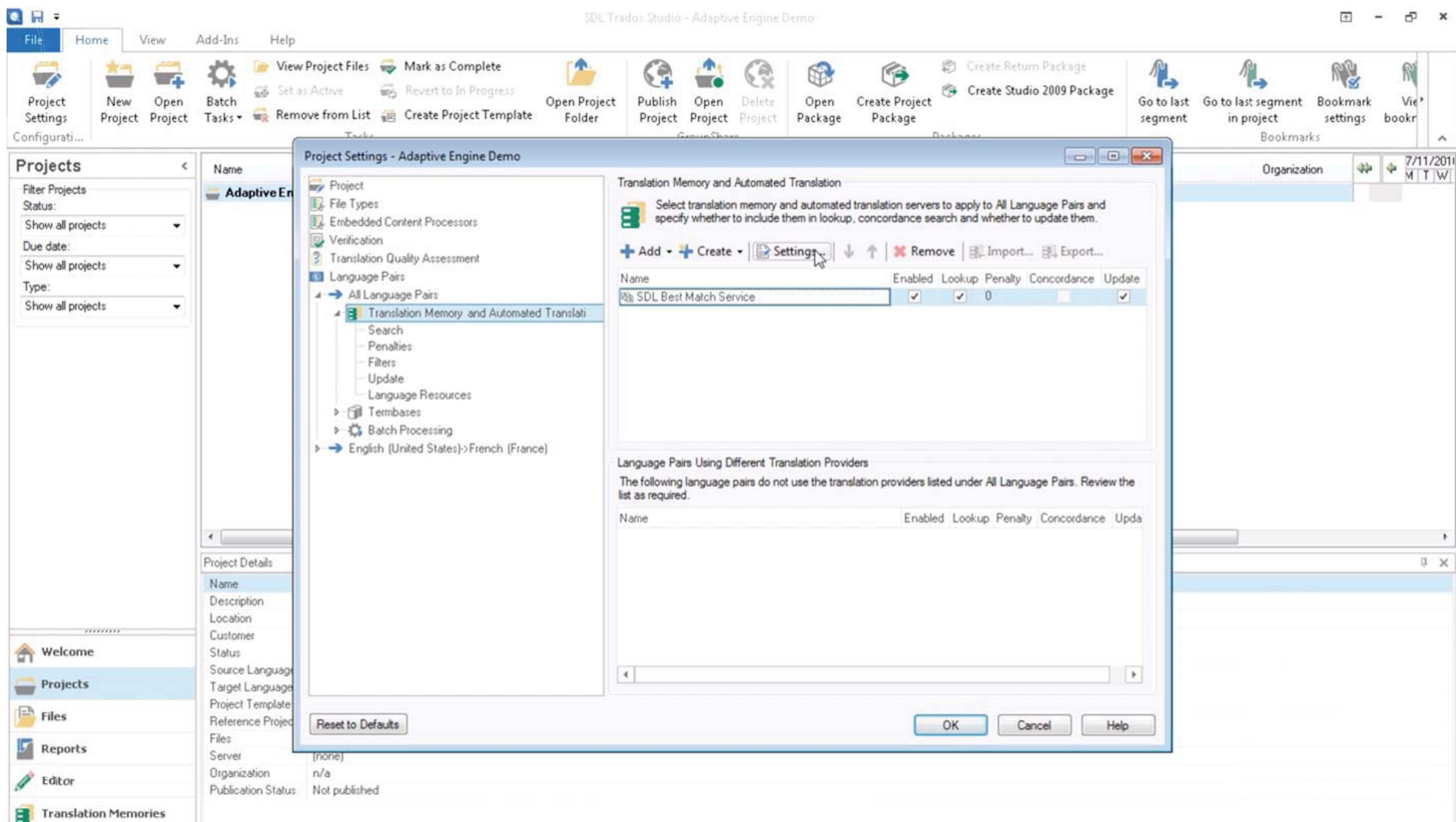
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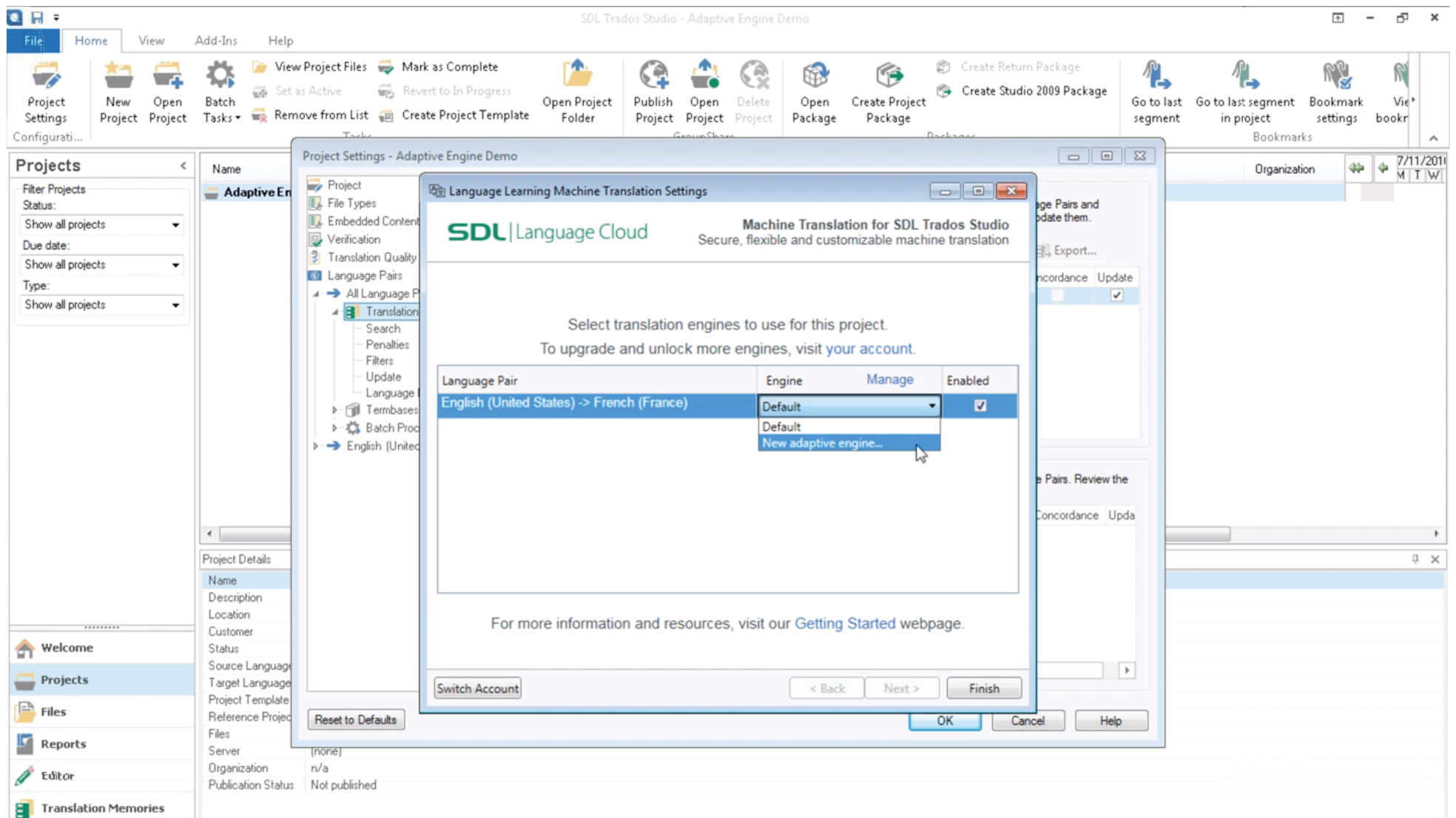
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Words	72

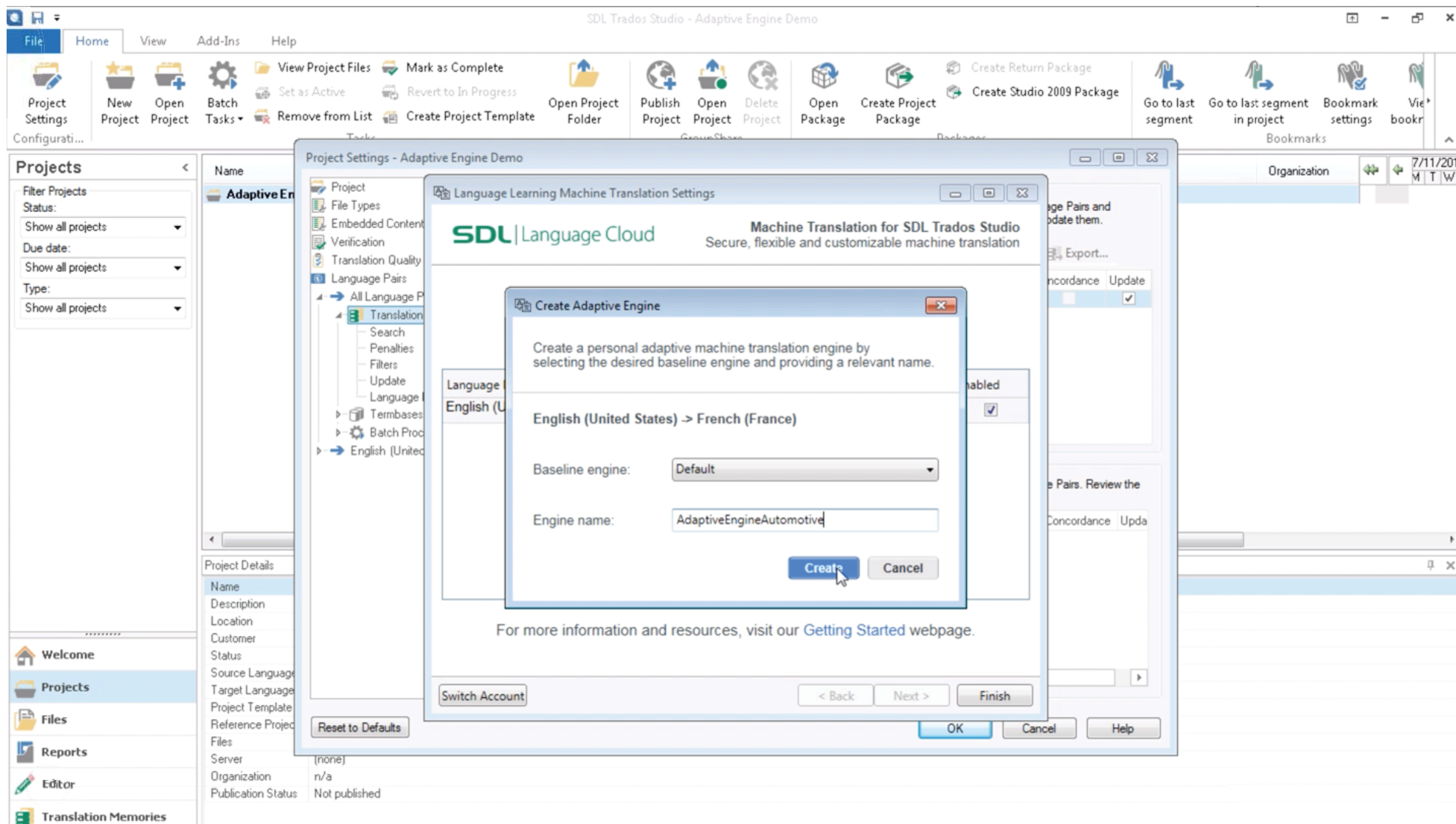


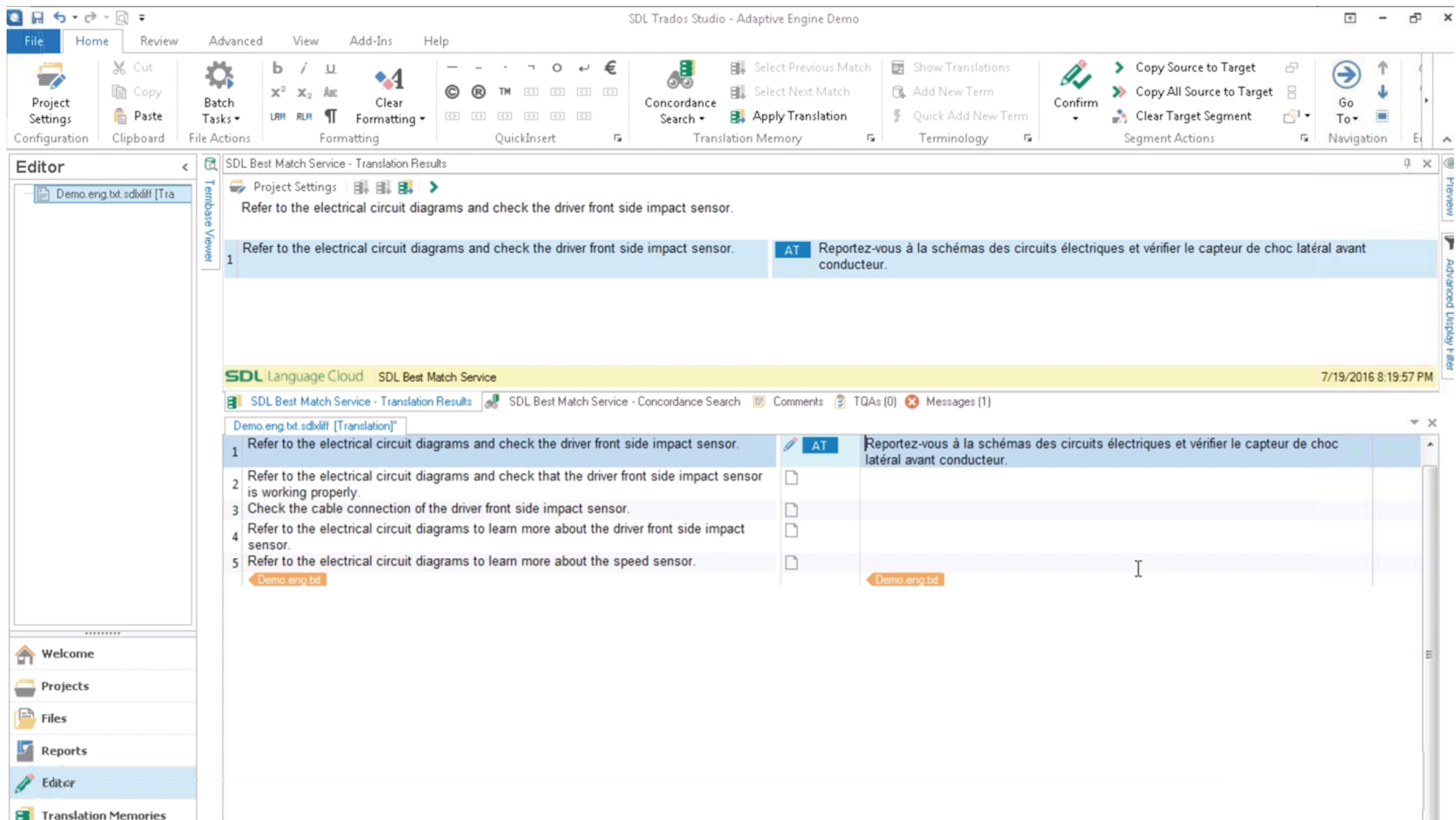


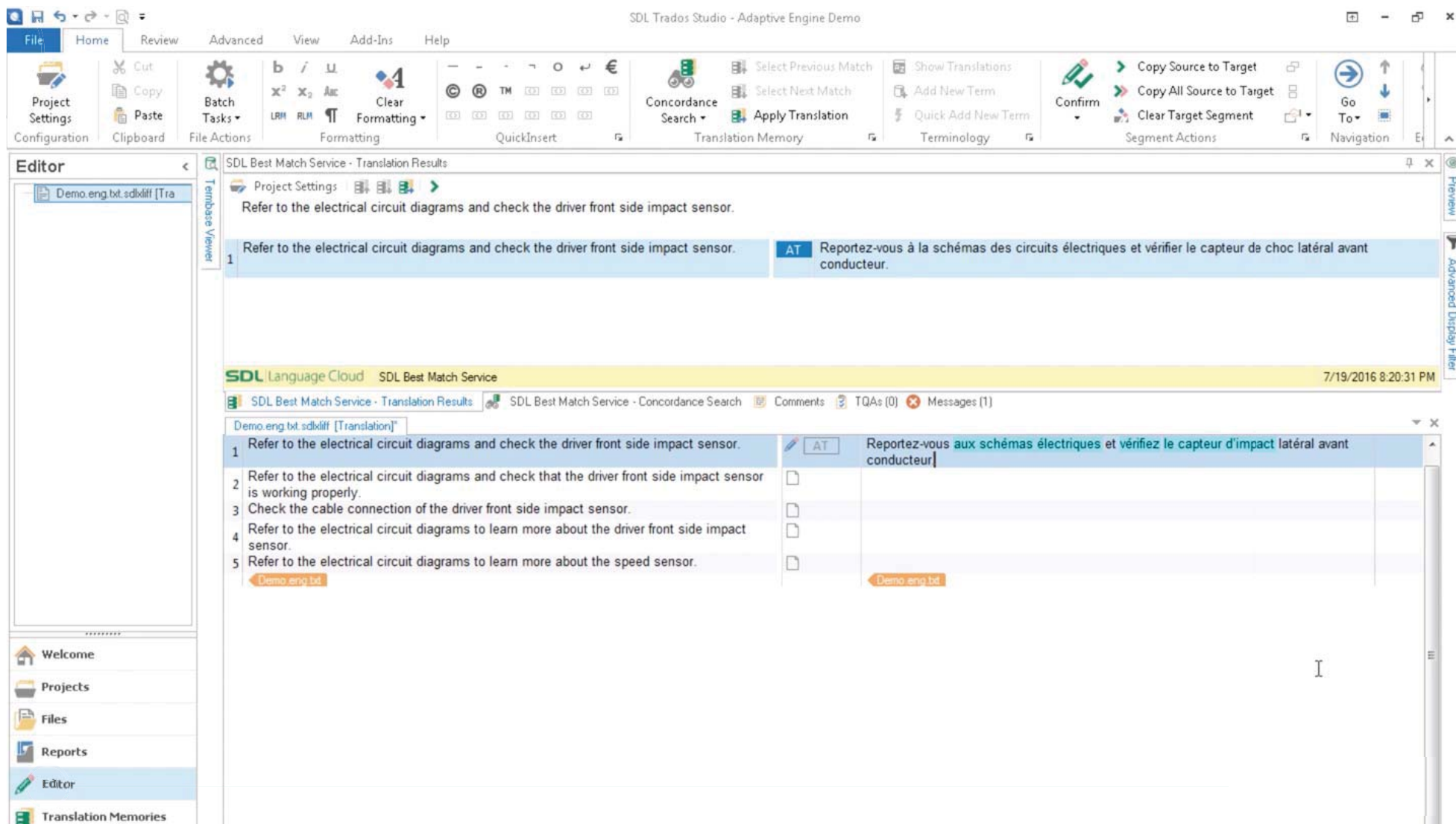


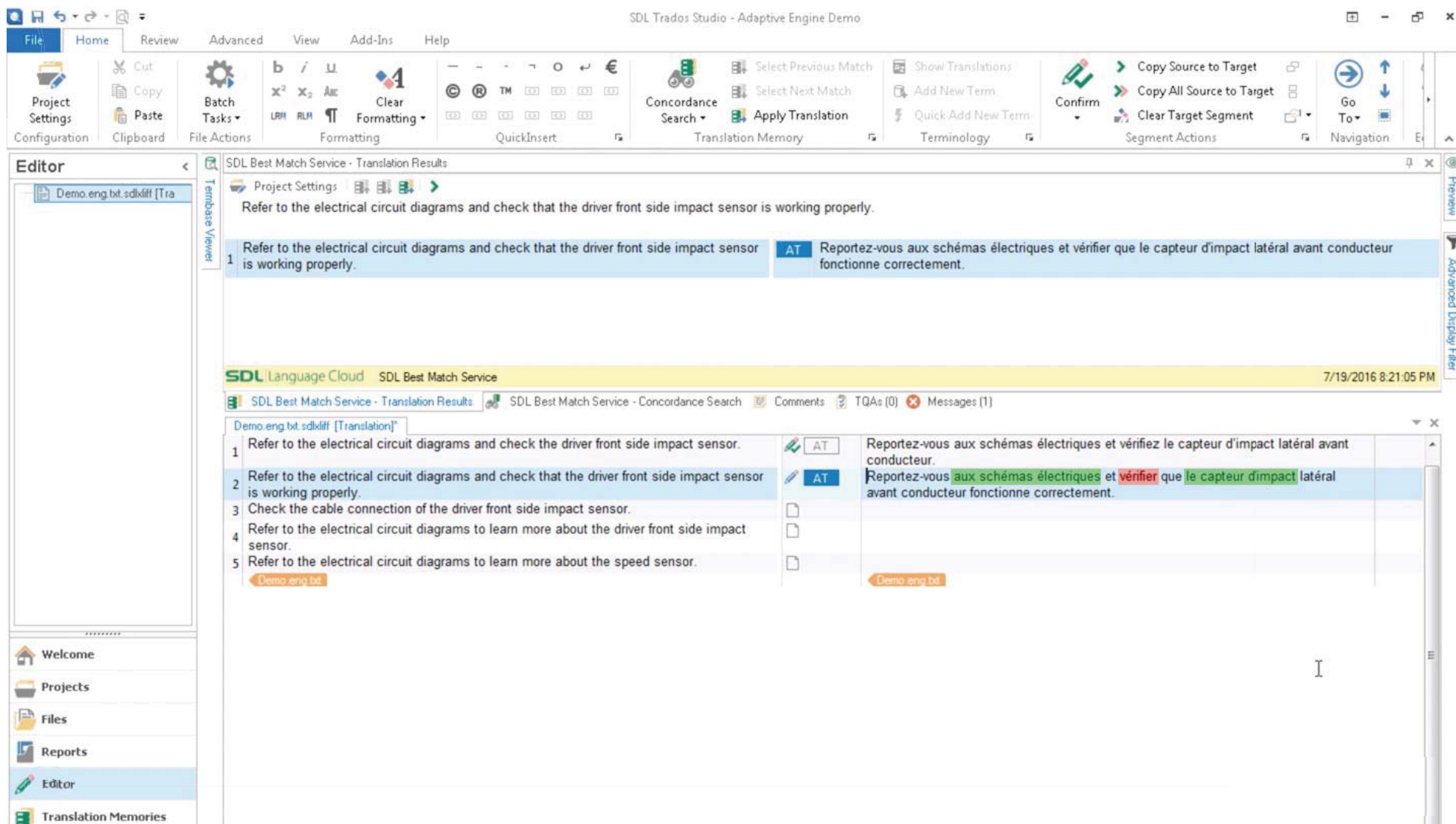


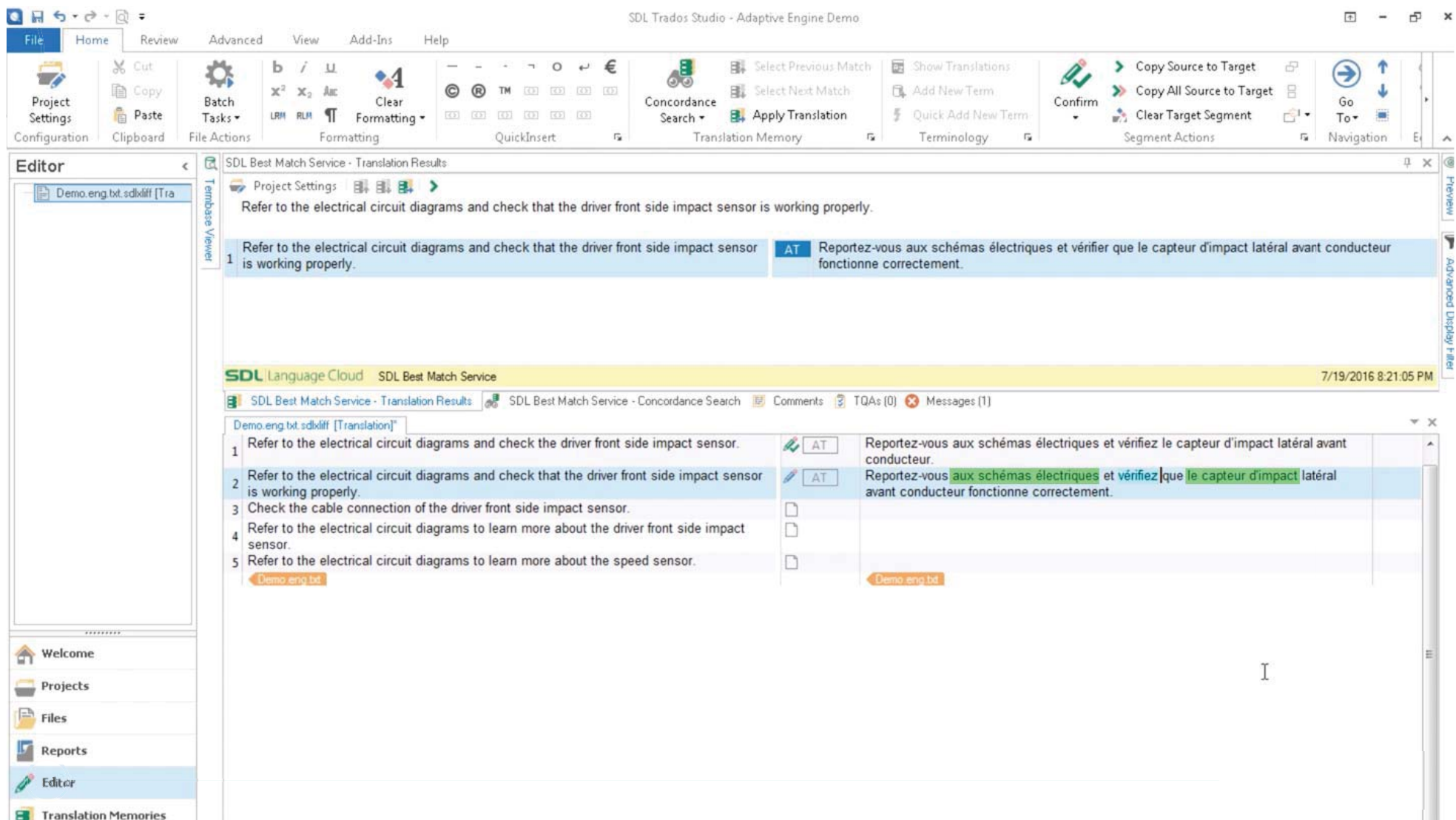




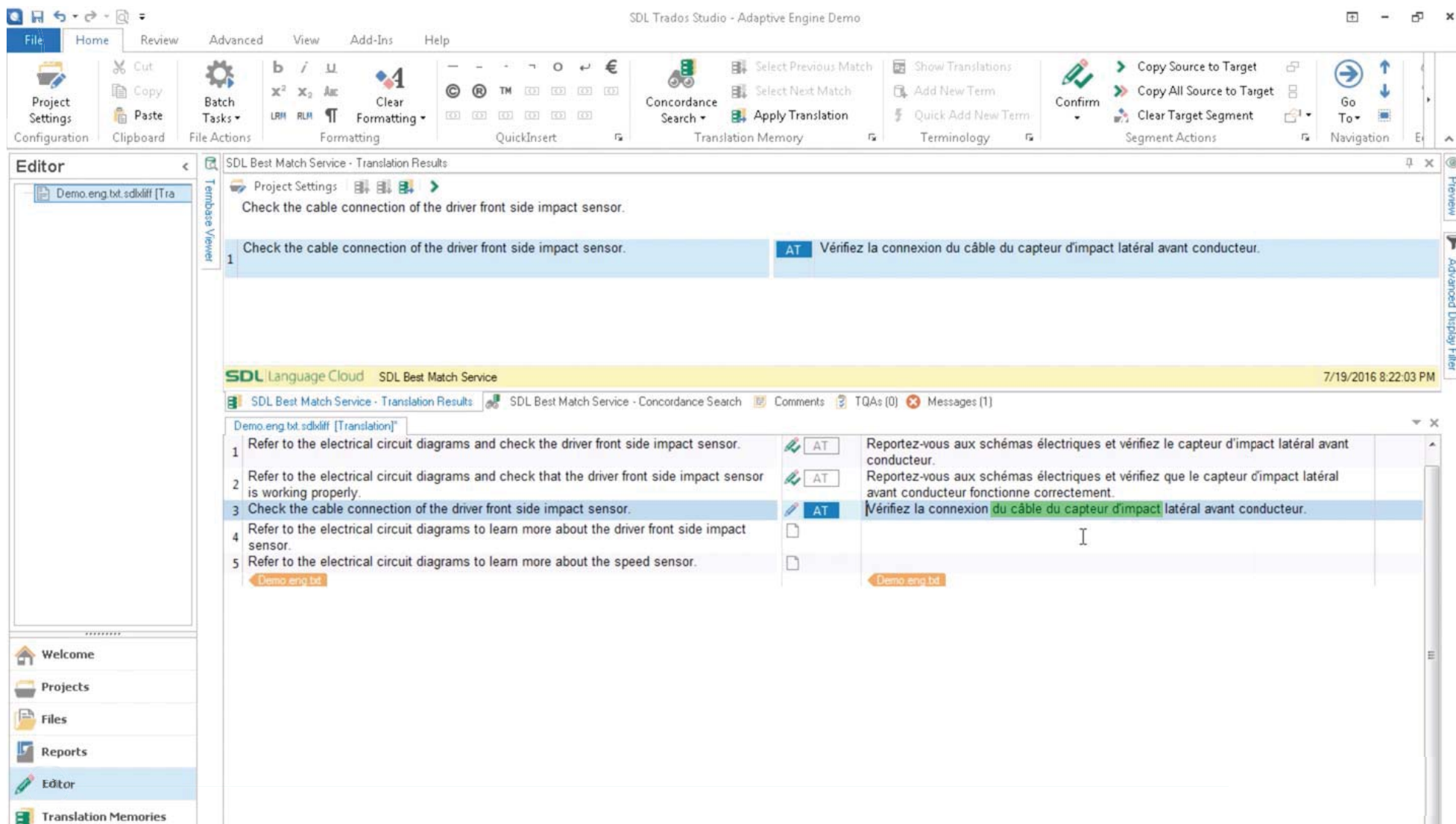


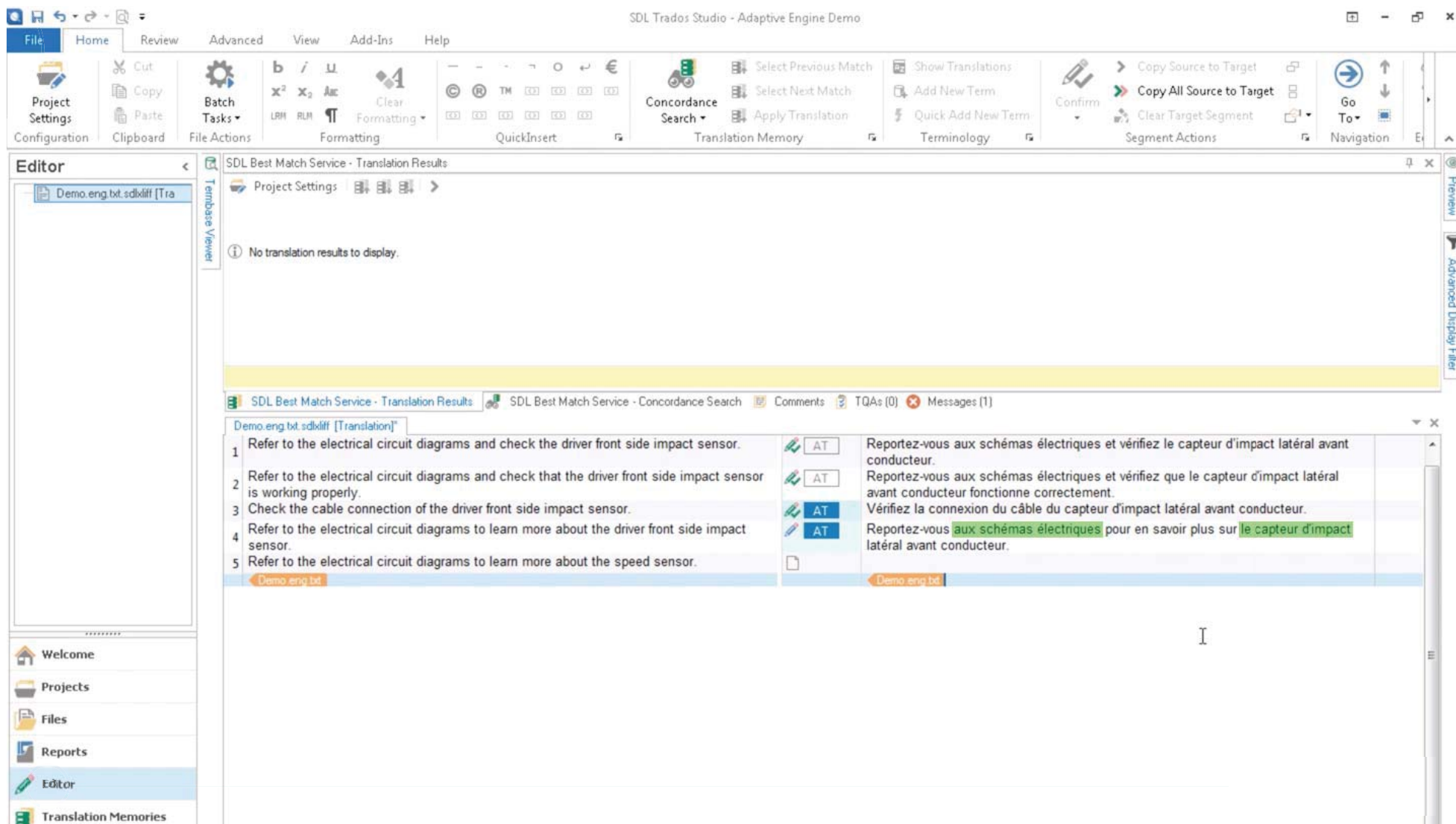


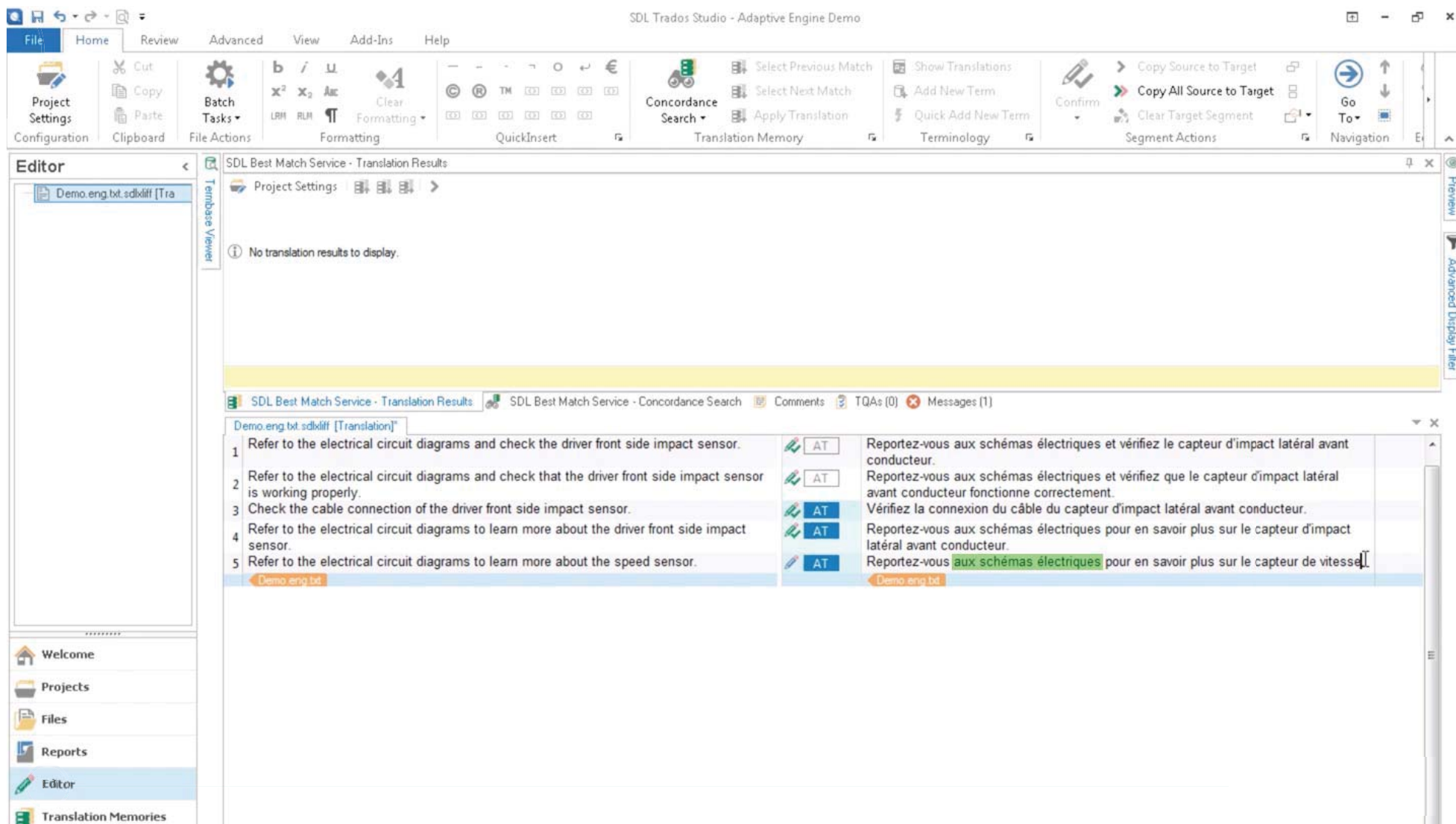












## SDL Adaptive MT

- Learn seamlessly and in real time to adapt to the translation preferences of the users
- Reduce repetitive edits, allowing translation professionals to focus on high-value aspects of the translation process
- Significantly improve translation productivity and translation quality
- Give an unprecedented level of control to users
  
- Available in SDL Trados Studio, via SDL Language Cloud



## Global Customer Experience Management

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