STUDY OF MACHINE TRANSLATED SEGMENT PAIRS

Machine Translation

Have we been using machine translation technology wrong for 60 years?

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Abstract

This report presents a study of 73,150 translated segment pairs that are representative of 31 professional translators' daily translation work. The translations cover 16 unique language pairs with 5 source languages and 13 target languages across 13 different subject domains.

Its purpose is to explore and possibly identify new benchmarks that an individual translator can use to predict his own experience when using a machine translation (MT) system as an assistive translation technology to perform daily work. The study was divided into two evaluations of the 31 sets. One used Google's neural MT (GNMT). The other used a translator-customized statistical MT (CSMT) system from the respective translators.

For each evaluation, an MT system generated target segments from the set's source segments. BLEU and edit-distance (Levenshtein) scores with respect to the reference human translations were calculated. These scores become benchmarks to predict a translator's experiences.

The report analyzes the differences between the GNMT and CSMT benchmarks in the context of the "Promised Land Paradigm" and a new context we call the "Predictive Paradigm." Finally, the report outlines instructions to replicate these benchmarks using Moses SMT and a custom SMT training corpus. Readers can review and independently analyze the raw scores of both sets of 31 evaluations published in the appendix.

Abstract Benchmarks

Averages – 31 Representative Sets	GOOGLE NMT	CUSTOMIZED SMT
BLEU score	40.03	73.27
exact MT match (percent)	5.0%	34.0%

BLEU score – a likeness score (similar to TM fuzzy match) between MT and reference after-the-fact. Higher scores are better and 100 is an *exact MT match*

exact MT match – MT segment exactly matches the reference human translated segment, AKA BLEU score 100 and 0 edit-distance (Levenstein)

Introduction

This report presents our study of 73,150 translated segment pairs from translators who provided a set of segment pairs representing their daily work and approved their inclusion in this report. Their translations cover 16 unique language pairs with 5 source languages and 13 target languages across 13 different subject domains.

A translator's job is a solitary experience. Whether hired as an employee or engaged as independent contractor, a translator works alone and in the moment. His cognitive effort, keystrokes, dictionaries, glossaries, dictation software and other tools, that is, his activities, transform one human language into another. He finds an assistive tool beneficial or detrimental to the degree it contributes to or detract from his work.

Introduction Benchmarks

Averages of 31 Representative Sets	GOOGLE NMT	CUSTOMIZED SMT
words per MT segment	20	20
BLEU score	40.03	73.27
exact MT match (percent)	5.0%	34.0%
words per exact MT match (word count)	7	14
filtered BLEU score (no exact MT matches)	39.10	65.16
character edits per segment (Levenstein)	40	33

BLEU score – a likeness score (similar to TM fuzzy match) between MT and reference after-the-fact. Higher scores are better and 100 is an *exact MT match*
exact MT match – MT segment exactly matches the reference human translated segment, AKA BLEU score 100 and 0 edit-distance (Levenstein)

Machine translation (MT) technology has become a mainstream tool in the translation services market. Unfortunately, machine-translated segments are not created equal. Some are detrimental to a translator's productivity. Therefore, a translator needs benchmarks that can predict, with a high degree of confidence, the likelihood that machine-translated segments from a given system will benefit his daily work productivity.

This study used two well-established quality estimation scores in a unique and innovative paradigm to predict and describe the impact of machine-translated segments as an assistive tool on an individual translator's daily work. The translator can use these benchmarks to maintain or extend his competitive advantage.

Representative Sets

This table breaks down the 31 representative sets that translators provided for this survey.

Breakdown of Representative Sets

representative sets	31
language pairs	16
source languages	5
target languages	13
subject domains	13
total segments evaluated	73,150
average segments per representative sets	2,360
average words per source segment	20
average words per target segment	21
average CSMT corpus size	380,000

These sets have segment pairs that are representative of a translator's daily work. Each translator used Slate Desktop software to randomly selected and removed the pairs were from his/her translation memories. A review does not reveal any evidence of any attempts manipulate to prioritize any kinds of segments.

The Process

We generated MT segments for each representative set using Google's neural MT (GNMT) and customized statistical MT technology (CSMT). Each set grew to a quadruplet of segments: source, human translated references, GNMT translated test and CSMT translated test segments.

We calculated standard BLEU and edit-distance (Levenshtein) scores between the respective translated segments and the translator's translations as references. The other statistics such as exact MT match (percent) are derived from the two standard scores.

Summary of Results

When compared to GNMT, the averages of all 31 sets of the CSMT translated segments:

- generated six times more *exact MT match* translations. ***Significance:*** The translator working with CSMT edit significantly fewer segments;

- generated higher BLEU (likeness) scores. ***Significance:*** The translator spends less time replacing wrong word and fixing word orders because MT segments have more of the translator's words and in the same order, making them more "like" the translator's work;

- generated lower edit-distance (Levenstein) scores. ***Significance:*** The translator makes fewer character-level edits to change the MT output into his desired translation;

- reduced the quantity of the editable work based on all benchmark scores. **Significance:** GNMT improvements over Google's now legacy generic SMT technology do not make it better than CSMT.

In most cases, less work means greater productivity – less the time working and more free time.

Benchmarks Summary

Averages of 31 Representative Sets	GOOGLE NMT	CUSTOMIZED SMT
words per MT segment	20	20
BLEU score	40.03	73.27
exact MT match* (segment count)	136	828
exact MT match (percent)	5.0%	34.0%
words per exact MT match (word count)	7	14
filtered BLEU score (no exact MT matches)	39.10	65.16
segments requiring edit (segment count)	2,235	1,559
character edits per segment (Levenstein)	40	33
total character edits	100,812	58,553

BLEU score – a likeness score (similar to TM fuzzy match) between MT and reference after-the-fact. Higher scores are better and 100 is an *exact MT match*

exact MT match – *MT segment exactly matches the reference human translated segment, AKA BLEU score 100 and 0 edit-distance (Levenstein)*

The Conflict

With Google's reports of improved quality with neural machine translation, why does CSMT consistently score higher than GNMT?

To understand CSMT's 2x to 6x performance improvements over GNMT's benchmarks, we need to understand the traditional MT paradigm. Then we propose a new predictive paradigm as a foundation for using MT as a translator's assistive tool in his daily work.

- *Promised Land Paradigm* – MT technology is designed to generate quality translations.

- *Predictive Paradigm* – MT technology is designed to predict one translator's behavior.

Promised Land Paradigm

The Promised Land Paradigm asserts that the purpose of MT technologies is to generate "high quality" translations indistinguishable from human-generated translations. In this Paradigm, mid- to large-sized companies own most MT systems, set system design requirements and guide most academic research.

When MT technology fails to achieve its purpose, human translators are tasked to use MT post-editing best practices to find and fix the failures. As the Benchmark Summaries table shows, translators in this Paradigm spend their time fixing 95% of the MT output.

We call this the "Promised Land Paradigm" because MT researchers achieved biblical renown with open source licensed software with names like GIZA, Pharaoh and Moses. Each tool was said to be a step closer to the MT Promised Land of "high quality" translations indistinguishable from human-generated translations. In January 2012, the Common Sense Advisory dubed this the Promised Land of MT ([Getting to the Promised Land of Machine Translation](http://www.commonsenseadvisory.com/AbstractView/tabid/74/ArticleID/2208/Title/GettingtothePromisedLandofMachineTranslation/Default.aspx), http://www.commonsenseadvisory.com/AbstractView/tabid/74/ArticleID/2208/Title/GettingtothePromisedLandofMachineTranslation/Default.aspx).

The prophet Moses never reached the Holy Promised Land, but his Israeli followers completed their journey after 40 years wandering in the desert. As of this report, after 60 years wandering in the MT post-editing desert, this Paradigm's followers still have not reached the MT Promised Land, despite repetitive declarations that "it's just 5 years away."

System Requirements

In this Promised Land Paradigm, the requirement for human-quality MT output reigns supreme. MT experts and data scientists create ever-larger MT training corpora, refine corpus cleaning processes and tweak algorithms to improve the quality of MT outputs. Objective quality estimation tools and subjective human reviews, making system development and quality scoring an expensive process.

MT Quality Estimation

Despite decades of research, a reliable, repeatable, objective and accurate method to measure translation quality does not exist. Therefore, this Paradigm has developed a variety of processes to infer quality.

State-of-the-art quality estimation technologies measure the "likeness" between the MT segments and one or more known reference of desirable quality, but these automated measurements are often wrong.

In a more practical approach to quality inference, auditors review translators' productivity and declare the machine translated output was good quality when they can measure productivity improvements and cost savings. The added overhead of audits and other expenses restricted MT technology deployments to large-scale projects.

Accomplishments

Research published in the Promised Land Paradigm consistently reports BLEU scores in the range of 25 to 35 for GNMT as a generic MT system. In September 2016, Google attributed a 10% jump in a 26.3 BLEU score and improved human perception of translation fluidity as the justification to abandon the now-legacy [SMT technology and move to NMT technology](https://slator.com/technology/hyperbolic-experts-weigh-in-on-google-neural-translate/) (https://slator.com/technology/hyperbolic-experts-weigh-in-on-google-neural-translate/).

Google's scores are consistent with the GNMT BLEU score ranges in this report. Furthermore, DeepL reports BLEU scores for its service at this link: https://www.deepl.com/en/quality.html. These scores fall in this report's BLEU score range for GNMT.

The *exact MT match* rates in this report have not been widely used for MT quality estimation. For 10 years before this study, we're aware of only one public report by Memsource, an online computer-assisted translation (CAT) tool service that logs and analyses translators' activities that published *exact MT match* statistics.

In June 2016 before Google and Microsoft moved to NMT technologies, the Memsource article, [Data: Machine and Professional Human Translations Identical in 5 – 20% Cases](https://www.memsource.com/blog/2016/06/28/machine-vs-human-translation/) (https://www.memsource.com/blog/2016/06/28/machine-vs-human-translation/) published a graphic showing that translators who their online CAT service with Google Translate or Microsoft Translator did not edit 3% to 10% of the MT segments in 23 of 25 language pairs. The article referred to this as "mt.match100".

Machine translation leverage by language pair
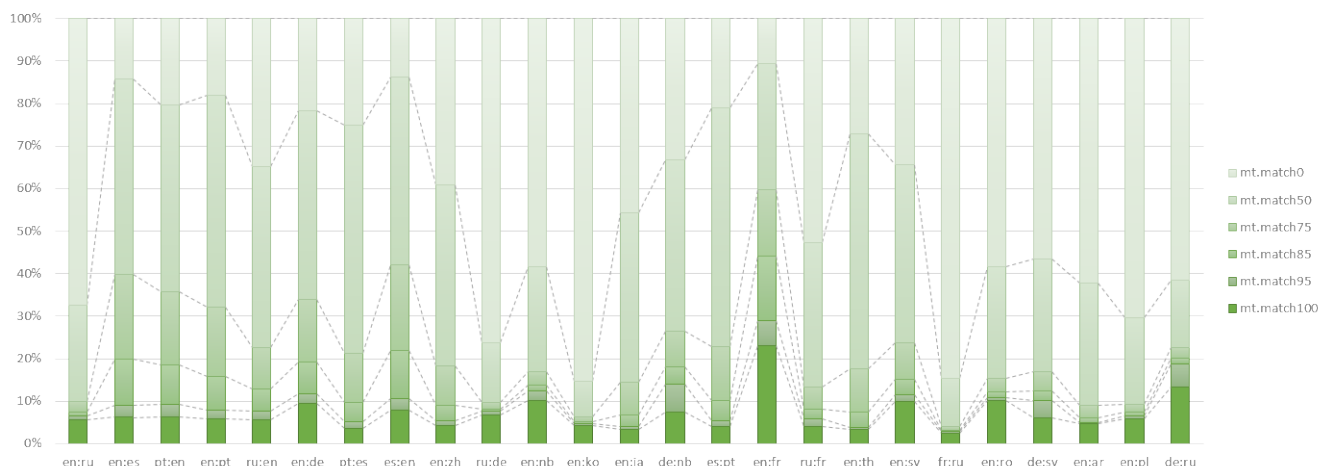
Memsource's percentages strongly coincide with this report's *exact MT match* range of 1.8% to 11.2% for GNMT.

In summary, with 60 years of research and development and the evolution of MT technologies from rules-based to statistical to neural, a translator who uses an MT technology designed with the requirement to generate human-quality MT output will reliably receive 5 human-quality MT segments out of 100, and then spend his time editing the remaining 95.

Predictive Paradigm

This report defines the "Predictive Paradigm" as a new set of postulates with the goal to create the maximum number of predictable machine translated segments that match one translator's work. This paradigm specifically abandons all "quality" requirements in system design and function.

Predictive analytics uses historical events and outcomes to build predictive models that forecast the most likely outcomes for unknown future events. Your local weather forecast is a good example to demonstrate predictive analytics of the Predictive Paradigm.

Meteorological sensors log weather events (temperature, barometric pressure, wind speed, direction, etc) and outcomes (sunshine, clouds, rain, snow, etc). Over time, meteorologists analyze the logs to discover what outcomes follow which events. With a sufficiently large collection of logged events and outcomes, they create predictive models that forecast (predict) tomorrow's 35% chance of rain, based on today's temperature and winds.

Similar predictive models are at the heart of modern MT technologies. The source-target segments in translation memories (TMs) become the historical events and outcomes. Events are source language word sequences (weather's temperature, pressure, etc). Outcomes are target language word sequences (weather's rain, snow, sunshine, etc).

Your CAT tool logs the events and outcomes in your translation memory. With a sufficiently large collection of logged events and outcomes, an MT predictive model can forecast your most likely target language word sequence based on a source language word sequence.

Since predictive models are at the heart of both GNMT and CSMT, there's an obvious elephant in the room. Why does CSMT forecast six times more *exact MT matches* than GNMT? Why are CSMT's BLEU scores double and Levenstein scores half of GNMT's?

For an answer to both questions, let's take a closer look at our weather forecasting example. A meteorologist forecasts Chicago's weather using a predictive model created from events and outcomes that occur in and around Chicago. Adding events and outcomes from Tokyo, London, Montevideo, and other cities around the globe will degrade the Chicago forecast.

Similarly, CSMT creates predictive models with source-target segments from one translator. GNMT creates predictive models with source-target segments from countless translators spanning untold subjects and industries, thus degrading one translator's forecast.

System Requirements

Creating ever-higher translation quality is not a requirement in this Paradigm. The requirement is to accurately predict one translator's work. This dictates different technologies and best practices. Therefore, it uses training corpora that represent that translator's past work.

These smaller collections of segment pairs do not require the massive computing power necessary to support GNMT. Therefore, the system requirements are simpler, smaller and more exacting.

MT Quality Estimation

In the Predictive Paradigm, MT quality estimation is out-of-scope and therefore undefined. A human translator's actions defines quality. That is, their translated segments paired with the respective source segments, as logged in a translation memories become a record of a translator's actions and therefore the example of the desired quality.

With these distinct postulates, we can measure the likely impact of an MT system on a translator's daily work by measuring the likeness between the system's segments and the translator's actual work.

Given a representative sample of the translator's historical work, we can compare its likeness to the output from an MT system and predict unknown future behaviors (work) with a high degree of confidence.

Accomplishments

This report is the first survey to conceive, explore and test the Predictive Paradigm. Therefore, the results and scores reported herein are the first demonstration of this Paradigm.

Our customers approved our publication of their scores, but not their full representative sets nor their CSMT engines that created the CSMT segments. Therefore, we have included the section "How to Replicate the Evaluation Processes Independently" so other researchers, companies and individuals can begin the work to replicate and validate our results.

That said, the results published herein are promising. Our customers privately share that they enjoy benefits with their CSMT system (Slate Desktop). Some provided testimonials that we publish on our website https://www.slate.rocks/testimonial/. Their testimonials predate the conception of the Predictive Paradigm. Therefore, they do not use many of the terms this report.

Expanded Benchmark Summary Tables

The *Benchmarks Summary* table above shows only benchmark averages. The following five tables expand the details to include minimums and maximums, in a variety of layouts.

GOOGLE – NMT Summary	Minimum	Average	Maximum
words per MT segment	11	**20**	32
BLEU score	16.35	**41.60**	56.31
exact MT match (count)	42	**136**	267
exact MT match (percent)	1.8%	**5.0%**	11.2%
words per exact MT match (count)	3	**7**	12
filtered BLEU score (no exact MT matches)	16.07	**41.02**	56.07
segments requiring edit (count)	1,158	**2,235**	3,250
character edits per segment	16	**40**	63
total character edits		**100,812**	

CUSTOMIZED – SMT Summary	Minimum	Average	Maximum
words per MT segment	11	**20**	33
BLEU score	55.37	**73.27**	83.37
exact MT match (count)	383	**828**	1,289
exact MT match (percent)	20.0%	**34.0%**	53.7%
words per exact MT match (count)	7	**14**	25
filtered BLEU score (no exact MT matches)	47.87	**65.16**	77.49
segments requiring edit (count)	771	**1,559**	2,249
character edits per segment	19	**33**	47
total character edits		**58,553**	

Averages Summary	GOOGLE – NMT	CUSTOMIZED – SMT
words per MT segment	20	20
BLEU score	40.03	73.27
exact MT match (count)	136	828
exact MT match (percent)	5%	34.0%
words per exact MT match (count)	7	14
filtered BLEU score (no exact MT matches)	39.10	65.16
segments requiring edit (count)	2,235	1,559
character edits per segment	40	33
total character edits	100,812	58,553

Minimums Summary	GOOGLE – NMT	CUSTOMIZED – SMT
words per MT segment	11	11
BLEU score	16.35	55.37
exact MT match (count)	42	383
exact MT match (percent)	1.8%	20.0%
words per exact MT match (count)	3	7
filtered BLEU score (no exact MT matches)	16.07	47.87
segments requiring edit (count)	1,158	771
character edits per segment	16	19

Maximums Summary	GOOGLE – NMT	CUSTOMIZED – SMT
words per MT segment	32	33
BLEU score	56.31	83.37
exact MT match (count)	267	1,289
exact MT match (percent)	11.2%	53.7%
words per exact MT match (count)	12	25
filtered BLEU score (no exact MT matches)	56.07	77.49
segments requiring edit (count)	3,250	2,249
character edits per segment	63	47

Conclusion

This report presents a study of 73,150 translated segment pairs that are representative of 31 professional translators' daily translation work. The translations cover 16 unique language pairs with 5 source languages and 13 target languages across 13 different subject domains.

The study set out to explore and possibly find benchmarks that an individual translator can use to predict his experience using an MT system as an assistive translation technology to perform daily work. It generated BLEU and edit-distance (Levenshtein) scores with Google NMT and customized SMT for 31 representative sets of segment pairs provided by Slate Desktop customers who made their own customized SMT system. The GNMT scores were consistent to scores from other research.

Comparing the GNMT and CSMT benchmark ranges in the Expanded Benchmark Summary Tables, we see that CSMT consistently scores better than GNMT for all language pairs and subjects. CSMT creates 5 to 10 times more exactly MT match segments than GNMT. We also see that CSMT creates MT segments significantly more like those of the translator than GNMT as measured with BLEU and edit-distance (Levenshtein) scores.

The report abandoned the longstanding "Promised Land Paradigm" and proposes the "Predictive Paradigm." By creating benchmarks for a given MT system using test sets that represent a translator's daily work (i.e. representative sets), the benchmarks become a predictor of a translator's likely future experiences with that MT system with a high degree of confidence.

We have identified three weaknesses in the proposed Predictive Paradigm. There are likely more. We hope others will pursue with more research in this area.

1. Likeness to a translator's works, in itself, is not quality. It is possible to score high likeness scores to a translator's poor work.

2. "Better than Google" (or other MT system) does not, in itself, ensure quality. After all, twice as good as zero is still zero.

3. "Likeness" is assumed to mean "less work" for translators, but how often does that result in higher productivity?

How to Replicate the Evaluation Processes Independently

This section outlines instructions for anyone to generated new benchmarks with new data.

Customized SMT (CSMT) benchmarks (based on **Moses Baseline**)

1. Prepare a parallel corpus of source-target pairs with translations from one only translator.

    1. The pairs should be a balanced mix representing the translator's daily work.

    2. Minimize the number of terminology and glossary segments.

    3. Remove duplicate source-target pairs.

    4. Net total should be 80,000 to 100,000 pairs after removals.

    5. Alternately, use pairs from highly specialized subject domain of 150,000 pairs net.

2. Copy the target half of the parallel corpus to use as the language model corpus.

3. Randomly select and remove 2,350 pairs from the parallel corpus. This is representative sets (in Moses terminology, dev or tuning set) has a confidence level of 95% with a confidence interval of ±2%

4. Train and tune an SMT model using the resources created in steps 1, 2 and 3

5. Retrieve the Moses output and moses.ini file from the final tuning run.

    1. Take note of the final BLEU score generated in the final tuning run.

    2. Calculate the "filtered" BLEU score using the Moses output and reference tuning files after removing the exact MT match segments.

    3. Calculate the edit-distance (Levenshtein) score using the filtered Moses output.

Google NMT (GNMT) or other online MT system

1. Copy the Moses representative sets (line 3 above)

2. Translate all 2,350 source segments through GNMT (or other online MT system)

3. Calculate the BLEU score between the GNMT output and reference segments.

4. Calculate the "filtered" BLEU score using the GNMT output and reference tuning files after removing the exact MT match segments.

5. Calculate the edit-distance (Levenshtein) score using the filtered GNMT output.

APPENDIX I: Languages and subjects
Lists of languages and subjects for the 31 representative sets.

Language Pairs
1. de-bg
2. de-en
3. en-ar
4. en-cs
5. en-de
6. en-es
7. en-fr
8. en-ga
9. en-hr
10. en-it
11. en-nl
12. en-pl
13. en-ru
14. es-en
15. fr-en
16. sv-en

Source Languages
1. de
2. en
3. es
4. fr
5. sv

Target Languages
1. ar
2. bg
3. cs
4. de
5. en
6. es
7. fr
8. ga
9. hr
10. it
11. nl
12. pl
13. ru

Subject Domains
1. automotive
2. business
3. consumer-goods
4. contract
5. finance
6. insurance
7. it-security
8. it-software
9. legislation
10. medical
11. patents
12. regulatory
13. securities

APPENDIX II: 31 Representative Set Benchmarks

Each of the following 31 representative set benchmark tables includes six example segment pairs because they highlight the best performance for each technology.

1. the three longest *exact MT match* segments created by GNMT

2. the three longest *exact MT match* segments created by CSMT

Some words in the pairs have been replace with letters and/or numbers to remove identifying information.

Benchmarks – Representative Set 1

source	en
target	ru
subject domain	patents
estimated corpus size	70,000
segments per representative set	2,326
words per source segment	33
words per target segment	31
GOOGLE – NMT	
words per MT segment	30
BLEU score	45.12
exact MT match (count)	77
exact MT match (percent)	3.3%
words per exact MT match (count)	10
filtered BLEU score (no exact MT matches)	44.6
segments requiring edit (count)	2,249
character edits per segment	56
total character edits	125,944
CUSTOMIZED – SMT	
words per MT segment	31
BLEU score	83.37
exact MT match (count)	748
exact MT match (percent)	32.2%
words per exact MT match (count)	25
filtered BLEU score (no exact MT matches)	77.49
segments requiring edit (count)	1,578
character edits per segment	29
total character edits	45,762

Benchmarks – Representative Set 1 (en-ru)

GNMT – exact MT matches

en	Further details and examples of suitable molecular sieves and dewaxing conditions are for example described in WO-A-9718278, US-A-4343692, US-A-5053373, US-A-5252527 and US-A-4574043.
ru	Дополнительные подробности и примеры подходящих молекулярных сит и условий депарафинизации описаны, например, в WO-A-9718278, US-A-4343692, US-A-5053373, US-A-5252527 и US-A-4574043.
en	It contains 1.7% nitrogen, 24.5% methane, 43.7% ethane, 13.7% propane, and 17.1% isopentane.
ru	Он содержит 1,7% азота, 24,5% метана, 43,7% этана, 13,7% пропана и 17,1% изопентана.
en	Suitable catalysts for step (d) are catalysts comprising copper and zinc, or copper, zinc and manganese, or cobalt, or cobalt and manganese.
ru	Подходящими катализаторами для стадии (d) являются катализаторы, содержащие медь и цинк, или медь, цинк и марганец, или кобальт, или кобальт и марганец.

CSMT – exact MT matches

en	According to an embodiment, the PEF treated composition of the invention comprises lactoferrin, IgA, IgG, TGF-β1, and TGF-β2 in native form in amounts corresponding to at least 50% of lactoferrin, at least 30% of IgA, at least 50% IgG, at least 50% of TGF-β1, and at least 50% of TGF-β2 in native form, with respect to the total amount of the respective protein in the composition.
ru	В соответствии с вариантом осуществления PEF- обработанная композиция изобретения содержит лактоферрин, IgA, IgG, TGF-β1 и TGF-β2 в нативной форме в количествах, соответствующих по меньшей мере 50% лактоферрина, по меньшей мере 30% IgA, по меньшей мере 50% IgG, по меньшей мере 50% TGF-β1, и по меньшей мере 50% TGF-β2 в нативной форме относительно общего содержания соответствующего белка в композиции.
en	The viscosity of an aqueous polymer mixture, however, may be changed upon introduction of the mixture into an oil-bearing formation as a result of ion exchange, particularly divalent ion exchange, between the aqueous polymer mixture, the rock (minerals and clays) of the formation, and formation water due to differences in ion concentration, particularly divalent cation concentration, between the aqueous polymer mixture, the rock of the formation, and the formation water.

ru	Вязкость водной полимерной смеси, однако, может изменяться после введения смеси в нефтеносный пласт в результате ионного обмена, в частности обмена двухвалентных ионов между водной полимерной смесью, породой (минералами и глинами) пласта и пластовой водой из-за различий в концентрациях ионов, в частности, в концентрациях двухвалентных катионов между водной полимерной смесью, породой пласта и пластовой водой.
en	A cyclohexanone plant, consisting of an uncatalysed cyclohexane oxidation reaction section, a cooling unit, a decomposition section, a cyclohexane recovery section, and a cyclohexanone purification section, as described above with reference to Figure 1 , directly after cleaning of the whole plant including the reboiler of the first distillation column in the cyclohexane recovery section, is operated at an hourly mass flow of the decomposed reaction mixture leaving the decomposition section of 500 metric tons.
ru	Установка циклогексанона, состоящая из секции некатализируемой реакции окисления циклогексана, охлаждающего устройства, секции разложения, секции получения циклогексана и секции очистки циклогексанона, как описано выше со ссылкой на фиг.1, непосредственно после очистки всей установки, в том числе ребойлера первой ректификационной колонны в секции получения циклогексана, эксплуатировалась при часовом массовом расходе разложенной реакционной смеси, покидающей секцию разложения, 500 метрических тонн.

Benchmarks – Representative Set 2

source	de
target	en
subject domain	patents
estimated corpus size	100,000
segments per representative set	2,348
words per source segment	27
words per target segment	26
GOOGLE – NMT	
words per MT segment	26
BLEU score	56.31
exact MT match (count)	152
exact MT match (percent)	6.5%
words per exact MT match (count)	5
filtered BLEU score (no exact MT matches)	56.07
segments requiring edit (count)	2,196
character edits per segment	41
total character edits	90,036
CUSTOMIZED – SMT	
words per MT segment	26
BLEU score	79.38
exact MT match (count)	562
exact MT match (percent)	23.9%
words per exact MT match (count)	16
filtered BLEU score (no exact MT matches)	76.31
segments requiring edit (count)	1,786
character edits per segment	39
total character edits	69,654

Benchmarks – Representative Set 2 (de-en)	
GNMT – exact MT matches	
de	eine erste Flüssigkeitspumpe (9), die dem geschlossenen Mikrokanal (2) über die zumindest eine Zuleitung (6, 6a) eine Probenflüssigkeit (7) zuführt.
en	a first liquid pump (9) which supplies a sample liquid (7) to the closed microchannel (2) via the at least one feed line (6, 6a).
de	Der Endlosträger erreicht die Personalisierungseinrichtung 40 an einer Eintrittsposition 41 und verlässt die Personalisierungseinrichtung 40 an einer Austrittsposition 42.
en	The endless carrier reaches the personalization device 40 at an entry position 41 and leaves the personalization device 40 at an exit position 42.
de	Das Auftreten einer solchen Spannungsschwankung („Dip") kann detektiert und als Steuersignal zum Ausschalten des Senders des nicht intelligenten Gerätes 4 eingesetzt werden.
en	The occurrence of such a voltage fluctuation ("dip") can be detected and used as a control signal for switching off the transmitter of the non-intelligent device 4.
CSMT – exact MT matches	
de	Daher hat die einstückige Einheit bzw. das einzige Element vorzugsweise eine Fläche von maximal 800 cm2, mehr bevorzugt von maximal 600 cm2, mehr bevorzugt von maximal 400 cm2, mehr bevorzugt von maximal 200 cm2, mehr bevorzugt von maximal 100 cm2, mehr bevorzugt von maximal 50 cm2.
en	Hence, the one-pieced unit or single element preferably has an area of at most 800 cm², more preferably of at most 600 cm², more preferably of at most 400 cm², more preferably of at most 200 cm², more preferably of at most 100 cm², more preferably of at most 50 cm².
de	Sicherheitspapier oder Wertdokument nach Anspruch 26 oder 27, dadurch gekennzeichnet, dass die räumlich strukturierte Beschichtung (22; 34, 36) des Sicherheitselements (12; 30) im Wesentlichen dasselbe optische Erscheinungsbild aufweist wie das Papiersubstrat, in das das Sicherheitselement (12; 30) eingebettet ist.
en	The security paper or value document according to claim 26 or 27, characterized in that the three-dimensionally structured coating (22; 34, 36) of the security element (12; 30) has substantially the same optical appearance as the paper substrate in which the security element (12; 30) is embedded.
de	Sie verfügt über eine Zuführeinrichtung 14 zur Zuführung von Wertdokumenten, eine Ausgabeeinrichtung 16 zur Aufnahme bearbeiteter, d.h. sortierter Wertdokumente, und eine Transporteinrichtung 18 zum Transportieren von vereinzelten Wertdokumenten von der Zuführeinrichtung 14 zu der Ausgabeeinrichtung 16.

| en | It has a feeding device 14 for feeding value documents, an output device 16 for receiving processed, i.e. sorted, value documents, and a transport device 18 for transporting singled value documents from the feeding device 14 to the output device 16. |

Benchmarks – Representative Set 3

source	en
target	ga
subject domain	legislation
estimated corpus size	1,500,000
segments per representative set	2,397
words per source segment	29
words per target segment	31
GOOGLE – NMT	
words per MT segment	29
BLEU score	53.3
exact MT match (count)	128
exact MT match (percent)	5.3%
words per exact MT match (count)	7
filtered BLEU score (no exact MT matches)	52.79
segments requiring edit (count)	2,269
character edits per segment	45
total character edits	102,105
CUSTOMIZED – SMT	
words per MT segment	30
BLEU score	78.81
exact MT match (count)	735
exact MT match (percent)	30.7%
words per exact MT match (count)	18
filtered BLEU score (no exact MT matches)	74.47
segments requiring edit (count)	1,662
character edits per segment	42
total character edits	69,804

https://www.slate.rocks/

Benchmarks – Representative Set 3 (en-ga)	
GNMT – exact MT matches	
en	Amendment of Part 8 (annual payments, charges and interest) of Principal Act.
ga	Leasú ar Chuid 8 (íocaíochtaí bliantúla, muirir agus ús) den Phríomh-Acht.
en	(h) by the substitution of the following section for section 22
ga	(h) tríd an alt seo a leanas a chur in ionad alt 22
en	(b) in subsection (7)
ga	(b) i bhfo-alt (7)
CSMT – exact MT matches	
en	42.—(1) A company shall not be formed and registered under the Companies Acts, 1963 to 1999, after the commencement of this section, unless it appears to the registrar of companies that the company, when registered, will carry on an activity in the State, being an activity that is mentioned in its memorandum.
ga	42.—(1) Ní dhéanfar cuideachta a fhoirmiú agus a chlárú faoi Achtanna na gCuideachtaí, 1963 go 1999, tar éis thosach feidhme an ailt seo, mura rud é gur dealraitheach do chláraitheoir na gcuideachtaí go ndéanfaidh an chuideachta, ar í a chlárú, gníomhaíocht a sheoladh sa Stát, ar gníomhaíocht í a luaitear ina meabhrán.
en	(b) in a company that has control of a service company, where the company is under the control of a person or persons referred to in subparagraph (2)(a)(i) as it applies to a service company.
ga	(b) i gcuideachta a bhfuil rialú aici ar chuideachta sheirbhíse, i gcás go bhfuil an chuideachta faoi rialú duine nó daoine dá dtagraítear i bhfomhír (2)(a)(i) mar atá feidhm aici maidir le cuideachta sheirbhíse.
en	(a) Number of persons actually at work or on holidays or on sick leave with pay during the pay week ended 15 September, 1979 or nearest representative date, distinguishing the following categories and showing numbers of males and females separately
ga	(a) An líon daoine a bhí iarbhír ag obair nó ar laethanta saoire nó ar saoire bhreoiteachta ar a bpá i rith na seachtaine pá dár chríoch 15 Meán Fómhair, 1979, nó an dáta ionadaitheach is gaire dó sin, ag idirdhealú idir na haicmí seo a leanas agus ag taispeáint líon na bhfireannach agus na mbaineannach ar leithligh

Benchmarks – Representative Set 4

source	en
target	fr
subject domain	legislation
estimated corpus size	350,000
segments per representative set	2,386
words per source segment	28
words per target segment	34
GOOGLE – NMT	
words per MT segment	32
BLEU score	54.3
exact MT match (count)	176
exact MT match (percent)	7.4%
words per exact MT match (count)	12
filtered BLEU score (no exact MT matches)	53.1
segments requiring edit (count)	2,210
character edits per segment	52
total character edits	114,920
CUSTOMIZED – SMT	
words per MT segment	33
BLEU score	79.09
exact MT match (count)	770
exact MT match (percent)	32.3%
words per exact MT match (count)	21
filtered BLEU score (no exact MT matches)	73.94
segments requiring edit (count)	1,616
character edits per segment	43
total character edits	69,488

Benchmarks – Representative Set 4 (en-fr)	
GNMT – exact MT matches	
en	The notified body shall inform the other notified bodies of quality system approvals which it has refused, suspended, withdrawn or otherwise restricted, and, upon request, of such quality system approvals which it has issued.
fr	L'organisme notifié informe les autres organismes notifiés des approbations de systèmes de qualité qu'il a refusées, suspendues, retirées ou soumises à d'autres restrictions et, sur demande, des approbations de systèmes de qualité qu'il a délivrées.
en	Where the Commission does not reject a decision notified in accordance with the second subparagraph of paragraph 1 of this Article, the invasive alien species shall be subject to the management measures referred to in Article 19.
fr	Lorsque la Commission ne rejette pas une décision notifiée conformément au paragraphe 1, deuxième alinéa, du présent article, l'espèce exotique envahissante est soumise aux mesures de gestion visées à l'article 19.
en	Where the type meets the applicable essential health and safety requirements, the notified body shall issue an EU type-examination certificate to the manufacturer.
fr	Lorsque le type satisfait aux exigences essentielles de santé et de sécurité applicables, l'organisme notifié délivre au fabricant une attestation d'examen UE de type.
CSMT – exact MT matches	
en	The Public Company Accounting Oversight Board of the United States of America and the Securities and Exchange Commission of the United States of America meet requirements which shall be considered adequate within the meaning of Article 47(1)(c) of Directive 2006/43/EC for the purpose of transfers of audit working papers or other documents and of inspection and investigation reports under Article 47(1) of Directive 2006/43/EC.
fr	Le Public Company Accounting Oversight Board des États-Unis d'Amérique et la Securities and Exchange Commission des États-Unis d'Amérique répondent aux critères qui sont considérés comme adéquats au sens de l'article 47, paragraphe 1, point c), de la directive 2006/43/CE aux fins de la communication de documents d'audit ou d'autres documents et de rapports d'inspection et d'enquête prévue à l'article 47, paragraphe 1, de la directive 2006/43/CE.
en	Since, in the judgments referred to in recital (12) above, the Court only found an illegality with regards to the determination of the applicable duty rate, and not with regards to the imposition of the measures themselves (that is, with regards to the finding of dumping, injury and Union interest), the exporting producers concerned could not have legitimately expected that no definitive anti-dumping measures would be imposed.

fr	Étant donné que, dans les arrêts visés au considérant 12 ci-dessus, la Cour a relevé une illégalité en ce qui concerne uniquement la détermination du taux de droit applicable, et non l'institution des mesures proprement dites (c'est-à-dire la conclusion relative au dumping, au préjudice et à l'intérêt de l'Union), les producteurs-exportateurs concernés ne pouvaient pas légitimement s'attendre à ce qu'aucune mesure antidumping définitive ne soit instituée.
en	Given that the risk of spreading scrapie via male ovine and caprine animals kept at semen collection centres approved and supervised in accordance with the conditions set out in Annex D to Council Directive 92/65/EEC [8] is limited, it is appropriate to establish specific conditions for semen collection centres in Section A of Chapter A of Annex VIII to Regulation (EC) No 999/2001.
fr	Étant donné que le risque de propagation de la tremblante par des ovins et caprins mâles détenus dans des centres de collecte de sperme agréés et surveillés conformément aux conditions énoncées à l'annexe D de la directive 92/65/CEE du Conseil [8] est limité, il convient de fixer des conditions spécifiques pour les centres de collecte de sperme à l'annexe VIII, chapitre A, partie A, du règlement (CE) no 999/2001.

Benchmarks – Representative Set 5

source	en
target	hr
subject domain	legislation
estimated corpus size	140,000
segments per representative set	2,361
words per source segment	26
words per target segment	24
GOOGLE – NMT	
words per MT segment	23
BLEU score	39.11
exact MT match (count)	118
exact MT match (percent)	5.0%
words per exact MT match (count)	5
filtered BLEU score (no exact MT matches)	38.64
segments requiring edit (count)	2,243
character edits per segment	49
total character edits	109,907
CUSTOMIZED – SMT	
words per MT segment	24
BLEU score	77.22
exact MT match (count)	763
exact MT match (percent)	32.3%
words per exact MT match (count)	15
filtered BLEU score (no exact MT matches)	71.83
segments requiring edit (count)	1,598
character edits per segment	32
total character edits	51,136

Benchmarks – Representative Set 5 (en-hr)

GNMT – exact MT matches

en	In the event of mobility between Member States, Regulation (EU) No 1231/2010 of the European Parliament and of the Council [14] applies.
hr	U slučaju mobilnosti između država članica primjenjuje se Uredba (EU) br. 1231/2010 Europskog parlamenta i Vijeća [14].
en	If either Party considers that the other Party has failed to fulfil an obligation under this Agreement, it may take appropriate measures.
hr	Ako jedna od stranaka smatra da druga stranka nije ispunila obvezu prema ovom Sporazumu, može poduzeti odgovarajuće mjere.
en	Furthermore, diseases and species that are important today may be marginalised in the future.
hr	Nadalje, bolesti i vrste koje su danas važne mogu biti marginalizirane u budućnosti.

CSMT – exact MT matches

en	Where, on completion of the procedure set out in Article 40(3) and (4), objections are raised against a measure taken by a Member State, or where the Commission considers a national measure to be contrary to Union legislation, the Commission shall without delay enter into consultation with the Member States and the relevant economic operator or operators and shall evaluate the national measure.
hr	Ako se nakon završetka postupka iz članka 40. stavaka 3. i 4. podnesu prigovori na mjeru koju je poduzela država članica ili ako Komisija smatra da je nacionalna mjera u suprotnosti sa zakonodavstvom Unije, Komisija bez odgode započinje savjetovanje s državama članicama i relevantnim gospodarskim subjektom ili subjektima te ocjenjuje nacionalnu mjeru.
en	Value according to Article 418 of the CRR — transferable assets representing claims on or guaranteed by: the central government of a Member State, a region with fiscal autonomy to raise and collect taxes, or of a third country in the domestic currency of the central or regional government, if the institution incurs a liquidity risk in that Member State or third country that it covers by holding those liquid assets
hr	Vrijednost u skladu s člankom 418. CRR-a – prenosiva imovina koja predstavlja potraživanja od ili za koju jamče: središnja država države članice, regije s fiskalnom autonomijom koje uvode i ubiru poreze ili treće države u domaćoj valuti središnje države ili jedinice područne (regionalne) samouprave, ako je institucija izložena likvidnosnom riziku u toj državi članici ili trećoj zemlji koji pokriva držanjem navedene likvidne imovine

en	The regulatory authority may decide that transmission-connected demand facilities, transmission-connected distribution facilities, distribution systems and demand units for which a request for a derogation has been filed pursuant to Articles 52 or 53 do not need to comply with the requirements of this Regulation from which a derogation has been sought from the day of filing the request until the regulatory authority's decision is issued.
hr	Regulatorno tijelo može odlučiti da postrojenja kupca priključena na prijenosni sustav, distribucijska postrojenja priključena na prijenosni sustav, distribucijski sustavi i elementi postrojenja kupca za koje je podnesen zahtjev za odstupanje u skladu s člankom 52. ili 53. ne trebaju biti u skladu sa zahtjevima iz ove Uredbe od kojih se traži odstupanje od dana podnošenja zahtjeva do izdavanja odluke regulatornog tijela.

Benchmarks – Representative Set 6

source	en
target	it
subject domain	it-software
estimated corpus size	50,000
segments per representative set	2,292
words per source segment	15
words per target segment	16
GOOGLE – NMT	
words per MT segment	16
BLEU score	41.19
exact MT match (count)	107
exact MT match (percent)	4.7%
words per exact MT match (count)	6
filtered BLEU score (no exact MT matches)	40.24
segments requiring edit (count)	2,185
character edits per segment	28
total character edits	61,180
CUSTOMIZED – SMT	
words per MT segment	16
BLEU score	81.35
exact MT match (count)	1,193
exact MT match (percent)	52.1%
words per exact MT match (count)	11
filtered BLEU score (no exact MT matches)	70.99
segments requiring edit (count)	1,099
character edits per segment	22
total character edits	24,178

Benchmarks – Representative Set 6 (en-it)	
GNMT – exact MT matches	
en	The results contain reflective objects and have been rendered with reflection depths of 2, 4 and 8
it	I risultati contengono oggetti riflettenti e sono stati renderizzati con profondità di riflessione di 2, 4 e 8
en	The only editable data here are the six fields at the top of the dialog box.
it	Gli unici dati modificabili qui sono i sei campi nella parte superiore della finestra di dialogo.
en	If needed, you can redefine the direction of this cursor projection.
it	Si consiglia di duplicare il traduttore predefinito prima di modificarlo.
CSMT – exact MT matches	
en	In Edit mode, each member (Scheme, Frame, Panel, Accessory, Junction) has its own Dialog box and its own Tool, enabling you to change settings and place new Members in this Curtain Wall.
it	In modalità Edita, ciascun elemento (Schema, Profilo, Pannello, Accessorio, Giunto) ha la sua propria finestra di dialogo e il suo Strumento, cosa che permette di cambiare le impostazioni e posizionare nuovi Elementi in questo Curtain Wall.
en	In case of a slanted wall, however, you might prefer a more realistic display of the cut door/window: choose either Projected or Projected with Overhead to see all parts of the window in a slanted wall.
it	Nel caso dei muri inclinati invece si può preferire una visualizzazione più realistica delle porte/finestre sezionate: scegliere Proiettato o Proiettato con parte superiore per vedere tutte le parti delle finestre nei muri inclinati.
en	Note that if you drag a Master Layout onto a Subset in Layout Settings, the automatic reservation (if available) will reserve every sub-element in that Subset (all Layouts and all Drawings).
it	Notare che se si trascina un Layout Master su un Sottoinsieme in Impostazioni Layout, la riserva automatica (se disponibile) riserverà tutti i sottoelementi in tale Sottoinsieme (tutti i layout e tutti i disegni).

Benchmarks – Representative Set 7

source	es
target	en
subject domain	it-security
estimated corpus size	80,000
segments per representative set	2,336
words per source segment	20
words per target segment	18
GOOGLE – NMT	
words per MT segment	19
BLEU score	49.23
exact MT match (count)	198
exact MT match (percent)	8.5%
words per exact MT match (count)	8
filtered BLEU score (no exact MT matches)	47.68
segments requiring edit (count)	2,138
character edits per segment	33
total character edits	70,554
CUSTOMIZED – SMT	
words per MT segment	18
BLEU score	82.11
exact MT match (count)	1,211
exact MT match (percent)	51.8%
words per exact MT match (count)	14
filtered BLEU score (no exact MT matches)	70.58
segments requiring edit (count)	1,125
character edits per segment	27
total character edits	30,375

Benchmarks – Representative Set 7 (es-en)	
GNMT – exact MT matches	
es	En la configuración del proveedor de identidad, configure el dominio de identidad y, opcionalmente, el identificador corto del proveedor de identidad.
en	In the configuration of the identity provider, configure the identity domain and, optionally, the short identifier of the identity provider.
es	Registre las entidades de confianza del sistema (CA, VA, TSA, proveedores de identidad, validadores de autenticación).
en	Register the trusted entities of the system (CA, VA, TSA, identity providers, authentication validators).
es	La actualización 3.0.10S2R1_T_KI_C13 añade la siguiente funcionalidad al servicio de verificación de firmas.
en	The 3.0.10S2R1_T_KI_C13 update adds the following functionality to the signature verification service.
CSMT – exact MT matches	
es	Dentro de la actividad en el grupo BIG, y con la finalidad de verificar la interoperabilidad entre las tecnologías SPOC/EAC de otros países que desplieguen infraestructuras de pasaporte de segunda generación, Safelayer ha abierto un área de pruebas de SPOC para pasaporte electrónico conforme las especificaciones del BIG.
en	As part of the BIG's activity and with the aim of testing the interoperability between the SPOC/EAC technologies of the countries deploying infrastructures for the second generation ePassport, Safelayer has created a SPOC test area for electronic passports as per the BIG's specifications.
es	Indica el nombre completo de la clase Java que actuará en el "nivel de presentación" para intercambiar el valor del elemento o atributo XML (dentro del documento XML global virtual que maneja el servicio EP) con el de la columna de la base de datos al que corresponda.
en	Specifies the complete name of the Java class that is to act at the presentation level to exchange the value of the XML element or attribute (within the virtual, global XML document that the EP service handles) with the value of the column of the database to which it corresponds.
es	La solución permite utilizar diferentes repositorios de identidad que se encuentren en producción, basados en estándares como LDAP/AD o basados en bases de datos, mapeando los atributos de identidad y el formato de servicio que se proporciona basado en OAuth/OpenID Connect y SAML.
en	The solution supports using different identity repositories that are found in production, based on standards such as LDAP/AD or databases, by mapping the identity attributes and the format of the service provided based on OAuth/OpenID Connect and SAML.

Benchmarks – Representative Set 8

source	en
target	hr
subject domain	legislation
estimated corpus size	400,000
segments per representative set	2,388
words per source segment	26
words per target segment	23
GOOGLE – NMT	
words per MT segment	23
BLEU score	36.65
exact MT match (count)	106
exact MT match (percent)	4.4%
words per exact MT match (count)	6
filtered BLEU score (no exact MT matches)	36.13
segments requiring edit (count)	2,282
character edits per segment	51
total character edits	116,382
CUSTOMIZED – SMT	
words per MT segment	23
BLEU score	77.21
exact MT match (count)	801
exact MT match (percent)	33.5%
words per exact MT match (count)	16
filtered BLEU score (no exact MT matches)	70.53
segments requiring edit (count)	1,587
character edits per segment	34
total character edits	53,958

Benchmarks – Representative Set 8 (en-hr)	
GNMT – exact MT matches	
en	Kobayashi, T., M. Matsuda, H. Kajiura-Kobayashi, A. Suzuki, N. Saito, M. Nakamoto, N. Shibata, and Y.
hr	Kobayashi, T., M. Matsuda, H. Kajiura-Kobayashi, A. Suzuki, N. Saito, M. Nakamoto, N. Shibata i Y.
en	Regulation (EU) 2017/371 of the European Parliament and of the Council
hr	Uredba (EU) 2017/371 Europskog parlamenta i Vijeća
en	Active yeasts, other than culture yeast and baker's yeast
hr	Aktivni kvasci, osim kulture kvasca i pekarskog kvasca
CSMT – exact MT matches	
en	Council Directive 2003/85/EC of 29 of September 2003 on Community measures for the control of foot–and–mouth disease repealing Directive 85/511/EEC and Decisions 89/531/EEC and 91/665/EEC and amending Directive 92/46/EEC (OJ L 306, 22.11.2003, p. 1).
hr	Direktiva Vijeća 2003/85/EZ od 29. rujna 2003. o mjerama Zajednice za suzbijanje slinavke i šapa, o stavljanju izvan snage Direktive 85/511/EEZ i odluka 89/531/EEZ i 91/665/EEZ te o izmjeni Direktive 92/46/EEZ (SL L 306, 22.11.2003., str. 1.).
en	Commission Implementing Regulation (EU) No 799/2014 of 24 July 2014 establishing models for annual and final implementation reports pursuant to Regulation (EU) No 514/2014 of the European Parliament and of the Council laying down general provisions on the Asylum, Migration and Integration Fund and on the instrument for financial support for police cooperation, prevention and combating crime and crisis management (see page 4 of this Official Journal).
hr	Provedbena uredba Komisije (EU) br. 799/2014 od 24. srpnja 2014. o utvrđivanju modela godišnjih i završnih izvješća o provedbi u skladu s Uredbom (EU) br. 514/2014 Europskog parlamenta i Vijeća o utvrđivanju općih odredaba o Fondu za azil, migracije te integraciju i o Instrumentu za financijsku potporu u području policijske suradnje, sprečavanja i suzbijanja kriminala te upravljanja krizama (vidjeti stranicu 4 ovoga Službenog lista).
en	On 13 July 2010, in accordance with Article 126(7) TFEU and Article 3(4) of Council Regulation (EC) No 1467/97 [2], the Council, on the basis of a recommendation from the Commission, addressed a recommendation to Cyprus with a view to bringing the situation of an excessive government deficit to an end by 2012.
hr	Vijeće je 13. srpnja 2010., u skladu s člankom 126. stavkom 7. UFEU-a i člankom 3. stavkom 4. Uredbe Vijeća (EZ) br. 1467/97 [2], na temelju preporuke Komisije uputilo preporuku Cipru s ciljem okončanja stanja prekomjernog državnog deficita do 2012.

Benchmarks – Representative Set 9

source	en
target	es
subject domain	medical
estimated corpus size	1,000,000
segments per representative set	2,396
words per source segment	15
words per target segment	17
GOOGLE – NMT	
words per MT segment	16
BLEU score	48.82
exact MT match (count)	191
exact MT match (percent)	8.0%
words per exact MT match (count)	6
filtered BLEU score (no exact MT matches)	47.6
segments requiring edit (count)	2,205
character edits per segment	27
total character edits	59,535
CUSTOMIZED – SMT	
words per MT segment	17
BLEU score	77.75
exact MT match (count)	824
exact MT match (percent)	34.4%
words per exact MT match (count)	13
filtered BLEU score (no exact MT matches)	70.46
segments requiring edit (count)	1,572
character edits per segment	21
total character edits	33,012

Benchmarks – Representative Set 9 (en-es)	
GNMT – exact MT matches	
en	Or buys you a brand new car of the same make and model if repair costs plus the value of the damaged vehicle exceed the price of a comparable new car.
es	O le compra un automóvil nuevo de la misma marca y modelo si los costos de reparación más el valor del vehículo dañado exceden el precio de un automóvil nuevo comparable.
en	It has sections on motion, light, thermodynamics, sound, waves, electricity, magnetism, and modern physics.
es	Tiene secciones sobre movimiento, luz, termodinámica, sonido, ondas, electricidad, magnetismo y física moderna.
en	However, these oral agents (pills) will not be provided to you during the study.
es	Sin embargo, estos agentes orales (píldoras) no se le proporcionarán durante el estudio.
CSMT – exact MT matches	
en	In order to properly conduct this research study, the study doctor and study staff will need to collect and report certain private information from you regarding your physical and/or mental health as a result of the procedures and examinations described elsewhere in the informed consent for this study.
es	Para poder realizar este estudio de investigación de manera apropiada, el médico y el personal del estudio necesitarán reunir y comunicar cierta información privada sobre usted respecto a su salud física y/o mental como resultado de los procedimientos y exámenes descritos en otras partes del consentimiento informado para este estudio.
en	Amongst a great deal of support from presenting sponsors Industrial Supply and Field Wands, a behind the scenes host committee, composed of XYZ members local to the Denver area, is working diligently to assure the success and relevance of this year's convention.
es	Entre un gran apoyo de los patrocinadores Industrial Supply y Field Wands, un comité anfitrión detrás de bambalinas, formado por los miembros de la XYZ locales del área de Denver, están trabajando diligentemente para garantizar el éxito y la relevancia de la convención de este año.
en	Approximately how many times per year do you access healthcare services for a family member, e.g., for routine physicals, to treat a sickness or disease, to treat an injury, to manage a chronic health issue, etc?
es	¿Aproximadamente cuántas veces al año accede usted a servicios de atención de la salud para un integrante de su familia, por ejemplo: exámenes físicos de rutina, tratamiento de una enfermedad o dolencia, tratamiento de una lesión, control de un problema de salud crónico, etc.?

Benchmarks – Representative Set 10

source	sv
target	en
subject domain	legislation
estimated corpus size	180,000
segments per representative set	2,372
words per source segment	22
words per target segment	25
GOOGLE – NMT	
words per MT segment	24
BLEU score	47.63
exact MT match (count)	136
exact MT match (percent)	5.7%
words per exact MT match (count)	10
filtered BLEU score (no exact MT matches)	46.44
segments requiring edit (count)	2,236
character edits per segment	47
total character edits	105,092
CUSTOMIZED – SMT	
words per MT segment	25
BLEU score	75.71
exact MT match (count)	731
exact MT match (percent)	30.8%
words per exact MT match (count)	16
filtered BLEU score (no exact MT matches)	70.15
segments requiring edit (count)	1,641
character edits per segment	40
total character edits	65,640

Benchmarks – Representative Set 10 (sv-en)	
GNMT – exact MT matches	
sv	Texterna till förordningarna (EU) nr 550/2010, (EU) nr 574/2010, (EU) nr 632/2010, (EU) nr 633/2010 och (EU) nr 662/2010 på isländska och norska, som ska offentliggöras i EES-supplementet till Europeiska unionens officiella tidning, ska vara giltiga.
en	The texts of Regulations (EU) No 550/2010, (EU) No 574/2010, (EU) No 632/2010, (EU) No 633/2010 and (EU) No 662/2010 in the Icelandic and Norwegian languages, to be published in the EEA Supplement to the Official Journal of the European Union, shall be authentic.
sv	Kommissionens förordning (EG) nr 327/98 av den 10 februari 1998 om öppnande och förvaltning av vissa tullkvoter för import av ris och brutet ris [3] har ändrats flera gånger [4] på ett väsentligt sätt.
en	Commission Regulation (EC) No 327/98 of 10 February 1998 opening and providing for the administration of certain tariff quotas for imports of rice and broken rice [3] has been substantially amended several times [4].
sv	Medlemsstaterna ska senast den 31 december 2011 anta och offentliggöra de lagar och andra författningar som är nödvändiga för att följa detta direktiv.
en	Member States shall adopt and publish, by 31 December 2011 at the latest, the laws, regulations and administrative provisions necessary to comply with this Directive.
CSMT – exact MT matches	
sv	Kommissionen har i enlighet med artikel 9.1 första stycket i förordning (EG) nr 510/2006 granskat Förenade kungarikets ansökan om godkännande av ändringar av produktspecifikationen för den skyddade geografiska beteckningen "Welsh Beef", vilken registrerades i enlighet med kommissionens förordning (EG) nr 2400/96 [2] i dess ändrade lydelse enligt förordning (EG) nr 2066/2002 [3].
en	In accordance with the first subparagraph of Article 9(1) of Regulation (EC) No 510/2006, the Commission has examined the United Kingdom's application for the approval of amendments to the specification for the protected geographical indication 'Welsh Beef' registered in accordance with Commission Regulation (EC) No 2400/96 [2], as amended by Regulation (EC) No 2066/2002 [3].
sv	I det avseendet noterar övervakningsmyndigheten att de norska myndigheterna bara lämnat allmänna kommentarer om hur de måste genomföra åtgärderna på grund av Hurtigrutens svaga ekonomiska ställning [35] för att se till att företaget skulle fortsätta att fullgöra den allmänna trafikplikten, eftersom det vore svårt för de norska myndigheterna att hitta ett annat företag som kan tillhandahålla tjänsten (åtminstone på kort till medellång sikt).

en	In that regard, the Authority notes that the Norwegian authorities have only made general remarks on how they had to implement the measures due to Hurtigruten's weak financial position [35] in order to ensure that it would continue to provide the public service, as it would be difficult, for the Norwegian authorities, to find another undertaking to provide the service (at least in the short to medium term).
sv	Rådets förordning (EG) nr 1275/2005 av den 26 juli 2005 om ändring av förordning (EG) nr 2268/2004 om införande av en slutgiltig antidumpningstull på import av volframkarbid och smält volframkarbid med ursprung i Folkrepubliken Kina (EUT L 202, 3.8.2005, s. 1).
en	Council Regulation (EC) No 1275/2005 of 26 July 2005 amending Regulation (EC) No 2268/2004 imposing a definitive anti-dumping duty on imports of tungsten carbide and fused tungsten carbide originating in the People's Republic of China (OJ L 202, 3.8.2005, p. 1).

Benchmarks – Representative Set 11

source	es
target	en
subject domain	medical
estimated corpus size	140,000
segments per representative set	1,361
words per source segment	19
words per target segment	19
GOOGLE – NMT	
words per MT segment	18
BLEU score	44.35
exact MT match (count)	122
exact MT match (percent)	9.0%
words per exact MT match (count)	5
filtered BLEU score (no exact MT matches)	43.23
segments requiring edit (count)	1,239
character edits per segment	38
total character edits	47,082
CUSTOMIZED – SMT	
words per MT segment	18
BLEU score	78.86
exact MT match (count)	590
exact MT match (percent)	43.3%
words per exact MT match (count)	13
filtered BLEU score (no exact MT matches)	70.13
segments requiring edit (count)	771
character edits per segment	28
total character edits	21,588

Benchmarks – Representative Set 11 (es-en)	
GNMT – exact MT matches	
es	bajo recuento de glóbulos blancos potencialmente asociado con fiebre
en	low white blood cell count potentially associated with fever
es	¿Puedo retirar o revocar (cancelar) mi permiso?
en	Can I withdraw or revoke (cancel) my permission?
es	¿Cuál es el posible beneficio de participar en este estudio?
en	What is the possible benefit of participating in this study?
CSMT – exact MT matches	
es	El Promotor tendrá el derecho único y exclusivo sobre las invenciones, descubrimientos o innovaciones, patentables o no, derivados de la observancia del Protocolo y de la realización del Estudio en virtud de este Contrato o resultantes de cualquier otro modo del uso, utilización indebida o modificación del Fármaco del Estudio en virtud del Contrato (las "Invenciones").
en	The Sponsor will have the sole and exclusive right over the inventions, discoveries or innovations, whether patentable or not, arising from the observance of the Protocol and of conducting the Study in accordance with this Agreement or resulting from any other mode of use, improper use or modification of the Study Drug in accordance with the Agreement (the "Inventions").
es	Los datos personales del paciente están protegidos por la Ley Nacional 25326, se garantiza la confidencialidad y privacidad de los datos personales, se informa quiénes podrán tener acceso a sus datos de HC y por qué, debiendo el paciente permitir este acceso; de no permitirlo, no podrá participar en el estudio.
en	The patient's personal data are protected by National Law 25326. The confidentiality and privacy of personal data are guaranteed. The patient is informed of who may have access to MR data and why, and the patient must permit such access. If permission is not given, the patient cannot participate in the study.
es	En caso de contradicción entre este Contrato y el Protocolo adjunto ABC-123 (Anexo A), tendrán prioridad las estipulaciones del Protocolo en lo que respecta a la asistencia de los sujetos del Estudio y las estipulaciones del Contrato en lo que respecta a las demás cuestiones.
en	In the event of a contradiction between this Agreement and attached Protocol ABC-123 (Appendix A), the clauses of the Protocol will take precedence as regards the health care of the Study subjects and the clauses of the Agreement as regards the remaining matters.

Benchmarks – Representative Set 12

source	en
target	es
subject domain	insurance
estimated corpus size	100,000
segments per representative set	2,352
words per source segment	15
words per target segment	17
GOOGLE – NMT	
words per MT segment	17
BLEU score	46.56
exact MT match (count)	208
exact MT match (percent)	8.8%
words per exact MT match (count)	6
filtered BLEU score (no exact MT matches)	45.39
segments requiring edit (count)	2,144
character edits per segment	29
total character edits	62,176
CUSTOMIZED – SMT	
words per MT segment	17
BLEU score	75.15
exact MT match (count)	826
exact MT match (percent)	35.1%
words per exact MT match (count)	12
filtered BLEU score (no exact MT matches)	68.13
segments requiring edit (count)	1,526
character edits per segment	26
total character edits	39,676

Benchmarks – Representative Set 12 (en-es)	
GNMT – exact MT matches	
en	On a personal level, Bill and his wife, Jessica, live in Lakeland, MN with their two sons, Angela (7) and Peter (3).
es	A nivel personal, Bill y su esposo, Jessica, viven en Lakeland, MN, con sus dos hijos, Angela (7) y Peter (3).
en	Medical Group Number (8 digits) Medical Subgroup Number (4 digits) Medical Class Number (4 digits)
es	Número de grupo médico (8 dígitos) Número de subgrupo médico (4 dígitos) Número de clase médica (4 dígitos)
en	The generic drug atenolol comes in 25 mg, 50 mg, and 100 mg tablets.
es	El medicamento genérico atenolol viene en tabletas de 25 mg, 50 mg y 100 mg.
CSMT – exact MT matches	
en	For instructions on how to do this, go to Chapter 5, Section 2 of this booklet.) Here are some types of situations when you may want to give us copies of your drug receipts to be sure we have a complete record of what you have spent for your drugs
es	Para obtener instrucciones sobre cómo hacerlo, consulte el Capítulo 5, Sección 2 de este folleto). A continuación se describen algunas situaciones en las que puede ser recomendable que nos envíe copias de los recibos de los medicamentos para que, de esta forma, tengamos un registro completo de lo que ha pagado por los medicamentos
en	A "medical emergency" is when you, or any other prudent layperson with an average knowledge of health and medicine, believe that you have medical symptoms that require immediate medical attention to prevent loss of life, loss of a limb, or loss of function of a limb.
es	Una "emergencia médica" sucede cuando usted o cualquier otra persona prudente con conocimiento promedio de medicina y de salud cree que tiene síntomas médicos que requieren atención médica inmediata a fin de prevenir la pérdida de la vida, de una extremidad o de la función de una extremidad.
en	For covered services that have a benefit limitation, you pay the full cost of any services you get after you have used up your benefit for that type of covered service, the cost will be applied to your out-of-pocket benefit maximum.
es	Para los servicios cubiertos que tienen una limitación de beneficios, usted paga el costo total de los servicios que reciba después de que haya agotado su beneficio para ese tipo de servicios cubiertos, el costo será aplicado a su máximo de beneficios en efectivo.

Benchmarks – Representative Set 13

source	en
target	it
subject domain	securities
estimated corpus size	1,500,000
segments per representative set	3,381
words per source segment	27
words per target segment	30
GOOGLE – NMT	
words per MT segment	28
BLEU score	35.9
exact MT match (count)	132
exact MT match (percent)	3.9%
words per exact MT match (count)	12
filtered BLEU score (no exact MT matches)	34.9
segments requiring edit (count)	3,249
character edits per segment	63
total character edits	204,687
CUSTOMIZED – SMT	
words per MT segment	28
BLEU score	76.64
exact MT match (count)	1,289
exact MT match (percent)	38.1%
words per exact MT match (count)	21
filtered BLEU score (no exact MT matches)	67.9
segments requiring edit (count)	2,092
character edits per segment	45
total character edits	94,140

Benchmarks – Representative Set 13 (en-it)

GNMT – exact MT matches

en	9. Changes in the composition of the investment portfolio
it	9. Variazioni nella composizione del portafoglio di investimenti
en	E) Information on the risks and relevant hedging policies
it	E) Informazioni sui rischi e sulle relative politiche di copertura
en	The analysis carried out highlighted the following key elements
it	L'analisi effettuata ha evidenziato i seguenti elementi chiave

CSMT – exact MT matches

en	(b) Confidential Information may be used exclusively to negotiate and, potentially, sign and perform the Documents, as it is absolutely forbidden to use the Confidential Information for other purposes, and it may for not reason be disclosed to third parties unless the other Party has given prior written consent. To this end, the Parties undertake to take all reasonable precautions when dealing with and managing such Confidential Information.
it	(b) Le Informazioni Confidenziali potranno essere utilizzate esclusivamente ai fini della negoziazione ed eventualmente della stipulazione ed esecuzione dei Documenti, essendo assolutamente vietato utilizzare le Informazioni Confidenziali per raggiungere finalità diverse, e non potranno per alcun motivo ed in nessun modo essere divulgate a terzi, se non con il preventivo consenso scritto dell'altra Parte. A tal fine, le Parti si obbligano ad adottare ogni ragionevole precauzione nel trattare e nel gestire tali Informazioni Confidenziali.
en	The investment objective of such Sub-Funds is to return a proportion or all of the performance of a pre-defined Third Party Trading Strategy or Index to the Sub-Fund via derivative contracts, as defined in the individual Sub-Fund Supplements. The market risk management for such Sub-Funds is non-discretionary and therefore the risk measurements considered in the management of the assets reflect the extent of the Sub-Funds' exposure to the underlying Index or Strategy.
it	L'obiettivo di investimento di questi Comparti consiste nel conseguire una percentuale o l'intera performance di una predefinita Strategia di negoziazione o Indice di terzi tramite contratti derivati, come stabilito nelle Note Integrative dei singoli Comparti La gestione del rischio di mercato per tali Comparti non è discrezionale e, pertanto, le valutazioni del rischio considerate nella gestione delle attività riflettono la misura dell'esposizione dei Comparti all'Indice o alla Strategia sottostante.
en	By mentioning rules of transparency and non-discrimination, the budget law for 2004 has codified a principle that was already underlying the original version of Article 1, section 2, and intended to allay the risk that the sale take place at a price that is below market price, favoring the purchaser from a competitive point of view, in violation of the law on the matter of State aid.

it	Con il richiamo a regole di trasparenza e non discriminazione, la legge finanziaria 2004 ha codificato un principio già sotteso alla versione originaria dell'art. 1, comma 2, ed inteso a scongiurare il rischio che la cessione abbia luogo ad un prezzo inferiore a quello di mercato, favorendo l'acquirente dal punto di vista concorrenziale in violazione della normativa in materia di aiuti di Stato.

https://www.slate.rocks/

Benchmarks – Representative Set 14

source	en
target	cs
subject domain	legislation
estimated corpus size	160,000
segments per representative set	2,366
words per source segment	27
words per target segment	25
GOOGLE – NMT	
words per MT segment	23
BLEU score	44.12
exact MT match (count)	185
exact MT match (percent)	7.8%
words per exact MT match (count)	6
filtered BLEU score (no exact MT matches)	43.21
segments requiring edit (count)	2,181
character edits per segment	53
total character edits	115,593
CUSTOMIZED – SMT	
words per MT segment	25
BLEU score	74.57
exact MT match (count)	819
exact MT match (percent)	34.6%
words per exact MT match (count)	16
filtered BLEU score (no exact MT matches)	67.32
segments requiring edit (count)	1,547
character edits per segment	44
total character edits	68,068

Benchmarks – Representative Set 14 (en-cs)
GNMT – exact MT matches
en	This Agreement shall enter into force on the first day of the second month following the date on which the Parties notify each other of the completion of the legal procedures necessary for this purpose.
cs	Tato dohoda vstupuje v platnost prvním dnem druhého měsíce následujícího po dni, kdy si strany navzájem oznámí dokončení právních postupů nezbytných pro tento účel.
en	These Rules of Procedure may be amended by a decision of the Association Council in accordance with Article 408(1) of the Agreement.
cs	Tento jednací řád může být změněn rozhodnutím Rady přidružení v souladu s čl. 408 odst. 1 dohody.
en	The Netherlands has questioned the impact of possible aid on the internal market for clubs not playing football at European level.
cs	Nizozemsko zpochybnilo dopad možné podpory na vnitřní trh pro kluby, které nehrají fotbal na evropské úrovni.
CSMT – exact MT matches
en	Council Decision 2001/924/EC of 17 December 2001 extending the effects of the Decision establishing an exchange, assistance and training programme for the protection of the euro against counterfeiting ('Pericles' programme) to the Member States which have not adopted the euro as the single currency (OJ L 339, 21.12.2001, p. 55).
cs	Rozhodnutí Rady 2001/924/ES ze dne 17. prosince 2001, kterým se rozšiřuje působnost rozhodnutí o akčním programu výměny, pomoci a odborného vzdělávání za účelem ochrany eura proti padělání (program „Pericles") na členské státy, které nepřijaly euro jako jednotnou měnu (Úř. věst. L 339, 21.12.2001, s. 55).
en	The first working day following receipt of the request is […].This request, made by [name of the Member State concerned/name of the relevant contracting entity] [3], concerns [brief mention of the relevant sector or activity] in [that country/indicate the Member State concerned].
cs	Prvním pracovním dnem následujícím po obdržení žádosti je […].Tato žádost, kterou podal [název dotčeného členského státu/název příslušného zadavatele] [3], se týká [stručný popis příslušného odvětví nebo činnosti] v [této zemi/uveďte dotčený členský stát].
en	Commission Regulation (EC) No 391/2007 of 11 April 2007 laying down detailed rules for the implementation of Council Regulation (EC) No 861/2006 as regards the expenditure incurred by Member States in implementing the monitoring and control systems applicable to the Common Fisheries Policy (OJ L 97, 12.4.2007, p. 30).

cs	Nařízení Komise (ES) č. 391/2007 ze dne 11. dubna 2007, kterým se stanoví prováděcí pravidla k nařízení Rady (ES) č. 861/2006, pokud jde o výdaje vzniklé členským státům při provádění monitorovacích a kontrolních systémů použitelných pro společnou rybářskou politiku (Úř. věst. L 97, 12.4.2007, s. 30).

Benchmarks – Representative Set 15

source	sv
target	en
subject domain	contract
estimated corpus size	80,000
segments per representative set	2,336
words per source segment	14
words per target segment	18
GOOGLE – NMT	
words per MT segment	17
BLEU score	35.38
exact MT match (count)	98
exact MT match (percent)	4.2%
words per exact MT match (count)	4
filtered BLEU score (no exact MT matches)	35.02
segments requiring edit (count)	2,238
character edits per segment	36
total character edits	80,568
CUSTOMIZED – SMT	
words per MT segment	18
BLEU score	74.86
exact MT match (count)	787
exact MT match (percent)	33.7%
words per exact MT match (count)	13
filtered BLEU score (no exact MT matches)	67.18
segments requiring edit (count)	1,549
character edits per segment	27
total character edits	41,823

Benchmarks – Representative Set 15 (sv-en)	
GNMT – exact MT matches	
sv	Scenariospecifika antaganden för utvalda scenarier belyses i Tabell A-3.
en	Scenario-specific assumptions for selected scenarios are illustrated in Table A-3.
sv	Noteringar från tidigare möten i kursiv text.
en	Notes from previous meetings in italics.
sv	Föraren har full kontroll över fordonet.
en	The driver has full control of the vehicle.
CSMT – exact MT matches	
sv	Denna TSD (teknisk specifikation för driftskompatibilitet) beskriver hur ett visst delsystem ska vara beskaffat för att uppfylla de väsentliga kraven och säkerställa driftskompatibilitet inom unionens järnvägssystem, så som beskrivs i artikel 1 i direktiv 2008/57/EG.
en	This technical specification for interoperability (TSI) is a specification by which a particular subsystem is addressed in order to meet the essential requirements and ensure the interoperability of the Union's rail system as described in Article 1 of Directive 2008/57/EC.
sv	Ett sådant utförande ställer dock höga krav på utförande och detaljutformning (inkl. brandgasventilationen) och därmed kan en robustare lösning vara att delar av skyddsnivån fördelas till exempelvis brandskyddande sprutbetong, och andra delar fördelas till inklädnad/undertak.
en	However such a specification puts high demands on the specification and components (incl. fire gas ventilation) and as such, a more robust solution can be to allocate parts of the protection level specification to e.g. fire resistant injected concrete and allocate other parts to the cladding/ceiling.
sv	Revisionerna skall utföras minst en gång per år och minst en revision skall utföras under pågående arbete (tillverkning, montering eller installation) inom ramen för det delsystem som är föremål för EG-kontrollförfarandet i punkt 6.
en	The frequency of the audits shall be at least once a year, with at least one audit during the time period of performing relevant activities (manufacture, assembling or installation) for the subsystem being the subject of the EC verification procedure mentioned under point 6.

Benchmarks – Representative Set 16

source	en
target	it
subject domain	regulatory
estimated corpus size	979,150
segments per representative set	3,381
words per source segment	27
words per target segment	30
GOOGLE – NMT	
words per MT segment	28
BLEU score	35.91
exact MT match (count)	131
exact MT match (percent)	3.9%
words per exact MT match (count)	12
filtered BLEU score (no exact MT matches)	34.91
segments requiring edit (count)	3,250
character edits per segment	63
total character edits	204,750
CUSTOMIZED – SMT	
words per MT segment	28
BLEU score	73.68
exact MT match (count)	1,132
exact MT match (percent)	33.5%
words per exact MT match (count)	20
filtered BLEU score (no exact MT matches)	66.03
segments requiring edit (count)	2,249
character edits per segment	45
total character edits	101,205

GNMT – exact MT matches

en	The Sub-Fund will close upon closure of the last active Share Class.
it	Il Comparto chiuderà alla chiusura dell'ultima Classe di Azioni attiva.
en	The Hang Seng index represents the reference indicator of the Sub-Fund.
it	L'indice Hang Seng rappresenta l'indicatore di riferimento del Comparto.
en	Le attività sono state svolte dalla società consortile ABC 991.
it	The activities were carried out by the consortium company ABC 991.

CSMT – exact MT matches

en	By mentioning rules of transparency and non-discrimination, the budget law for 2004 has codified a principle that was already underlying the original version of Article 1, section 2, and intended to allay the risk that the sale take place at a price that is below market price, favoring the purchaser from a competitive point of view, in violation of the law on the matter of State aid.
it	Con il richiamo a regole di trasparenza e non discriminazione, la legge finanziaria 2004 ha codificato un principio già sotteso alla versione originaria dell'art. 1, comma 2, ed inteso a scongiurare il rischio che la cessione abbia luogo ad un prezzo inferiore a quello di mercato, favorendo l'acquirente dal punto di vista concorrenziale in violazione della normativa in materia di aiuti di Stato.
en	If the Subfund is not going to be liquidated because of such a termination at short notice of the overall derivative structure, but rather the current counterparty to such an overall derivative structure is to be replaced by a new counterparty, then during the transition period it may also occur that investors do not participate."
it	Qualora il Comparto non venisse liquidato a seguito della suddetta risoluzione della struttura complessiva dei derivati con breve preavviso, bensì la controparte attuale in detta struttura complessiva dei derivati fosse sostituita da una nuova controparte, nel periodo di transizione potrebbe accadere che gli investitori non partecipino."
en	Based on an inspection of the amounts of the service components identified by you in Annex 1 to your notice referred to above, ABC is currently using 14 housing sites (hereinafter the Sites) and 25 Ethernet interface connections with a total capacity of around 2.5Gb/s (hereinafter, the Connections).
it	In base alla verifica delle consistenze delle componenti di servizio da Voi individuate nell'Allegato 1 alla Vostra comunicazione di cui in oggetto, risultano in uso ad ABC alla data di oggi 14 siti in housing (di seguito, i Siti) e 25 collegamenti con interfaccia Ethernet, di capacità complessiva di circa 2,5Gb/s (di seguito, i Collegamenti).

Benchmarks – Representative Set 17

source	en
target	it
subject domain	patents
estimated corpus size	1,000,000
segments per representative set	2,396
words per source segment	16
words per target segment	18
GOOGLE – NMT	
words per MT segment	17
BLEU score	40.34
exact MT match (count)	138
exact MT match (percent)	5.8%
words per exact MT match (count)	7
filtered BLEU score (no exact MT matches)	39.07
segments requiring edit (count)	2,258
character edits per segment	35
total character edits	79,030
CUSTOMIZED – SMT	
words per MT segment	18
BLEU score	75.72
exact MT match (count)	978
exact MT match (percent)	40.8%
words per exact MT match (count)	14
filtered BLEU score (no exact MT matches)	65.28
segments requiring edit (count)	1,418
character edits per segment	30
total character edits	42,540

Benchmarks – Representative Set 17 (en-it)

GNMT – exact MT matches

en	Button that saves the configured data and sends the corrective actions to the users involved in the flow.
it	Pulsante che salva i dati configurati e invia le azioni correttive agli utenti coinvolti nel flusso.
en	Use this procedure to schedule system data backups to a backup tape or USB flash drive.
it	Utilizzare questa procedura per pianificare i backup dei dati di sistema su un nastro di backup o un'unità flash USB.
en	Audit Trail provides information about the activity that has occurred for this version of this document.
it	Audit Trail fornisce informazioni sull'attività che si è verificata per questa versione di questo documento.

CSMT – exact MT matches

en	If the XXXXXX Drain Pump inside your system is oriented with the Drain Hoses at the top of the pump, then use the procedure described on pages 6-40 through 6-44 in the IFU to perform the yearly XXXXXX Drain Pump Tube Replacement.
it	Se la pompa XXXXXXa di drenaggio all'interno del sistema è orientata con i tubi di drenaggio nella parte superiore della pompa, utilizzare la procedura descritta nella pagine da 6-40 a 6-44 nell'IFU per eseguire la sostituzione annuale del tubo della pompa XXXXXXa di drenaggio.
en	16 to 38°C (60 to 100°F)To reach temperatures above ambient, the centrifuge is dependent on the frictional heat generated inside the chamber during operation.
it	da 16 a 38 °C (da 60 a 100 °F)Per raggiungere temperature superiori alla temperatura ambiente, la centrifuga dipende dal calore dell'attrito generato all'interno della camera durante l'operazione.
en	A possible interference was tested by adding the substance to whole blood with low galactose concentration, and testing the blood spots for galactose according to CLSI Document EP7-A (8).
it	Una possibile interferenza è stata valutata aggiungendo la sostanza a sangue intero a bassa concentrazione di galattosio e analizzando le macchie di sangue per il galattosio in conformità al documento CLSI EP7-A (8).

Benchmarks – Representative Set 18

source	en
target	it
subject domain	finance
estimated corpus size	309,608
segments per representative set	2,383
words per source segment	26
words per target segment	29
GOOGLE – NMT	
words per MT segment	27
BLEU score	36.66
exact MT match (count)	116
exact MT match (percent)	4.9%
words per exact MT match (count)	10
filtered BLEU score (no exact MT matches)	35.56
segments requiring edit (count)	2,267
character edits per segment	60
total character edits	136,020
CUSTOMIZED – SMT	
words per MT segment	29
BLEU score	69.93
exact MT match (count)	608
exact MT match (percent)	25.5%
words per exact MT match (count)	19
filtered BLEU score (no exact MT matches)	64.13
segments requiring edit (count)	1,775
character edits per segment	47
total character edits	83,425

Benchmarks – Representative Set 18 (en-it)	
GNMT – exact MT matches	
en	The Company is exposed to market price risk arising from its investments in securities.
it	La Società è esposta al rischio di prezzo di mercato derivante dai suoi investimenti in titoli.
en	The calculation of CER growth is described on page 51.
it	Il calcolo della crescita CER è descritto a pagina 51.
en	to optimise the operative processes in customer management.
it	ottimizzare i processi operativi nella gestione dei clienti.
CSMT – exact MT matches	
en	The Pledge of the Jointly Obliged Parties shall be constituted at the same time as the Framework Agreement is signed, in the favour of the Company, as guarantee, amongst others, of all payment obligations of the Jointly Obliged Parties (for capital, interest and expenses), in accordance with and pursuant to the Framework Agreement and/or the Definitive Caution and/or the Provisory Caution and/or the Deed of Joint Obligation.
it	Il Pegno Coobbligati sarà costituito, contestualmente alla sottoscrizione dell'Accordo Quadro, in favore della Società a garanzia, tra l'altro, di tutte le obbligazioni di pagamento dei Coobbligati (per capitale, interessi e spese), ai sensi e per gli effetti dell'Accordo Quadro e/o della Cauzione Definitiva e/o della Cauzione Provvisoria e/o dell'Atto di Coobbligazione.
en	Payments for Shares will be required to be made in the currency of the relevant Class, if any, or in the Reference Currency of the relevant Sub-Fund or in any other currency specified by the investor (in which case any currency conversion costs shall be borne by the investor) within a period as defined in Appendix 1 of this Prospectusfor each Class within each individual Sub-Fund.
it	I pagamenti per le Azioni dovranno essere effettuati nell'eventuale valuta della relativa Classe, o nella Valuta di riferimento del relativo Comparto o in qualunque altra valuta indicata dall'investitore (nel qual caso, gli eventuali costi di conversione dovranno essere sopportati dall'investitore) entro il termine indicato nell'Appendice 1 al presente Prospetto per ciascuna Classe all'interno di ogni singolo Comparto.
en	In addition to the costs incurred in the acquisition and sale of a certificate, a derivative, or shares in property funds or in funds oriented towards REITs, additional costs may be incurred at the level of an index, a certificate, a derivative or the above-mentioned funds, which could affect the value of the investment, possibly to a substantial extent.
it	Oltre ai costi sostenuti per l'acquisizione e la vendita di un certificato, un derivato o azioni di fondi immobiliari o fondi specializzati in REIT, potrebbero registrarsi costi aggiuntivi a livello di indice, certificato, derivato o fondo tali da influire sul valore dell'investimento, anche in misura sostanziale.

Benchmarks – Representative Set 19

source	en
target	it
subject domain	consumer-goods
estimated corpus size	100,000
segments per representative set	2,353
words per source segment	17
words per target segment	18
GOOGLE – NMT	
words per MT segment	17
BLEU score	33.07
exact MT match (count)	102
exact MT match (percent)	4.3%
words per exact MT match (count)	5
filtered BLEU score (no exact MT matches)	32.47
segments requiring edit (count)	2,251
character edits per segment	41
total character edits	92,291
CUSTOMIZED – SMT	
words per MT segment	18
BLEU score	69.3
exact MT match (count)	700
exact MT match (percent)	29.8%
words per exact MT match (count)	12
filtered BLEU score (no exact MT matches)	61.78
segments requiring edit (count)	1,653
character edits per segment	31
total character edits	51,243

Benchmarks – Representative Set 19 (en-it)	
GNMT – exact MT matches	
en	Butter, olive oil, margarine, canola oil, sunflower oil, sesame oil.
it	Burro, olio d'oliva, margarina, olio di canola, olio di semi di girasole, olio di sesamo.
en	The number of variants selected exceeds the maximum.
it	Il numero di varianti selezionate supera il massimo.
en	Many scan results are above 40,000.
it	Molti risultati di scansione sono superiori a 40.000.
CSMT – exact MT matches	
en	If in the opinion of the Company, you are buying and returning Products merely to maintain your Executive status level, the Company may at its discretion change your distributor title to reflect the level of your activity as set forth in the SCP.
it	Qualora la Società ritenga che l'Incaricato stia acquistando e restituendo prodotti esclusivamente per conservare la propria qualifica di Executive, essa potrà a sua discrezione modificare il titolo dell'Incaricato in modo da rispecchiare il suo livello di attività secondo quanto indicato nel Piano dei Compensi.
en	As the company continues to develop comprehensive health and skin care solutions for the anti-ageing industry, the TRADEMARK® Research Centre will become a beacon of innovation and integrity, setting the standard for others to follow.
it	Mentre la Società continua a sviluppare soluzioni complete per la salute e la cura dermatologica destinate all'industria dei prodotti anti-età, il TRADEMARK® Research Centre diventerà un punto di riferimento in termini di innovazione e integrità, e definirà gli standard che altri seguiranno.
en	BRAND_NAME – used in conjunction with TRADEMARK®, this comb-like conductor glides easily through the hair and maintains close contact with the scalp to deliver the benefits of the treatment product to the hair and hair follicles.
it	BRAND_NAME – Utilizzato in combinazione con TRADEMARK®, questo conduttore, simile a un pettine, scivola facilmente fra i capelli e mantiene il contatto con il cuoio capelluto per distribuire i benefici del prodotto ai capelli e ai follicoli

Benchmarks – Representative Set 20

source	fr
target	en
subject domain	medical
estimated corpus size	250,000
segments per representative set	2,381
words per source segment	15
words per target segment	13
GOOGLE – NMT	
words per MT segment	13
BLEU score	40.82
exact MT match (count)	267
exact MT match (percent)	11.2%
words per exact MT match (count)	5
filtered BLEU score (no exact MT matches)	38.78
segments requiring edit (count)	2,114
character edits per segment	29
total character edits	61,306
CUSTOMIZED – SMT	
words per MT segment	13
BLEU score	69.16
exact MT match (count)	897
exact MT match (percent)	37.7%
words per exact MT match (count)	9
filtered BLEU score (no exact MT matches)	60.19
segments requiring edit (count)	1,484
character edits per segment	26
total character edits	38,584

Benchmarks – Representative Set 20 (fr-en)	
GNMT – exact MT matches	
fr	L'interféron alpha (IFN) est une substance qui est produite en petites quantités par le corps humain.
en	Interferon alpha (IFN) is a substance that is produced in small amounts by the human body.
fr	Vous n'avez pas à noter le nombre de comprimés de xxxxxx et de yyyyyy pris ce jour-là.
en	You do not have to record the number of xxxxxx and yyyyyy tablets taken that day.
fr	J'autorise le recueil et l'utilisation de mes échantillons.
en	I authorize the collection and use of my samples.
CSMT – exact MT matches	
fr	Quoi qu'il en soit, les données recueillies dans le cadre de l'étude contribueront à la mise au point du XYZ123, qui pourrait être utilisé pour le traitement de l'hémophilie, et par conséquent, elles pourraient aider un jour d'autres patients atteints d'hémophilie.
en	In any event, the data collected in the context of the study will contribute to the development of the XYZ123, which could be used for the treatment of haemophilia, and consequently, they could one day help other patients with haemophilia.
fr	De même, il se peut que le médecin de l'étude considère qu'un épisode hémorragique associé à une perte de sang importante ou à une douleur intolérable, ou qu'un saignement qui survient dans une articulation, un muscle ou d'autres tissus mous est un épisode hémorragique sévère.
en	Similarly, the study doctor may consider that a bleeding episode associated with a significant blood loss or an intolerable pain, or bleeding that occurs in a joint, a muscle or other soft tissues is a severe bleeding episode.
fr	À la fin de l'étude, nous demanderons à votre enfant de cesser de prendre le médicament à l'étude, puis de se rendre au centre d'étude au bout d'environ 14 jours pour y effectuer la visite de fin d'étude.
en	At the end of the study, we will ask your child to stop taking the medicine under study, then to go to the study centre after about 14 days to carry out the end-of-study visit there.

Benchmarks – Representative Set 21

source	en
target	nl
subject domain	it-software
estimated corpus size	160,000
segments per representative set	2,366
words per source segment	14
words per target segment	13
GOOGLE – NMT	
words per MT segment	14
BLEU score	31.27
exact MT match (count)	69
exact MT match (percent)	2.9%
words per exact MT match (count)	7
filtered BLEU score (no exact MT matches)	30.38
segments requiring edit (count)	2,297
character edits per segment	30
total character edits	68,910
CUSTOMIZED – SMT	
words per MT segment	14
BLEU score	71.69
exact MT match (count)	997
exact MT match (percent)	42.1%
words per exact MT match (count)	10
filtered BLEU score (no exact MT matches)	60.18
segments requiring edit (count)	1,369
character edits per segment	26
total character edits	35,594

Benchmarks – Representative Set 21 (en-nl)	
GNMT – exact MT matches	
en	Please provide the recipient's shipping address in the next panel.
nl	Geef het verzendadres van de ontvanger op in het volgende paneel.
en	Replace the data on the cloud with the data on this computer.
nl	Vervang de gegevens in de cloud door de gegevens op deze computer.
en	Increases the iron production of adjacent iron mines.
nl	Verhoogt de ijzerproductie van aangrenzende ijzermijnen.
CSMT – exact MT matches	
en	if you believe that any action has been taken against your account or device in error, please contact customer support at help.ea.com, support.example.com (for example products) or example.com/support
nl	Indien u van mening bent dat er abusievelijk maatregelen tegen uw account of apparatuur zijn getroffen, neemt u contact op met de klantenservice via help.ea.com/nl, support.example.com (voor producten van example) of example.com/support
en	Visit your profile to view your recent activity and history, the amount of XX you have earned, and the amount of XX you need to reach the next level in ABC Life 15.
nl	Bezoek je profiel en bekijk recente activiteiten en geschiedenis, de hoeveelheid XX die je hebt verdiend en de hoeveelheid XX die je nodig hebt om het volgende niveau te bereiken in ABC LIFE.
en	If you choose to connect with friends on the application and you are "online," your friends will receive notifications about your activity, application usage and stats.
nl	Als u via de toepassing contact maakt met vrienden en u "online" bent, ontvangen uw vrienden meldingen over uw activiteit, toepassingsgebruik en statistieken.

Benchmarks – Representative Set 22

source	de
target	en
subject domain	contract
estimated corpus size	90,000
segments per representative set	2,344
words per source segment	21
words per target segment	21
GOOGLE – NMT	
words per MT segment	20
BLEU score	39.56
exact MT match (count)	101
exact MT match (percent)	4.3%
words per exact MT match (count)	7
filtered BLEU score (no exact MT matches)	38.8
segments requiring edit (count)	2,243
character edits per segment	45
total character edits	100,935
CUSTOMIZED – SMT	
words per MT segment	21
BLEU score	64.82
exact MT match (count)	572
exact MT match (percent)	24.4%
words per exact MT match (count)	11
filtered BLEU score (no exact MT matches)	59.98
segments requiring edit (count)	1,772
character edits per segment	45
total character edits	79,740

Benchmarks – Representative Set 22 (de-en)
GNMT – exact MT matches
de	Ärztliche Untersuchungen, Anforderungen für bestimmte Projektaktivitäten
en	Medical examinations, requirements for specific project activities
de	Kabelinstallations-Verfahrensanweisungen und -berichte
en	Cable installation procedures and reports
de	Sicherheitseinweisung auf dem Transferschiff
en	Safety briefing on the transfer ship
CSMT – exact MT matches
de	An dieser Stelle sei angemerkt, dass die Hilfssysteme der HGÜ-Stationen nach dem Produktaspekt der IEC 81346 (s. [IG-EVU-001]) und die Hochspannungsbetriebsmittel nach DIN 40719 gekennzeichnet werden.
en	It should be noted here that the auxiliary systems of the HVDC stations are designated according to the product aspect of IEC 81346 (see [IG-EVU-001]) and the high voltage equipment according to DIN 40719.
de	Bei drohenden oder eingetretenen Verstößen gegen Nebenbestimmungen der Genehmigung/des PFB oder gegen Rechtsvorschriften (insbesondere solchen zum Schutz von (Arbeits-)Sicherheit, Gesundheit und Umwelt) hat der CR folgende Aufgaben
en	In the event of impending or actual breaches of the ancillary provisions of the approval / the PAD or of legal provisions (especially those for safeguarding (occupational) safety, health and the environment), the CR has the following duties
de	Für die von dem Hersteller der Durchführungen vorgenommenen Routinetests müssen Blitzimpulstests (mindestens 3 x LI und 2 x LIC) für alle Kondensatordurchführungen vorgenommen werden (einschließlich 123 kV).
en	For the routine tests performed by the bushing manufacturer, lightning impuls tests (at least 3xLI and 2xLIC) must be performed for all capacitor bushings (including 123 kV).

Benchmarks – Representative Set 23

source	de
target	bg
subject domain	it-software
estimated corpus size	140,000
segments per representative set	2,365
words per source segment	14
words per target segment	14
GOOGLE – NMT	
words per MT segment	13
BLEU score	29.63
exact MT match (count)	72
exact MT match (percent)	3.0%
words per exact MT match (count)	6
filtered BLEU score (no exact MT matches)	28.78
segments requiring edit (count)	2,293
character edits per segment	35
total character edits	80,255
CUSTOMIZED – SMT	
words per MT segment	14
BLEU score	68.04
exact MT match (count)	842
exact MT match (percent)	35.6%
words per exact MT match (count)	10
filtered BLEU score (no exact MT matches)	57.3
segments requiring edit (count)	1,523
character edits per segment	30
total character edits	45,690

Benchmarks – Representative Set 23 (de-bg)	
GNMT – exact MT matches	
de	7. Aufwendungen für Zinsen sowie sonstige Finanzaufwendungen, einschl.
bg	7. Разходи за лихви и други финансови разходи, в т.ч.
de	Transportgurt oder –seil (keine Ketten verwenden)
bg	Транспортен колан или въже (не използвайте вериги)
de	Kann Spuren von Eiern, Milch und Soja enthalten.
bg	Може да съдържа следи от яйца, мляко и соя.
CSMT – exact MT matches	
de	Sämtliche Versorgungs- und Medienleitungen (Zu- und Abluft, Kaltwasserringleitung, Trinkwasser, Strom, Telefon (Euro ISDN!) etc.) bis an die Mietgrenze.
bg	Всички снабдителни тръбопроводи и тръбопроводи, по които протичат среди (приточен и отработен въздух, пръстеновиден тръбопровод за студена вода, питейна вода, ток, телефон (Euro ISDN!) и др.) до границата на наетия обект.
de	Obwohl die meisten Teile mit einem schützenden Anstrich versehen sind, muss die Maschine vor der Inbetriebnahme gründlich gereinigt werden, da ein Sägen mit verschmutzten Auflageflächen zu keinem guten Sägeergebnis führt.
bg	Въпреки, че по-големият брой части имат защитно покритие, машината трябва да се почисти основно преди да се пусне в експлоатация, тъй като рязането със замърсени опорни повърхности не води до получаването на добри резултати.
de	Die Hochdruckpumpe, die Wasserabsenkung und das Abrasiv- Entschlammungssystem sind direkt und nicht über die Schneidanlage gespiesen (Fremdeinspeisung).
bg	Помпата за високо налягане, снижаването на водата и системата за продухване на абразивния шлам се захранват директно, а не чрез инсталацията за рязане (външно захранване).

Benchmarks – Representative Set 24

source	en
target	pl
subject domain	medical
estimated corpus size	90,000
segments per representative set	2,344
words per source segment	17
words per target segment	16
GOOGLE – NMT	
words per MT segment	15
BLEU score	29.86
exact MT match (count)	109
exact MT match (percent)	4.7%
words per exact MT match (count)	4
filtered BLEU score (no exact MT matches)	29.33
segments requiring edit (count)	2,235
character edits per segment	47
total character edits	105,045
CUSTOMIZED – SMT	
words per MT segment	16
BLEU score	64.05
exact MT match (count)	563
exact MT match (percent)	24.0%
words per exact MT match (count)	13
filtered BLEU score (no exact MT matches)	55.89
segments requiring edit (count)	1,781
character edits per segment	38
total character edits	67,678

Benchmarks – Representative Set 24 (en-pl)	
GNMT – exact MT matches	
en	Endoscope (if desired)
pl	Endoskop (w razie potrzeby)
en	Polypropylene Mesh
pl	Siatka polipropylenowa
en	Camera Connector
pl	Złącze kamery
CSMT – exact MT matches	
en	Handling, storage, cleaning and sterilization of this instrument as well as other factors relating to the patient, diagnosis, treatment, surgical procedures, and other matters beyond BSC's control directly affect the instrument and the results obtained from its use.
pl	Obsługa, przechowywanie, czyszczenie i sterylizacja tego instrumentu, jak również inne czynniki dotyczące pacjenta, diagnozy, leczenia, procedur operacyjnych oraz inne kwestie niepodlegające kontroli firmy BSC mają bezpośredni wpływ na instrument i efekty jego stosowania.
en	Other potential adverse reactions that may result from the improper use of this device include, but are not limited to, air embolism, hematoma at the puncture site, infection, vessel dissection, vessel perforation, vessel spasm, hemorrhage and vascular thrombosis.
pl	Do innych możliwych działań niepożądanych związanych z nieprawidłowym zastosowaniem urządzenia należą między innymi: zator powietrzny, krwiak w miejscu nakłucia, zakażenie, rozwarstwienie naczynia, perforacja naczynia, skurcz naczynia, krwotok i zakrzepica naczyń.
en	Reuse, reprocessing or resterilization may also create a risk of contamination of the device and/or cause patient infection or cross-infection, including, but not limited to, the transmission of infectious disease(s) from one patient to another.
pl	Ponowne wykorzystanie lub przetworzenie bądź resterylizacja mogą również powodować ryzyko zanieczyszczenia urządzenia i/lub spowodować zakażenie lub zakażenie krzyżowe u pacjenta, w tym m.in. transmisję choroby zakaźnej (chorób zakaźnych) pomiędzy pacjentami.

Benchmarks – Representative Set 25

source	fr
target	en
subject domain	business
estimated corpus size	160,000
segments per representative set	2,367
words per source segment	24
words per target segment	21
GOOGLE – NMT	
words per MT segment	20
BLEU score	36.3
exact MT match (count)	118
exact MT match (percent)	5.0%
words per exact MT match (count)	5
filtered BLEU score (no exact MT matches)	35.73
segments requiring edit (count)	2,249
character edits per segment	45
total character edits	101,205
CUSTOMIZED – SMT	
words per MT segment	20
BLEU score	60.81
exact MT match (count)	541
exact MT match (percent)	22.9%
words per exact MT match (count)	11
filtered BLEU score (no exact MT matches)	55.82
segments requiring edit (count)	1,826
character edits per segment	41
total character edits	74,866

Benchmarks – Representative Set 25 (fr-en)	
GNMT – exact MT matches	
fr	Le cadre pour le climat et l'énergie à l'horizon 2030 a été adopté à l'unanimité par les dirigeants de l'UE en octobre 2014.
en	The 2030 climate and energy framework was unanimously adopted by EU leaders in October 2014.
fr	Si aucun obstacle n'est détecté, le programme sort de la sous-routine et retourne à la routine principale.
en	If no obstacle is detected, the program exits the subroutine and returns to the main routine.
fr	L'industrie de demain et la division de l'Europe
en	The industry of tomorrow and the division of Europe
CSMT – exact MT matches	
fr	Le nombre de diplômés de l'université pourrait augmenter de 30 % dans le scénario tendanciel si le potentiel d'actifs était exploité dans son intégralité en 2030. De manière similaire à l'autre scénario, une diminution de la proportion du nombre total de diplômés de l'université d'environ un point de pourcentage est attendue par rapport à la projection sans les sans-emploi.
en	The number of academics could increase by 30% in the trend scenario, if the full active potential were to be used in 2030. Similar to the other scenario, a decrease in the share of all academics by roughly one percentage point is expected, compared to the projection without the unemployed.
fr	Ces exigences sont liées à la promotion d'un niveau d'emploi élevé, à la garantie d'une protection sociale adéquate, à la lutte contre l'exclusion sociale ainsi qu'à un niveau élevé d'éducation, de formation et de protection de la santé humaine.
en	These requirements are linked to the promotion of a high level of employment, the guarantee of adequate social protection, the fight against social exclusion, and a high level of education, training and protection of human health.
fr	Si des cotisations ont été perçues, l'assureur s'engage à vous les rembourser dans un délai de 30 jours Si des prestations ont été versées, vous vous engagez à rembourser à l'assureur les montants perçus dans un délai de 30 jours.
en	Should premiums have already been paid, the insurer has the obligation to reimburse them within 30 days. If benefits have already been paid, you shall duly refund the amounts received to the insurer within 30 days.

Benchmarks – Representative Set 26

source	en
target	it
subject domain	contract
estimated corpus size	700,000
segments per representative set	2,393
words per source segment	20
words per target segment	23
GOOGLE – NMT	
words per MT segment	22
BLEU score	35.59
exact MT match (count)	129
exact MT match (percent)	5.4%
words per exact MT match (count)	6
filtered BLEU score (no exact MT matches)	34.9
segments requiring edit (count)	2,264
character edits per segment	52
total character edits	117,728
CUSTOMIZED – SMT	
words per MT segment	22
BLEU score	60.78
exact MT match (count)	534
exact MT match (percent)	22.3%
words per exact MT match (count)	12
filtered BLEU score (no exact MT matches)	55.72
segments requiring edit (count)	1,859
character edits per segment	44
total character edits	81,796

Benchmarks – Representative Set 26 (en-it)	
GNMT – exact MT matches	
en	The target return is based on a conservative estimate per annum across a market cycle of 5–7 years.
it	Il rendimento target si basa su una stima prudente per anno in un ciclo di mercato di 5-7 anni.
en	The purpose of the meeting in CITYwas to consolidate the ongoing dialogue between COMPANY and the consumer associations.
it	Lo scopo dell'incontro di CITY è stato quello di consolidare il dialogo in corso tra COMPANY e le associazioni dei consumatori.
en	Issues the document directly from the ZZZZZ system by accessing the system.
it	Emette il documento direttamente dal sistema ZZZZZ accedendo al sistema.
CSMT – exact MT matches	
en	The Committees internal to the Board, taking into account the specialisation which characterises them, carry out important activities related to the analysis, checking and researching of issues that are submitted to the Board of Directors, helping the Board to make decisions and making its activities more efficient without, in any case, limiting its powers and responsibilities.
it	I Comitati endo-consiliari, tenuto conto della specializzazione che li caratterizza, svolgono una rilevante attività di analisi, verifica ed approfondimento dei temi che vengono sottoposti al Consiglio di Amministrazione, agevolando lo stesso nell'assunzione delle deliberazioni e permettendo uno svolgimento più efficiente della sua attività, senza tuttavia limitarne i poteri e le responsabilità.
en	The decrease in personnel expenses is attributable to the reduction in the number of employed personnel that occurred in the period (from 571 at 31.03.2016 to the current 530); the figure is measured net of the resources related to the subsidiaries held for sale.
it	Il decremento delle spese per il personale è riconducibile alla riduzione del personale dipendente avvenuta nel periodo (da n. 571 unità al 31.03.2016 alle attuali n. 530 unità); il valore è misurato al netto delle risorse relative alle controllate in via di dismissione.
en	In 2016 the Bank continued to revise its operating loan model, already begun in previous years, with the objective of strengthening the level of efficiency and effectiveness in the monitoring of its loan portfolio.
it	Nel corso del 2016 la Banca ha proseguito il proprio percorso di revisione del modello operativo del credito, già attivato negli esercizi precedenti, con l'obiettivo di rafforzare il livello di efficienza e di efficacia nel presidio del portafoglio crediti.

Benchmarks – Representative Set 27

source	en
target	ar
subject domain	medical
estimated corpus size	100,000
segments per representative set	2,350
words per source segment	16
words per target segment	15
GOOGLE – NMT	
words per MT segment	14
BLEU score	16.35
exact MT match (count)	42
exact MT match (percent)	1.8%
words per exact MT match (count)	4
filtered BLEU score (no exact MT matches)	16.07
segments requiring edit (count)	2,308
character edits per segment	39
total character edits	90,012
CUSTOMIZED – SMT	
words per MT segment	15
BLEU score	57.32
exact MT match (count)	495
exact MT match (percent)	21.1%
words per exact MT match (count)	8
filtered BLEU score (no exact MT matches)	52.52
segments requiring edit (count)	1,855
character edits per segment	30
total character edits	55,650

Benchmarks – Representative Set 27 (en-ar)	
GNMT – exact MT matches	
en	Its main role is to help children adapt to their own motor abilities.
ar	دورها الرئيسي هو مساعدة الأطفال على التكيف مع قدراتهم الحركية الخاصة.
en	Proceed to the femoral shortening.
ar	انتقل إلى تقصير الفخذ.
en	short head of biceps femoris muscle
ar	الرأس القصير للعضلة ذات الرأسين الفخذية
CSMT – exact MT matches	
en	The drug is stopped at the time of hospital discharge if effective for prophylaxis.If the patient develops intermittent AF and converts, the drug may be continued for several weeks, with the dosage being weaned down to 200 mg qd, and stopped after 4&'96;6 weeks.
ar	يوقف استعمال الدواء عادة عند تخريج المريض من المشفى، أما إذا تطوّر لديه الرجفان الأذيني بشكل متقطّع فيُنصح بالاستمرار باستعمال الدواء لعدة أسابيع يتم خلالها خفض الجرعة إلى 200 ملغ/يوم، ويوقف استعمال الدواء بعد 4-6 أسابيع.
en	The initial settings are determined by the anesthesiologist and respiratory therapist and generally provide a tidal volume of 8 mL/kg at a rate of 8/min with the initial FIO2 set at 1.0.
ar	يقوم طبيب التخدير بتحديد معايير التهوية الآلية، والتي تقوم عادة بتقديم حجم جاري (مدّي) يعادل 8-10 مل/كغ بسرعة 8-10 حركات دقيقة مع fio2 بدئي 100%.
en	Because the forearm can be considered a joint,? responsible for motion, open reduction and internal fixation is the procedure of choice for displaced forearm fractures involving the radius and ulna in adults.
ar	لأنه يمكن اعتبار الساعد مفصل؟ مسؤول عن الحركة، فإن الرد المفتوح والتثبيت الداخلي هو الإجراء المفضل لكسور الساعد المتبدلة التي تشمل الكعبرة والزند في البالغين.

Benchmarks – Representative Set 28

source	en
target	it
subject domain	it-security
estimated corpus size	1,500,000
segments per representative set	1,295
words per source segment	11
words per target segment	11
GOOGLE – NMT	
words per MT segment	11
BLEU score	45.32
exact MT match (count)	137
exact MT match (percent)	10.6%
words per exact MT match (count)	6
filtered BLEU score (no exact MT matches)	42.65
segments requiring edit (count)	1,158
character edits per segment	16
total character edits	18,528
CUSTOMIZED – SMT	
words per MT segment	11
BLEU score	63.36
exact MT match (count)	383
exact MT match (percent)	29.6%
words per exact MT match (count)	9
filtered BLEU score (no exact MT matches)	51.73
segments requiring edit (count)	912
character edits per segment	19
total character edits	17,328

Benchmarks – Representative Set 28 (en-it)	
GNMT – exact MT matches	
en	For machines protected by a firewall, make sure that port 9876 is open.
it	Per le macchine protette da un firewall, assicurarsi che la porta 9876 sia aperta.
en	To start recovery of the factory settings, reboot the machine.
it	Per avviare il ripristino delle impostazioni di fabbrica, riavviare la macchina.
en	Specify the following settings to copy the created backup to the second location
it	Specificare le seguenti impostazioni per copiare il backup creato nella seconda posizione
CSMT – exact MT matches	
en	On the second computer that has Internet access, go towww.example.com/activation and submit the installation code to get your activation code.
it	Sul secondo computer che dispone di accesso a internet, visitare www.example.com e inviare il codice di installazione per ottenere il codice di attivazione.
en	If the "Log on as a service" privilege is restricted in the domain, specify an existing domain user account that has the "Log on as a service" privilege.
it	Se il privilegio " accedi come servizio " viene limitato al dominio, specificare un account utente di dominio esistente in possesso del privilegio " accedi come servizio ".
en	You can download the latest updates for all your registered software products from our Web site at any time after logging into youraccountand registering the product.
it	È possibile scaricare tutti gli aggiornamenti dei prodotti software registrati dal nostro sito web in qualunque momento dopo aver effettuato l'accesso al proprio account e aver registrato il prodotto.

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Benchmarks – Representative Set 29

source	en
target	fr
subject domain	finance
estimated corpus size	90,000
segments per representative set	2,339
words per source segment	14
words per target segment	18
GOOGLE – NMT	
words per MT segment	17
BLEU score	37.36
exact MT match (count)	48
exact MT match (percent)	2.1%
words per exact MT match (count)	9
filtered BLEU score (no exact MT matches)	36.81
segments requiring edit (count)	2,291
character edits per segment	35
total character edits	80,185
CUSTOMIZED – SMT	
words per MT segment	19
BLEU score	55.37
exact MT match (count)	467
exact MT match (percent)	20.0%
words per exact MT match (count)	9
filtered BLEU score (no exact MT matches)	51.13
segments requiring edit (count)	1,872
character edits per segment	29
total character edits	54,288

Benchmarks – Representative Set 29 (en-fr)	
GNMT – exact MT matches	
en	The employee is not entitled to the leave if charged with the crime.
fr	L'employé n'a pas droit au congé s'il est accusé du crime.
en	Select yes or no to indicate if the dependent is disabled.
fr	Sélectionnez Oui ou Non pour indiquer si la personne à charge est désactivée.
en	What do you enjoy most about working at XXXXX?
fr	Qu'est-ce qui vous plaît le plus dans votre travail chez XXXXX?
CSMT – exact MT matches	
en	The code must only contain numbers, letters from a to z, underscores (_), dashes (-) or the ampersand sign (&).
fr	Le code ne doit contenir que des chiffres, des lettres de A à Z, des traits de soulignement (_), des tirets (-) ou la perluète (&).
en	Your schedule will be 2 or 3 variable days per week, except in weeks where a public holiday falls on those days; you will then be required to work the prior business day.
fr	Votre horaire de travail sera de 2 ou 3 jours variables par semaine, sauf que les semaines où un jour férié tombe sur une de ces journées, vous travaillerez le jour ouvrable précédent.
en	When you hover over the stat holiday worked column, a tool tip displays informing you of which provInces observe this stat holiday and the date of the stat holiday.
fr	Lorsque vous placez votre curseur sur la colonne Heures travaillées un jour férié, un aide-mémoire vous informe de la province qui observe le jour férié ainsi que la date du jour férié.

Benchmarks – Representative Set 30

source	en
target	de
subject domain	automotive
estimated corpus size	102,000
segments per representative set	2,315
words per source segment	16
words per target segment	16
GOOGLE – NMT	
words per MT segment	16
BLEU score	37.96
exact MT match (count)	67
exact MT match (percent)	2.9%
words per exact MT match (count)	11
filtered BLEU score (no exact MT matches)	36.63
segments requiring edit (count)	2,248
character edits per segment	37
total character edits	83,176
CUSTOMIZED – SMT	
words per MT segment	16
BLEU score	69.4
exact MT match (count)	1,171
exact MT match (percent)	50.6%
words per exact MT match (count)	13
filtered BLEU score (no exact MT matches)	50.23
segments requiring edit (count)	1,144
character edits per segment	45
total character edits	51,480

Benchmarks – Representative Set 30 (en-de)	
GNMT – exact MT matches	
en	The calibrated pressure switch (HY_SafetyBrake_Pressure Switch Position) will signal an alarm if the control pressure falls below its calibration value during operation.
de	Der kalibrierte Druckschalter (HY_SafetyBrake_Pressure Switch Position) gibt einen Alarm aus, wenn der Steuerdruck während des Betriebs unter den Kalibrierungswert fällt.
en	The value of the measured force is displayed in [kN] for all four measurement points.
de	Der Wert der gemessenen Kraft wird für alle vier Messpunkte in [kN] angezeigt.
en	In addition, both parties are dependent on each other in both economic and political terms.
de	Darüber hinaus sind beide Parteien in wirtschaftlicher und politischer Hinsicht voneinander abhängig.
CSMT – exact MT matches	
en	For the final check, inch the slide to "0" degrees and check roller contact and bearing temperatures (record the numbers), repeat this check at 180 degrees.
de	Für die letzte prüfung stössel auf "0" grad einstellen und rollenkontakt sowie lagertemperaturen prüfen (werte aufzeichnen), diese prüfung bei 180 grad wiederholen.
en	The adjustment of the balancing cylinder results in changes in the cylinder pressure, in order to adapt the pressure to the weight of the tool (upper part of the die).
de	Die Verstellung des Ausgleichszylinders führt zu Änderungen des Zylinderdrucks, um den Druck an das Gewicht des Werkzeugs anzupassen (oberer Werkzeugteil).
en	The calibrated pressure switch (HY_SafetyBrake_Pressure Switch Position) will signal an alarm if the control pressure falls below its calibration value during operation.
de	Der kalibrierte Druckschalter (HY_SafetyBrake_Pressure Switch Position) gibt einen Alarm aus, wenn der Steuerdruck während des Betriebs unter den Kalibrierungswert fällt.

Benchmarks – Representative Set 31

source	en
target	de
subject domain	finance
estimated corpus size	250,000
segments per representative set	2,380
words per source segment	11
words per target segment	12
GOOGLE – NMT	
words per MT segment	12
BLEU score	18.64
exact MT match (count)	86
exact MT match (percent)	3.6%
words per exact MT match (count)	3
filtered BLEU score (no exact MT matches)	18.2
segments requiring edit (count)	2,294
character edits per segment	34
total character edits	77,996
CUSTOMIZED – SMT	
words per MT segment	11
BLEU score	63.05
exact MT match (count)	1,278
exact MT match (percent)	53.7%
words per exact MT match (count)	7
filtered BLEU score (no exact MT matches)	47.87
segments requiring edit (count)	1,102
character edits per segment	39
total character edits	42,978

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Benchmarks – Representative Set 31 (en-de)
GNMT – exact MT matches
en	What's going on?
de	Was ist los?
en	View invoice status by:
de	Rechnungsstatus anzeigen nach:
en	Security question 1:
de	Sicherheitsfrage 1:
CSMT – exact MT matches
en	When your listing ends successfully (either with a winning bid or with the buy it now option), ZZZZZZZ sends an end of auction email to notify the buyer to pay you.
de	Wenn ihre auktion erfolgreich beendet wurde (entweder durch ersteigern des artikels oder über die option jetzt kaufen), sendet ZZZZZZZ eine e-mail zum angebotsende, um den käufer zur zahlung aufzufordern.
en	To confirm you're the credit card owner, please send us a copy of your latest credit card statement that shows your name, address, and complete credit card number.
de	Um zu bestätigen, dass sie der inhaber der kreditkarte sind, senden sie uns bitte eine kopie ihrer letzten kartenabrechnung, aus der ihr name, ihre adresse und ihre vollständige kreditkartennummer hervorgehen.
en	Using a shipping service that can be tracked online (for example, usps or fedex), and send the materials to our reimbursement processing center at the following address:
de	Verwenden sie einen versandservice, der die möglichkeit zur online-nachverfolgung bietet (z.b. usps oder fedex), und senden sie das paket an unser rückerstattungsbearbeitungs-center. verwenden sie die folgende adresse:

APPENDIX III: Glossary of Benchmark Score Terms
This report uses these terms in the summary and benchmark tables as described here.

representative set
A set of segment pairs that are representative of a translator's daily work. Segment pairs are randomly selected and removed from a translator's translation memories.

The sets are not edited or manipulated to prioritize any particular kind of segment. The sets do not show evidence of any attempts to prioritize or manipulate the kinds of segments.

language pairs
The number of unique source-target language pairs in the survey.

source languages
The number of unique source languages in the survey.

target languages
The number of unique target languages in the survey.

subject domains
The number of unique subject domains in the survey.

total segments evaluated
The total number of segment pairs across all language pairs and subject domains that were evaluated in the survey.

(average) segments per representative sets
The number of segments in the representative set or the average number of segments across all representative sets in the summary.

average words per source segment
The average number of words per source segment in a representative sets or across all representative sets in the summary.

A value significantly lower than the summary average indicates the representative set likely has a disproportionately high number of short segments (terminology or glossary entries).

average words per target segment
The average number of words per target segment in a representative sets or across all representative sets in the summary.

A value significantly lower than the summary average indicates the representative set likely has a disproportionately high number of short segments (terminology or glossary entries).

estimated (average) CSMT corpus size

The estimated number of segment pairs in the corresponding CSMT corpus used to create the CSMT's predictive model or the average of all CSMT corpus sizes in the summary.

min

The minimum value related to the respective average size.

max

The maximum value related to the respective average size.

words per MT segment

The average number of words per segment generated by the respective MT system. Indicates how closely the MT system matches the number of words per human translated segment.

(cumulative) BLEU score

The cumulative *BLEU score* is a "likeness" measure between all of the MT segments and human reference translations in a set or the average of all cumulative *BLEU scores* across all representative sets in the summary.

To create the cumulative score, the BLEU algorithm first scores "likeness" between an MT segment and its reference segment. "Likeness" is based on preponderance of the same words in the same order. A score of zero "0" means no likeness. A score of "100" means the MT segment exactly matches its reference segment (below).

Then, the algorithm consolidates all segment scores into a cumulative *BLEU score* representing the "likeness" of the entire set. This cumulative *BLEU score* is conceptually similar to an average of all segment *BLEU scores* in the set, but computationally it is different.

exact MT match (segment count)

The number of MT segments that exactly match the reference segments, i.e. segments with *BLEU score* 100 and 0 edit-distance (Levenstein) score.

Segments in this category represent pure cognitive effort for the translator to identify them as correct, without need for mechanical work such as typing or dictation to edit them.

exact MT match (percent)

The percentage of *exact MT match* segments in a set or the average percent across all representative sets in the summary.

A high percentage score represent less work for a translator.

In APPENDIX II, GNMT scores range from 1.8% to 11.2%. CSMT scores range from 20.0% to 53.7%,

words per exact MT match (word count)

The average number of words per segment generated by the respective MT system for only the *exact MT match* segments.

MT technologies has the reputation of performing poorly for long sentences. The difference (delta) between the *words per MT segment* and *words per exact MT match* scores shows the amount of desegregation the MT system suffers with long segments.

A smaller delta is good and indicates the MT system performs better with longer segments.

filtered BLEU score (no exact MT matches)

A *BLEU score* recalculated after removing the *exact MT match* segments from a set.

Imagine a set of 10 sentence with BLEU scores (100, 100, 100, 100, 90, 65, 70, 80, 75, 40). The cumulative BLEU score (like average) is 73. A high cumulative *BLEU score* is considered good but it poorly represents the amount of editing work for a translator. Therefore, we divide scoring into two systems.

First, we report the percentage of segments that require zero editing, i.e. the exact MT match (percent) value above. In this case, 4 of the 10 sentences (40%) require no editing. Clearly, higher percents are better.

Then, we remove these segments and recalculate the *filtered BLEU score* scores using only the 6 segments that require editing. In this case, the BLEU drops from 73 (for 10 sentences) to 70 (for 6 sentences).

The *filtered BLEU score* is always equal to or lower than the cumulative BLEU score. This score represents the necessary editing work. Although higher BLEU scores are good, you also need to consider the delta between the cumulative *BLEU score* and the *filtered BLEU score*.

A small delta with a low percentage of *exact MT match* segments signals virtually every segment represents editing work for the translator.

A small delta with a high percentage of *exact MT match* segments signals the engine will likely serve the translator well.

A large delta with many *exact MT match* segments will result in a lower *filtered BLEU score*. This signals more editing work for a smaller number of segments. Therefore, it is not as serious as a low cumulative *BLEU score*.

segments requiring edit (segment count)

The difference between the *segments per representative sets* and the *exact MT match (count)*, i.e. the inverse of the *exact MT match (count)*.

A higher number indicates more work.

character edits per segment (Levenstein)

The average edit-distance (Levenstein) score per *segment requiring editing*.

The edit-distance (Levenstein) score represents the number of character edits that are needed to transform an MT segment into the reference segment. Therefore, this number represents the average number of character edits per segment to "fix" the MT segment.

Higher scores indicates more edit work is required. A score of zero (0) means the segment is an *exact MT match* and no edit work is required.

total character edits

The edit-distance (Levenstein) score for a set or the sum of all edit-distance scores across all representative sets in the summary.

A higher number indicates more edit work is required.