
AWS
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NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

AIM315

How the BMW Group uses AWS to streamline multilingual business processes

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What to expect?

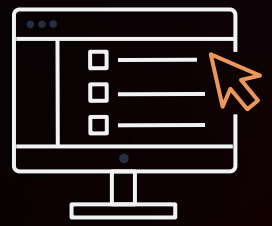
- Overview of Amazon Translate service
- BMW Group case study for customized translation
- Live whiteboarding of BMW Group solution
- Takeaway and next steps

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Amazon Translate: Neural machine translation service



Highly accurate, fluent, and contextual



Easy to integrate into your applications



Fully managed service that is continuously trained and scalable

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Amazon Translate key features



Broad language coverage

75 supported languages
5,550 X<>Y translation combinations
Language identification



Low latency

< 150 milliseconds/sentence on average
< 80 milliseconds/conversational/short form



Data security

Data ownership
Encryption
Access management



Broad regional coverage

Available in the 17 AWS Regions



Customizable translation

Customize translation output with custom terminologies and active custom translation



Document batch translation

Translates large set of docx, pptx, xlsx, XML, HTML, and text documents with one API call



Broad domain coverage

Trained on 11 domains



Pay per use

Simple API calls and you pay for what you use

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Deliver a versatile language experience

COMMON USE CASES



Localization

Enterprise content

Media subtitling

Archives



Communication

Customer engagement

In-game chat

Social media posts



Text analytics

Voice of customer

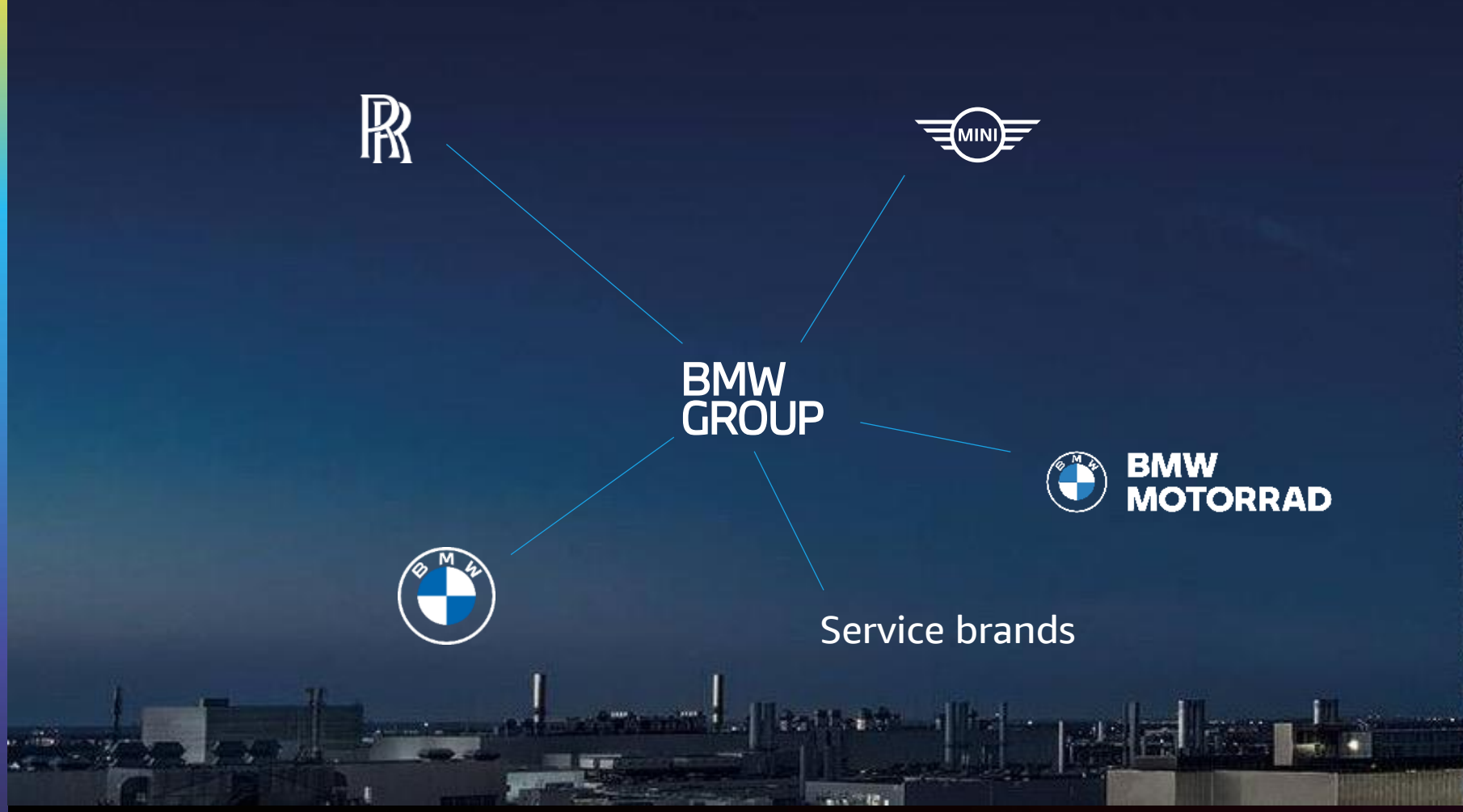
Media analysis

E-discovery

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BMW Group – We are a unique company with strong brands





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We believe we do more than moving people from A to B



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BMW GROUP MOVES BODY, HEART AND MIND.

Individual mobility goes beyond moving the body.
It's also about touching the heart and stimulating the mind.

This is why we are passionate about creating inspiring, uplifting and pleasurable experiences with the power to transform.

Through our actions we make a real difference to our collective future, demanding to be judged by what we do, not just what we say.







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Meet the BMW Group

BMW GROUP

FREUDE. FOREVER. | UPLIFTING LIVES | INSPIRING GREATNESS | MAKE LIFE A RIDE

~ 120,000 employees worldwide

~ 2,520,000 vehicles
sold in 2021

and the BMW Group IT



~ 8,200
Employees worldwide

In 29 countries

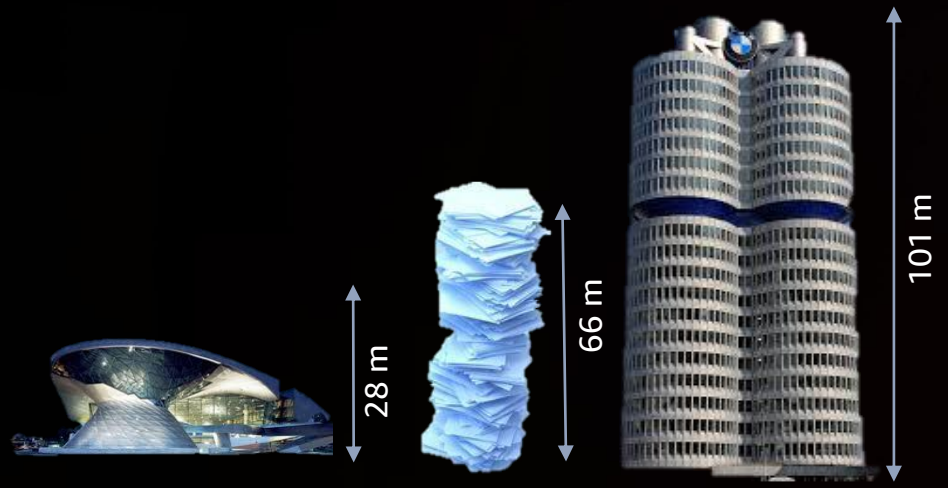
We want to drive the data and artificial intelligence (AI) transformation of the BMW Group and empower you to get your idea from a glimpse to production; we provide you with applications, platforms, and tools, as well as clear advisory and expert knowledge

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Translation at BMW Group

AREA OF QUALITY, SALES, AND CUSTOMER SUPPORT



212,000,000 translated words per annum
≙ 673.857 fully described A4-pages
≙ height of ca. 66 m



Translations in up to 35 languages

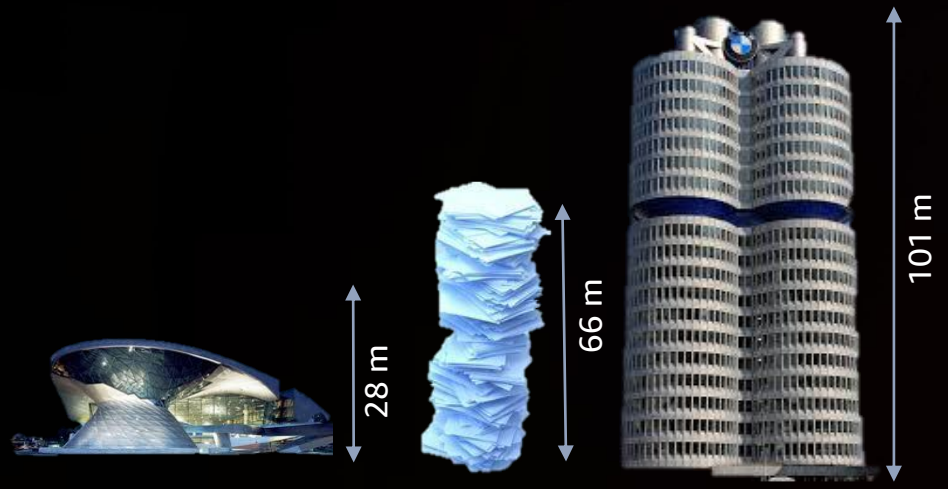


> 660,000 special terms
≙ approximately 4 German thesauruses
(approximately 145,000 words per book)

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Translation at BMW Group

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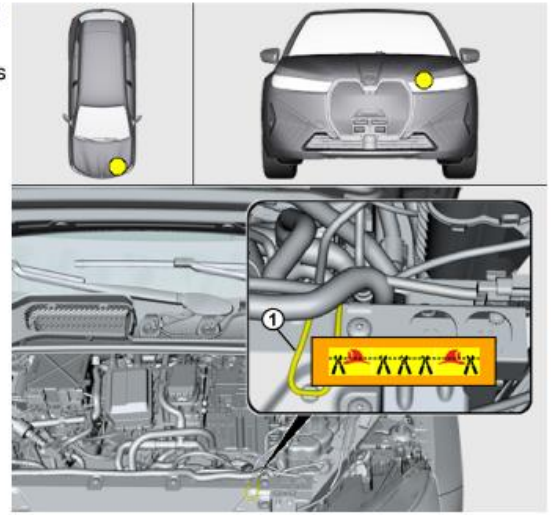
212,000,000 translated words per annum
≙ 673.857 fully described A4-pages
≙ height of ca. 66 m

3. Disable direct hazards / safety regulations

Procedure for deactivation

Standard method

1. Open bonnet. Bonnet release must be actuated to the left and right from the passenger compartment.
2. In order to simplify access to the passenger compartment, open windows before the 12 V power supply is disconnected.
3. Cut the low-voltage cable (1) marked with a label to deactivate the high-voltage system.



Alternative method

1. Open the tailgate and remove the service cover on the right-hand side.
2. Press the catch downwards and pull it out to disconnect current (2). Pull the connector apart in the direction of the arrow(3).
3. The high-voltage system is deactivated when the drilled hole (4) is completely visible.
4. Disconnect the 12 V battery.



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Machine translation is a key enabler to accelerate our processes along the value chain

Why

Extending human translation processes with customized MT

What

- **Accelerating** translation processes
- **Customized** translation
- Lower translation costs

How

- State of the art neural machine translation (NMT) methods
- **Latest cloud technologies** (robustness and high scalability)



Amazon Translate

Pros

- Custom translation on the fly with parallel data
- No training or retraining of individual models needed
- No hosting and deployment of own models
- Models are optimized and enhanced by AWS

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How does AWS accelerate the usage of machine translation at the BMW Group?



BMW group

Standardized machine translation solution for whole BMW Group

~ 900 million translated characters per year



Generic API

Generic translation API

- Synchronous
- Asynchronous
- Documents



Customized translation

Specialized translation considering domain specific terminology

1 model up and running

1 model in preparation



User interface

~ 21,000 users

More than half a million monthly translation requests



Data asset translation

Batch translations for all kinds of data assets

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A BMW Group translation example



- Many BMW Group specific terms and abbreviations
- Translation encompasses 11,250 words daily and needs to be provided to all BMW plants worldwide



~ 16,000 change requests per annum

```
BEA$$ Q202444
KTR$$ E2G740 DTKB     11.02.2021 05:00:29 **********
VORF G70 Bx8TUE2 S68T0 07/22 F* KML 1712
Typzulassungsrelevant nein
-------
PROBLEM

Notwendige Vorfreigabe des F* Umfang zum G70 SOP 07/22 in der KoGr
1712 Fa.TEKLAS
----------------
LOESUNG/SOLUTION

Durchfuehrung der Freigabe laut Konzept
--------------
NUTZEN/BENEFIT

Korrekte und fristgerechte Stuecklistenfreigabe
-----------------
KOMMENTAR/COMMENT
gAMS-relevant: Nein

KTR$$ E3R860 DTKB     11.02.2021 05:00:29 **********
GTF B58 ICE K1142 003/1153 005 M*
```

```
BEA$$ Q202444
KTR$$ E2G740 DTKB     11.02.2021 05:00:29 **********
Pr.rl 70Bx8TUE2 S68T007/22F*clnt ln 1712
Relevant for type approval: no
-------
PROBLEM

Required preliminary release of the F * volume for G70 SOP 07/22 in the
U.P.G. 1712 comp. TEKLAS
----------------
SOLUTION

Implementation of the release acc. to concept
--------------
BENEFIT

Correct and on-time parts list release
-----------------
COMMENT
gAMS-relevant: No

KTR$$ E3R860 DTKB     11.02.2021 05:00:29 **********
CPR B58 ICE K1142 003/1153 005 M *
```

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Source (German)	Translation (English)	Amazon Translate Customization
Beifahrer Airbag automatisch deaktiviert bei Nicht-Benutzung des Sitzes (Keine Lagerung von Gegenstaenden auf Beifahreresitz zulaessig)	Passenger airbag deactivated automatically when the seat is not used (no storage of objects is **permitted in the passenger seat**)	**Front** passenger airbag automatically deactivated when seat is not used (no storage of objects **on the front passenger seat permitted**)
Betroffene Triebwerke müssen ausgetauscht werden	Affected **engines** must be replaced	Affected **power plants** must be replaced
 Dafür wird ein Dreiklauenabzieher genutzt	A three-claw extractor is used for this	A three-claw extractor **tool** is used for this

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Amazon Translate customization options

Custom terminology

Enables you to make sure that your brand names, character names, model names, and other unique content is translated exactly the way you need it, regardless of its context and the Amazon Translate algorithm's decision

Example
From > **Could you please add this item to Amazon Wishlist?**
Without CT > **Könnten Sie diesen Artikel bitte zur Amazon-Wunschliste hinzufügen?**
With CT > **Könnten Sie diesen Artikel bitte zur Amazon Wishlist hinzufügen?**

Active custom translation

Enables you to add **parallel data** to Amazon Translate to customize the output of your batch translations jobs; with parallel data, you can tailor your translations for terms or phrases that are unique to a specific domain, such as life sciences, law, or finance

Example
From > **How are you doing?**
Without ACT > **Wie geht's dir?**
With ACT > **Wie geht es Ihnen?**

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Customization challenges

FEEDBACK AT BMW GROUP

Wrong or incomplete numbers

No BMW-specific terminology

Inconsistent translations of the same source word

Exchange of characters

Positioning of inline tags

Simple style of translation

Translation of URLs

Addition of punctuation, characters, or spaces

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BMW Group best practices to build up a high-quality training data set



Enforce data consistency

Enable automated validation of data format and usage of technical terms



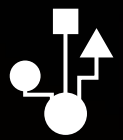
Data quality

Detect incorrect translations, provide solution for abbreviations and terms, apply named entity management, solve challenging abbreviation using custom terminology



Feedback-based approach

No audited training data, validation of specific datasets with low consistency



Data versioning

Tracking of data changes and origin of data samples for uniformed data structure across use case data immutability and experience repeatability

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Takeaway

Watch how BMW Group is using Amazon Translate

https://tinyurl.com/2p9yhvbx

Head start on similar solution at AWS Samples

https://tinyurl.com/4njv4r9m

Solution architects



- Engage with a solution architect dedicated to your account
- Brainstorm use cases and get support for solution implementation
- https://aws.amazon.com/contact-us/

ML solutions lab



- Identify key areas where machine learning could help you with an AWS AI expert
- Let AWS experts build POCs and custom solutions for your use case

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Thank you!

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