



BMW eInvoicing

EDI Implementation Guideline

ZUGFeRD 2.1
v.1.2



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Change History

Version	Summary of Changes	Date
1.0	MIG created / GoLive	04/03/2019
1.1	Additional BMW Company Codes – page 12 Updates BMW Unit Code addresses – page 13	30/11/2020
1.2	Additional BMW Company Code – page 12	17/09/2021



1.INTRODUCTION

This document is meant for BMW partners, who want to connect to eInvoicing platform. EDI Guideline is only further clarification of the ZUGFeRD 2.1 standard. The main objective of the document is to describe the principles of compatibility of documents created based on ZUGFeRD 2.1 standard with eInvoicing platform. The document highlights the parameters which are necessary in order to properly generate and route ZUGFeRD 2.1 messages according to eInvoicing platform compatibility requirements. Chapter sixth and seventh contains Message Implementation Guides (MIG).

This guideline is valid for ZUGFeRD **version 2.1**.

The BMW solution is backward compatible and can also process version 2.0.1 or 2.0.

ZUGFeRD **version 1.0** (different xml format) is available in a separate guideline.

Main principles of ZUGFeRD 2.1 EDI Implementation Guideline:

- 1 x PDF/A-3 = 1 invoice
- Parties identification
- Document versioning
- ZUGFeRD 2.1 Conformance level
- MIG of incoming invoice and MIG outgoing invoice containing data fields which are set of data possible for use in exchange of ZUGFeRD 2.1 invoices between BMW and partners.

Below is a glossary of terms:

Dictionary	
Routing	Routing is a process of identifying so called routing parameters in order to determine clearly and definitely relation between document sender and document receiver. Sender, receiver, conformance level and test indicator are input routing parameters. Based on them target format and communication channel are determined, which are output parameters. Each of those parameters can be determined dynamically, based on data contained inside message.
Document incoming	The document sent from partners to BMW
Document outgoing	The document sent from BMW to partners
BMW company code	Code assigned to BMW company by BMW
Partner number	Partner number assigned by BMW
MIG	Message Implementation Guideline



2. FORMAT PRINCIPLES

ZUGFeRD 2.1 is a message format published by FeRD (FeRD – Forum elektronische Rechnung Deutschland). The solution is based on UN/CEFACT XML Cross Industry Invoice (CII). Standard specification contains guideline with selected elements and qualifiers from CII format. The basic construction of ZUGFeRD 2.1 message consists of PDF/A-3 visualization of the invoice and embedded CII XML. Outgoing invoices from BMW directed to Partners are created in Extended profile by eInvoicing. Partners are allowed to send invoices to BMW **only in comfort (EN16931) and extended** profiles via eInvoicing, Basic profile of ZUGFeRD 2.1 invoices is not allowed and can't be processed from BMW.

ZUGFeRD 2.1 allows only one invoice per message.

ZUGFeRD 2.1 messages contain five key parts:

- Profiles part (comfort or extended)
- Header with invoice number, invoice date
- Parties with routing parameters like BMW company code
- Line item section with, for example price, amount and information about product
- Summary section

ZUGFeRD 2.1 is a PDF/A-3 carrier which packs XML invoice data together with the invoice visualization.

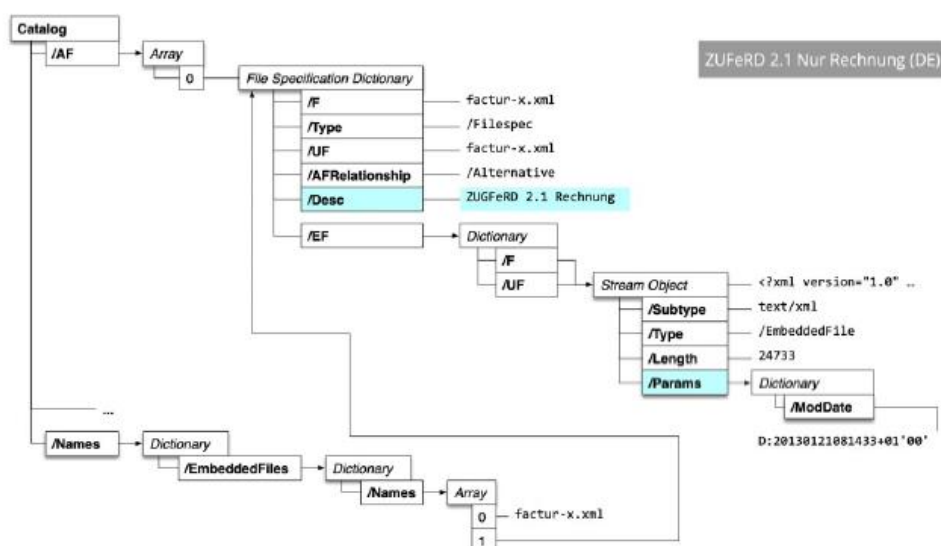
In order to make invoice compatible with ZUGFeRD 2.1, data relationship of the outgoing/incoming invoice has to be set to Alternative in PDF/A-3 structure. This data relationship is expressed by the AFRelationship tag.

In case of sending ZUGFeRD 2.1 CII (Cross Industry Invoice) XML the file of outgoing/incoming invoice has to be named exactly "**factur-x.xml**". BMW can also process the old version ZUGFeRD v2.0.1. The file name is "**zugferd-invoice.xml**" then. The file name is used for routing identification. The lack, state of not readability or incompleteness of verified file interrupts processing.



PDF/A-3 structure for embedding a ZUGFeRD 2.1 XML file is shown by picture:

See also supplement A in the general Zugferd 2.1 zip package (see also section 8)



Beside invoice xml file ZUGFeRD 2.1 allows to include **attachments**. Each attachment file name has to contain prefix ATT_n. Recommended naming convention for attachment of invoice in ZUGFeRD 2.1:

Prefix (Mandatory)	Time stamp (Optional)	Sender (Optional)	Receiver (Optional)	Message Id (Optional)	Extension (Mandatory)
ATT_1	CCYYMMDDHHMM SS <ul style="list-style-type: none"> Only digits No separators 	partner No or BWWC ompany Code	BWWComp anyCode or partnerNo	Globally unique identifier generate d by Partner	.pdf
<p>Example: ATT_1_20160917102300_10000310_A1_{ unique_identifier_generated_by_Partner }.pdf</p> <p>Input format of the attachment sent from Partner number 10000310 to BMW Company Code A1 on 20160917102300</p>					



Time stamp, sender, receiver and messageID are optional. The Partner is allowed to construct the file name of the attachment, as long as the prefix and extension are included.

Table: inbound ZUGFeRD 2.1 supported attachments and file extensions:

Document Type	Number of Documents	Mandatory/Optional	File Naming Convention and extension
ZUGFeRD 2.1 Invoice XML	1	Mandatory	ZUGFeRD 2.1-factur-x.xml
PDF Document	Up to 9 maximum optional documents	Optional	*.pdf
Word Document		Optional	*.doc / *.docx
Excel Document		Optional	*.xls / *.xlsx
PowerPoint Document		Optional	*.ppt / *.pptx
Bitmap Image		Optional	*.bmp
Portable Network Graphics		Optional	*.png
Graphics Interchange Format		Optional	*.gif
JPEG Image		Optional	*.jpg / *.jpeg
Tagged Image File Format		Optional	*.tif / *.tiff
Text File		Optional	*.txt
CSV File		Optional	*.csv
Maximum Attachments	10 (1 Mandatory and Up to 9 Optional)		



3. ROUTING PARAMETERS

There are certain routing parameters in the message content.

ZUGFeRD 2.1 message usually consists of PDF/A-3 with an embedded XML message; the format is Cross Industry Invoice. Parameters are extracted from the embedded XML <rsm:CrossIndustryInvoice>.

All fields, that can be used in the ZUGFeRD 2.1 format, are described in MIG incoming (chapter 6) and MIG outgoing (chapter 7).

The following tables define sources of data for the routing and message parameters in ZUGFeRD 2.1.

Profile (Conformance Level)

Format	Source field	Example values
ZUGFeRD 2.1	/rsm:CrossIndustryInvoice /ram:ExchangedDocumentContext/ GuidelineSpecifiedDocumentContextParameter / ram:ID	ram: urn:cen.eu:en16931:2017#conformant#urn:factur-x.eu:1p0: extended

The partner is allowed to send incoming invoices in ZUGFeRD 2.1 format with **comfort or extended** profiles. Documents in ZUGFeRD 2.1 format with **basic or minimum** profile are **not allowed** and not transferred by EDI.

BMW always sends outgoing ZUGFeRD 2.1 invoices in extended profile.

BMW is able to process incoming ZUGFeRD v2.0.1 and v2.0 too.

Format	Source field	Example values
ZUGFeRD 2.0.1	/rsm:CrossIndustryInvoice /ram:ExchangedDocumentContext/ GuidelineSpecifiedDocumentContextParameter / ram:ID	ram: urn:cen.eu:en16931:2017#conformant#urn: zugferd.de:2p0: extended

The string for profile comfort is equal for all versions: „urn:cen.eu:en16931:2017“



Invoice process

This parameter is designated to further distinguish type of the invoice, for example self billing invoice. Based on this configuration (channel / format) can be differentiated. Source fields for this parameter are:

Format	Source field	Example values
ZUGFeRD 2.1	/rsm:CrossIndustryInvoice/ rsm: ExchangedDocumentContext/ BusinessProcessSpecified DocumentContextParameter/ram:ID	CAN cancellation SBI self-billing invoice GUA guarantee FCS fix cost settlement REV revaluation CDN credit or debit Notes VHS vehicle settlement BPO bank posting BTS business trip settlement FCN freight credit notes MMS maintenance material settlement LTS literature settlement CNS cantine settlement GUF guarantee freight INF Information letter INC Incoming invoice

Values from this field must use the same set of invoice processes defined by BMW. In other words, partners must know the rules to classify invoices to properly engage in the invoice process with BMW.

Sender of the message

This parameter is used to determine the party which sends the message. As a general rule, partners must be identified by their respective partner numbers (in BMW systems). BMW affiliates must be identified by BMW company codes. Source fields for this parameter for invoice message are:

Format	Source field
ZUGFeRD 2.1	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram: ApplicableHeaderTradeAgreement / ram:SellerTradeParty/ram:ID



As a general rule, each message may contain only one sender.

Receiver of the message

This parameter is used to determine the party which receives the message. As a general rule, partners must be identified by their respective partner numbers (in BMW systems). BMW affiliates must be identified by BMW company codes. Source fields for this parameter for invoice message are:

Format	Source field
ZUGFeRD 2.1	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram: ApplicableHeaderTradeAgreement / ram:BuyerTradeParty / ram:ID



4. TEST INDICATOR

Some message types or formats may contain a test indicator, which distinguishes messages sent in test mode. This parameter may affect processing mode, in particular messages sent from partners in test mode are used exclusively for tests on the EInvoicing platform and are not forwarded to BMW.

Documents in production mode are only allowed to send without test indicator via production relation.

Test flag is required when Partner uses test transmission channel profile. Documents with test indicator are only allowed to send via test relation..

Example:

Test indicator	/rsm:CrossIndustryInvoice/rsmSpecifiedExchangedDocumentContext/ram:TestIndicator/udt:Indicator	true
----------------	--	------

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
<rsm:CrossIndustryDocument xmlns:rsm="urn:ferd:CrossIndustryDocument:invoice:1p0"
<rsm:SpecifiedExchangedDocumentContext>
<ram:TestIndicator>
<udt:Indicator>true</udt:Indicator>
</ram:TestIndicator>
```



5.ENCODING

UTF-8 is used for encoding ZUGFeRD 2.1 messages in eInvoicing. It is required to encode messages from the Partner as well.



6.MIG INCOMING

The implementation guideline for incoming ZUGFeRD v2.1 invoices is in the guideline zip package.

File name:

BMW_eInvoicing_EDI_Message_Implementation_Guideline_incoming_ZUGFeRD2.1_v1.2_EN.pdf

(Incoming - partner sends invoices to BMW)



7.MIG OUTGOING

The implementation guideline for outgoing ZUGFeRD v2.1 invoices is in the guideline zip package.

File name:

BMW_eInvoicing_EDI_Message_Implementation_Guideline_outgoing_ZUGFeRD2.1_v1.1_EN.pdf

(Outgoing: BMW sends invoices to Partner)



8.COMPLEMENTARY SOURCES

General information: http://www.ferd-net.de/front_content.php

Download: <https://www.ferd-net.de/standards/zugferd-2.1.1/index.html>

- General documentation, samples, schema, stylesheet

Containers:

see BMW_elInvoicing_EDI_Implementation_Guideline_CONTAINERS_v1.1.EN.pdf

9.EXAMPLE

9.1 Sample ZUGFeRD 2.1 XML incoming

Examples of elInvoicing compatible incoming ZUGFeRD v2.1 files are in the folder samples of the guideline zip package.

9.2 Sample ZUGFeRD 2.1 XML outgoing

Examples of elInvoicing compatible outgoing ZUGFeRD v2.1 files are in the folder samples of the guideline zip package.



10.CODE LISTS

10.1 BMW COMPANY CODE LIST

BMW Company Code	Company Name	street	city	postal code	country	VATID (EU) TAXID (NON EU)
A1	BMW AG	Petuelring 130	München	80809	DE	DE129273398
B7	BMW Fahrzeugtechnik GmbH	Stedtfel-der Str. 2	Krauthausen	99819	DE	DE811163085
C5	BMW Motoren GmbH	Hinterbergerstraße 2	STEYR	4400	AT	ATU41644903
FE	Rolls-Royce Motor Cars GmbH	Petuelring 130	München	80809	DE	GB800366563
LG	Rolls-Royce Motor Cars Limited	The Drive Westhampnett Chichester	West Sussex	PO18 0SH	GB	GB239354938
LY	BMW SLP S.A. de C.V.	Boulevard BMW 655	San Luis Potosi	C.P.795 26	MX	BSL140625TX1
MU	BMW (UK) Manufacturing Ltd.	Eastern Bypass Road	Oxford	OX4 6NL	GB	GB239354938
RK	BMW Mobility Development Center s.r.o.	Bucharova 2817/13	Praha	15800	CZ	CZ08082189
S5	BMW Österreich Holding GmbH	Hinterbergerstraße 2	STEYR	4400	AT	ATU24214703
UH	BMW Manufact Hungary Kft	Széchenyi utca 31	Debrecen	4025	HU	HU26531436
U0	BMW Hams Hall Motoren GmbH	Canton Lane Coleshill	Birmingham	B46 1GB	GB	GB239354938

10.2 BMW BUSINESS AREA CODE LIST

BMW AREA CODE	BMW AREA NAME
A1	Zentrale, Werke und Sparten
BC	BMW Classic



BX	Niederlassung Berlin
DG	Servicezentrum Dingolfing
DX	Niederlassung Düsseldorf
FX	Niederlassung Frankfurt
HH	Niederlassung Hamburg
HX	Niederlassung Hannover
LX	Niederlassung Leipzig
MX	Niederlassung München
NG	Niederlassung -Gesamt (PCO)
NX	Niederlassung Nürnberg
RX	Servicezentrum Regensburg
SX	Niederlassung Stuttgart
XA	Alpenhotel Ammerwald

10.3 BMW BUSINESS UNIT CODE LIST

Please note that the BMW Business Unit code can only be used in combination with the corresponding BMW Business Area code. In the following table you will find the BMW Business Area code from chapter 11.2 in the first column and the applicable BMW Business Unit Code in column 2.

A combination DG -> BXA is not possible and wrong.

A valid combination is BX -> BXA.

If the BMW Business Area code is A1, the Unit code is not needed.

BMW AREA CODE	BMW UNIT CODE	BMW BUSINESS UNIT NAME
BC	BCA	BMW Classic Moosacher Str. 66
BX	BXA	Niederlassung Berlin Kaiserdamm 90 / Hauptbetrieb
	BXB	Niederlassung Berlin Gehringstrasse 20
	BXD	Niederlassung Berlin Kaiserdamm 90 / Mini
	BXE	Niederlassung Berlin Blumberger Damm 2
	BXF	Niederlassung Berlin Kaiserdamm 90 / Motorrad Zentrum
DG	DGA	Servicezentrum Dingolfing Landshuter Str. 12
	DGB	Niederlassung Landshut Ohmstr. 2
	DGC	Niederlassung Dingolfing Karl-Dompert-Str. 7
	DGE	Niederlassung Dingolfing Landshuter Str. 12 / Motorrad Zentrum
	DGF	Niederlassung Moosthenning Gewerbefeld 4



DX	DXA	Niederlassung Düsseldorf Grafenberger Allee 277/258
	DXB	Niederlassung Düsseldorf Theodorstraße 279
	DXC	Niederlassung Düsseldorf BMW Motorradzentrum
	DXD	Niederlassung Bonn Vorgebirgsstrasse 95 / Hauptbetrieb
	DXE	Niederlassung Bonn Vorgebirgsstrasse 95 / Motorrad Zentrum
	DXF	Niederlassung Dortmund Nortkirchstrasse 111 / Hauptbetrieb
	DXG	Niederlassung Dortmund Nortkirchstrasse 111 / Motorrad Zentrum
	DXH	Niederlassung Essen Berthold-Beitz-Boulevard 508 / Hauptbetrieb
	DXK	Niederlassung Essen Berthold-Beitz-Boulevard 508 / Motorrad Zentrum
FX	FXA	Niederlassung Frankfurt Hanauer Landstraße 182/255
	FXB	Niederlassung Offenbach Spessarttring 9
	FXC	Niederlassung Frankfurt Hanauer Landstr. 182
	FXD	Niederlassung Dreieich Gustav-Otto-Strasse 1 / Motorrad Zentrum
	FXE	Niederlassung Dreieich Gustav-Otto-Strasse 1 / Gebrauchtwagenzentrum
	FXF	Niederlassung Darmstadt Marburger Str. 22
	FXM	Niederlassung Kassel Scharnhorststrasse 14
	FXN	Niederlassung Kassel Scharnhorststrasse 14 / Motorrad Zentrum
	FXS	Niederlassung Frankfurt Hanauer Landstrasse 182
HH	HHA	Niederlassung Hamburg Offakamp 10 / Hauptbetrieb
	HHB	Niederlassung Hamburg Süderstrasse 133
	HHC	Niederlassung Hamburg Friedrich-Ebert-Damm 120
	HHD	Niederlassung Barsbüttel Rahlstedter Strasse 4-10
	HHE	Niederlassung Hamburg Osdorfer Landstrasse
	HHG	Niederlassung Hamburg Offakamp 10 / Motorrad Zentrum
	HHH	Niederlassung Hamburg Bergedorfer Strasse 68
HX	HXA	Niederlassung Hannover Lister Kirchweg 87
	HXB	Niederlassung Hannover Meelbaumstrasse 3
	HXC	Niederlassung Hannover Lissabonner Allee 3 / EXPO Park
	HXD	Niederlassung Hannover Lissabonner Allee 3 / Motorrad Zentrum
	HXE	Niederlassung Göttingen Herbert-Quandt-Strasse 8
	HXF	Niederlassung Bremen Borgwardstrasse 4 / Hauptbetrieb
	HXG	Niederlassung Bremen Borgwardstrasse 4 – 6 / Motorrad Zentrum
LX	LXA	Niederlassung Leipzig Zwickauer Strasse 55 / Hauptbetrieb
	LXB	Niederlassung Leipzig Zwickauer Strasse 55 / Motorrad Zentrum
	LXC	Niederlassung Leipzig BMW Allee 1
	LXD	Niederlassung Chemnitz Röhrsdorfer Allee 3 / Hauptbetrieb



	LXE	Niederlassung Chemnitz Röhrsdorfer Allee 3 / Motorrad Zentrum
	LXF	Niederlassung Dresden Dohnaer Strasse 99 / Hauptbetrieb u. Gebrauchtwagen
	LXG	Niederlassung Dresden Dohnaer Strasse 99 – 101 / Motorrad Zentrum
MX	MXA	Niederlassung München Frankfurter Ring 35
	MXB	Niederlassung Garching-Hochbrück Daimlerstrasse 21
	MXD	Niederlassung München Riesenfeldstrasse 7
	MXE	Niederlassung München Drygalski-Allee 35
	MXF	Niederlassung München Werner-Heisenberg-Allee 10
	MXG	Niederlassung München Frankfurter Ring 35
	MXH	Niederlassung München Nordallee 62
	MXI	Niederlassung München Frankfurter Ring 29
	MXK	Niederlassung Garching-Hochbrück Zeppelinstrasse 5
	MXV	Niederlassung München Ingolstädter Straße 172
NX	NXA	Niederlassung Nürnberg Witschelstrasse 60-62
	NXB	Niederlassung Nürnberg Kilianstrasse 181
	NXC	Niederlassung Nürnberg Witschelstrasse 60
	NXE	Niederlassung Nürnberg Regensburger Strasse 420
	NXS	Niederlassung Nürnberg Witschelstrasse 59
RX	RXA	Servicezentrum Regensburg Herbert-Quandt-Allee
SX	SXA	Niederlassung Stuttgart Untere Waldplätze 3
	SXB	Niederlassung Stuttgart Pragstrasse 140
	SXC	Niederlassung Stuttgart Pascalstr. 1
	SXD	Niederlassung Mannheim Neckarauer Strasse 164
	SXE	Niederlassung Mannheim Inselstrasse 2
	SXG	Niederlassung Saarbrücken Am Halberg 6-7
	SXH	Niederlassung Saarlouis Schanzenstrasse 20
	SXK	Niederlassung Saarbrücken Am Halberg 6-7
	SXL	Niederlassung Kirkel Konrad-Zuse-Str. 1
XA	XA	Alpenhotel Ammerwald