


<b>VDA</b>	<b>Recommendation on the transmission of attachments and signatures with EDIFACT messages</b>	<b>4983</b>
<p>This VDA recommendation was developed by Communications and Information Technologies Committee (AK KIT) to define a common framework for the transmission of structured data in the form of EDIFACT messages along with other supporting documents or electronic signatures. It enables the application of structured data transfer processes that previously could only be handled with paper documents. This recommendation aims at facilitating a consistent and efficient implementation of these processes in the German automotive industry.</p> <p><b>Version 1.0 of March 2012</b></p>		
<b>Communications and Information Technologies Committee (AK KIT)</b>		
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## Introduction

VDA member companies use UN/EDIFACT messages for the structured transmission of logistical and commercial documents. These structured messages can be processed in the target system without additional manual effort. They thus enable a high level of integration and automation of business processes.

For some of the relevant processes, however, it is often necessary to transmit other documents in addition to the structured data and to provide these documents to the responsible staff in the course of further processing the operation. Auditing is one of the most important of these processes, but documents as attachments to structured data are also desirable in ordering processes and other transactions. Today, such situations require mostly a fully manual transmission and editing or the time-consuming and error-prone subsequent assignment of documents that are received by fax, email or post, into information that can be automatically transferred to the target system.

When using EDIFACT messages for the transmission of invoicing data according to VDA 4938 Part 2, the current legislation of some States requires that the transmitted data also be provided with electronic signatures, in order to be able to prove by technical means the origin of the data and integrity of the content.

This recommendation describes a procedure which carries out both of the requirements mentioned in a consistent technical implementation. It is based on well-known procedures and standards, to ensure a simple technical implementation and maximum acceptance.

The recommendation aims at promoting a uniform implementation in the German automotive industry, in order to minimize development and adjustments for all companies involved and ensure maximum interoperability of systems.

## 1. Recommendation on the transmission of EDIFACT messages with attachments

For the transmission of UN/EDIFACT messages with attachments, it is recommended to embed the EDIFACT message and all attachments related to this message in a StandardBusinessDocument according to the technical specification of the UN/CEFACT "Standard Business Document Header"<sup>1</sup> Version 1.3.

The Standard Business Document is an XML container, in which the Standard Business Document Header (SBDH) is used for the contents of the transmission file. This is followed by the EDIFACT message and the corresponding attachments (see Figure 1).

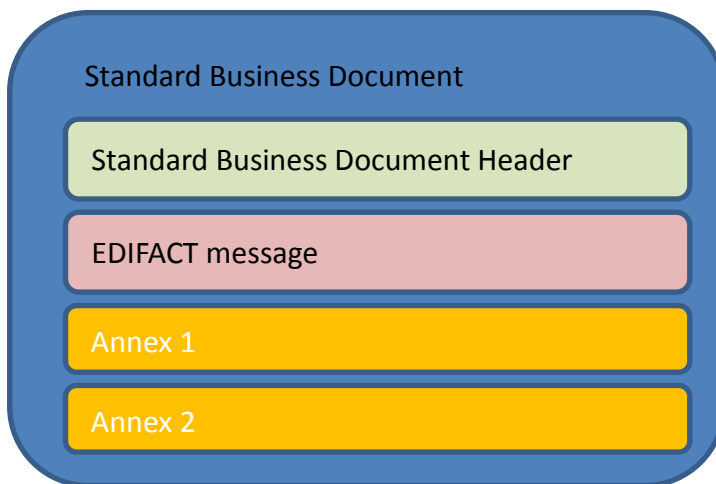


Figure 1 Structure of a standard business documents in accordance with this recommendation

The EDIFACT part includes the complete structure of EDIFACT data exchange:

- UNA – segment (optional)
- UNB – segment (interchange header)
  - UNH – segment (message header)
  - BGM – segment (start of message)
  - .... More segments of the message
  - UNT – message trailer
- UNZ – interchange trailer

A SBDH is used alongside the attachments for an EDIFACT message, so that allocation of the attachments to the message is clear from the structure of the file. The sequence of the segments illustrated above may therefore contain only **one** sequence of UNH...UNT (equal to a message). In case of transfer with transmission protocols usual for EDI (e.g. OFTP / OFTP2) such a Standard Business Document constitutes a stand-alone interchange file.

Both EDIFACT file and attachments are transmitted as base64 data, so that the character set used for the XML container is entirely uncoupled from the character set used for EDIFACT.

<sup>1</sup> [http://www.uncefactforum.org/ATG/atg\\_news\\_download.htm](http://www.uncefactforum.org/ATG/atg_news_download.htm)

The sender is free to select the technical means for putting together the interchange file on its side; however, it has to ensure the correct allocation of the attachment. In this process, the EDIFACT message must always be inserted in the file as first base64-encoded object.

The receiver is free to choose the means with which the separation of machine readable components (EDIFACT message) and their automated processing takes place in the typical EDI processes and how the end user is provided with the relevant attachments.

In accordance with normal compliance requirements, the complete container along with the transmission protocol should be archived on both sender and receiver side.

A detailed technical description of the underlying XML schemas and a sample file are attached in Annex 1.

Notes:

- Both sides must agree which attachment types (file types) may be used and how large individual attachments may be.
- A check should be done for malicious software or components before sending and receiving data.
- This procedure is intended for the transmission of messages with attachments. The transmission of pure EDIFACT remains unaffected hereby.
- The procedure **can** also be used for messages without attachments (see Fig. 3).
- If necessary, measures should be provided for the prioritization of message processing, to prevent messages with large attachments from interfering with the processing of other, time-sensitive messages.
- The use of this technique should be explicitly specified in the EDI Agreement between the partners, including the contact person to be informed in the event of a fault. Errors in attachments usually lead to the rejection of the processing of the entire message.

An exemplary process flow for the processing of incoming messages with attachments is shown in Figure 2.

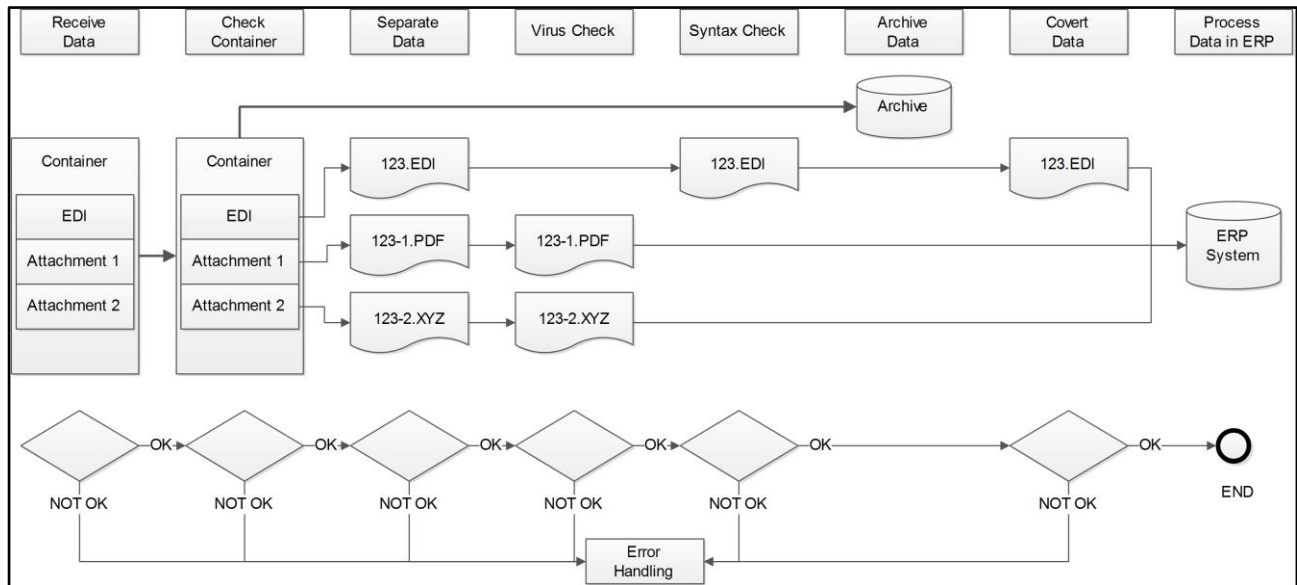


Figure 2 Example process flow of input processing of invoices with attachments

For the purpose of unifying processes, the partners are free to use this format also for exchanges of invoice messages in batches. In this case, the EDIDACT interchange file contains multiple messages of the message type INVOIC. In this variation, however, **no attachments** may be included (see Fig. 3).

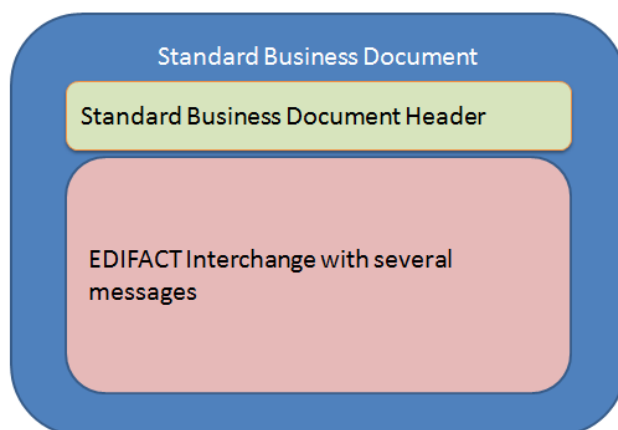


Figure 3

## 2. Recommendation on the use of signatures to ensure the authenticity and integrity of structured data transmitted with UN/EDIFACT

In some countries of the European Union, the transposition of VAT Directive 2006/112 of the European Commission into national legislation included the requirement of a digital signature to ensure the authenticity of origin and integrity of the content of the electronic invoice. This results in the requirement in these countries to also sign the invoice data transmitted via UN/EDIFACT message INVOIC according to VDA 4938 Part 2. These requirements also exist in other, non-EU States.

Regardless of these legal requirements, business partners can also agree on the use of electronic signatures for other reasons, e.g. contractual arrangements.

The following describes how this requirement can be taken into account in a uniform procedure when using UN/EDIFACT messages. This recommendation explicitly does not refer to the nature of the signatures used, the origin of the used certificates and the like. In this respect, reference is made to the applicable legislation in the country of use.

### Recommendation

It is recommended, when using signatures associated to structured data transmitted via UN/EDIFACT, to embed the data in an XML container StandardBusinessDocument as EDIFACT transmission file according to the technical specification of the UN/CEFACT "Standard Business Document Header" Version 1.3 and to sign this container. The signature process used is the procedure for the use of digital signatures in XML documents in accordance with the W3C recommendation "XML Signature Syntax and Processing (Second Edition)", known as XMLDsig.<sup>2</sup> This technique is widely used and is supported by popular commercial software solutions as well as various programming libraries.

The procedure may be used both for containers that contain pure EDIFACT data as well as for containers with EDIFACT data plus attachments referred to in Chapter 1 of this recommendation. In the first case, the transfer file can contain multiple invoice documents; in the latter case, the limitations set out in Chapter 1 apply (see also Fig. 4).

The verification of the validity of the signature and the integrity of the content, as well as the archiving of appropriate verification data are responsibility of the receiver, in accordance with the applicable statutory or contractual provisions, and are not included in this recommendation. These steps are part of the process "Check container" in the sequence diagram (Fig. 2).

A sample file is attached in Annex 2.

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<sup>2</sup> <http://www.w3.org/TR/xmlsig-core/>



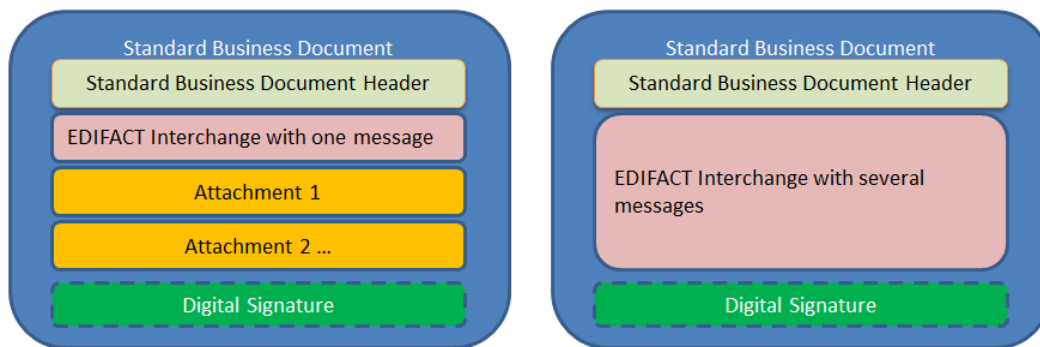


Figure 4

### 3. Annexes

1. Technical description of the container format SBDH and sample file of EDIFACT invoice with attachments
2. Sample file for a signed EDIFACT invoice
3. XML schema (XSD file)