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**Elektronsko izdajanje računov - 3-3. del: Povezava sintakse EN 16931-1 z UN/CEFACT XML industrijskim računom**

Electronic invoicing – Part 3-3: Syntax binding of EN 16931-1 to UN/CEFACT XML Industry Invoice

Sample Document

**Ta slovenski standard je istoveten z: FprCEN/TS 16931-3-3**

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**ICS:**

03.100.20	Trgovina. Komerzialna dejavnost. Trženje	Trade. Commercial function. Marketing
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TECHNICAL SPECIFICATION  
SPÉCIFICATION TECHNIQUE  
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**FINAL DRAFT**  
**FprCEN/TS 16931-3-3**

February 2026

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ICS

English Version

## Electronic invoicing - Part 3-3: Syntax binding of EN 16931-1 to UN/CEFACT XML Industry Invoice

This draft Technical Specification is submitted to CEN members for Vote. It has been drawn up by the Technical Committee CEN/TC 434.

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Ref. No. FprCEN/TS 16931-3-3:2026 E

## FprCEN/TS 16931-3-3:2026 (E)

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## European foreword

This document (FprCEN/TS 16931-3-3:2026) has been prepared by Technical Committee CEN/TC 434 “Electronic invoicing”, the secretariat of which is held by NEN.

This document is currently submitted to the Vote on TR.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2014/55/EU [1] and Council Directive 2006/112/EC [2].

This document will supersede CEN/TS 16931-3-3:2017.

This document is part of a set of documents, consisting of:

- EN 16931-1:2026 Electronic invoicing - Part 1: Semantic data model of the core elements of an electronic invoice
- CEN/TS 16931-2:2017, Electronic invoicing - Part 2: List of syntaxes that comply with EN 16931-1
- CEN/TS 16931-3-1:2026, Electronic invoicing - Part 3 - 1: Methodology for syntax bindings of the core elements of an electronic invoice
- CEN/TS 16931-3-2:2026, Electronic invoicing - Part 3 - 2: Syntax binding for ISO/IEC 19845 (UBL) invoice and credit note
- CEN/TS 16931-3-3:2026, Electronic invoicing - Part 3 - 3: Syntax binding for UN/CEFACT XML Cross Industry Invoice
- CEN/TS 16931-3-4:2026, Electronic invoicing - Part 3 - 4: Syntax binding for UN/EDIFACT INVOIC
- CEN/TR 16931-4:2017, Electronic invoicing - Part 4: Guidelines on interoperability of electronic invoices at the transmission level
- CEN/TS 16931-5:2026, Electronic invoicing - Part 5: Guidelines on the use of sector or country extensions in conjunction with EN 16931-1, including a methodology to be applied in the real environment
- CEN/TR 16931-6:2017, Electronic invoicing - Part 6: Result of the test of the European standard with respect to its practical application for an end user - Testing methodology
- CEN/TR 16931-7, Electronic invoicing - Part 7: Methodology for the development and use of EN 16931-1 compliant structured Core Invoice Usage Specifications
- CEN/TR 16931-8, Electronic invoicing - Part 8: Semantic data model of the elements of an e-receipt or a simplified electronic invoice
- CEN/TR 16931-9, Electronic invoicing - Part 9: VAT reporting and gap analysis with current e-invoicing standardization deliverables
- CEN/TR 16931-10, Electronic invoicing – Part 10: Additional requirements to extend to B2B

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

## FprCEN/TS 16931-3-3:2026 (E)

### Introduction

The European Commission estimates that “The mass adoption of e-invoicing within the EU would lead to significant economic benefits and it is estimated that moving from paper to e-invoices will generate savings of around EUR 240 billion over a six-year period” [3]. Based on this recognition “The Commission wants to see e-invoicing become the predominant method of invoicing by 2020 in Europe.”

As a means to achieve this goal, Directive 2014/55/EU [1] on electronic invoicing in public procurement aims at facilitating the use of electronic invoices by economic operators when supplying goods, works and services to the public administration (B2G), as well as the support for trading between economic operators themselves (B2B). In particular, it sets out the legal framework for the establishment and adoption of a European standard (EN) for the semantic data model of the core elements of an electronic invoice (EN 16931-1).

The semantic data model of the core elements of an electronic invoice – the core invoice model – as described in EN 16931-1 is based on the proposition that a limited, but sufficient set of information elements can be defined that supports generally applicable invoice-related functionalities.

This CEN Technical Specification CEN/TS 16931-3-3 defines the binding of the core elements of the invoice to UN/CEFACT XML. Other subparts of this CEN Technical Specifications define the binding method (CEN/TS 16931-3-1) and map the core invoice model to other syntaxes such as UBL XML (CEN/TS 16931-3-2) and ISO/IEC 9735 (UN/EDIFACT) (CEN/TS 16931-3-4).

By ensuring interoperability of electronic invoices, the European standard and its ancillary European standardization deliverables will serve to remove market barriers and obstacles to trade deriving from the existence of different national rules and standards – and thus contribute to the goals set by the European Commission.

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## 1 Scope

This document specifies the mapping between the semantic model of an electronic invoice, included in EN 16931-1 and the Cross Industry Invoice in the UN/CEFACT XML syntax. For each element in the semantic model (including sub-elements or supplementary components such as Identification scheme identifiers) it is defined which element in the syntax is to be used to contain its information contents. Any mismatches between semantics, format, cardinality or structure are indicated.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 16931-1, *Electronic invoicing - Semantic data model of the core elements of an electronic invoice*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### **Electronic Invoice**

invoice that has been issued, transmitted and received in a structured electronic format which allows for its automatic and electronic processing

[SOURCE: Directive 2014/55/EU [\[1\]](#)]

### 3.2

#### **Information Element**

smallest unit of data that is used to represent an item of information within an Electronic Invoice

Note 1 to entry: The EN identifies these elements using Business Terms (BTs). In EN 16931-1 section 6.3 is a table of information elements contained in the Core Invoice Model.

### 3.3

#### **Structured Information Element**

information element that can be processed automatically

### 3.4

#### **Business Term**

label assigned to a given information element which is used as a primary reference

### 3.5

#### **Business Terms Group**

group of related Business Terms

Note 1 to entry: BTs can be aggregated within Business Terms Groups (BGs). For example, the BG Seller contains all the information elements needed to describe the entity that is selling the good or service. BG Seller also contains its own BGs such as address and contact i.e. BG Seller acts as a parent Group to child Groups for addresses and contact details that are related to the Seller.

### 3.6

#### **Semantic Data Model**

structured set of logically interrelated information

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### 3.7

#### **Core Invoice Model**

semantic data model of the Core Elements of an Electronic Invoice

Note 1 to entry: The model contains the Core Elements of an Electronic Invoice – see EN 16931-1 Clause 4 for a more detailed explanation. The Core Invoice Model is composed of mandatory information elements that every invoice shall contain along with conditional elements that can be used when required.

### 3.8

#### **Core Elements of an Electronic Invoice**

set of information elements that most Electronic Invoices contain in order to enable interoperability, including the necessary information to ensure legal compliance

### 3.9

#### **Extended Information Element**

information element within the Scope for Extensions but outside the Core Invoice Model

Note 1 to entry: Extended Information Elements are sometimes informally referred to as extensions in other documents.

### 3.10

#### **Core Invoice Usage Specification (CIUS)**

specification that provides detailed guidance, explanations, and examples, as well as rules (business rules) related to the actual implementation and use of structured information elements present in the Core Invoice Model in a specific trading situation

### 3.11

#### **Core Invoice Instance Document**

instance of an Electronic Invoice that is conformant with the Core Invoice Model

### 3.12

#### **Extension Specification**

specification describing the use of Extended Information Elements to the Core Invoice Model that can reuse Extension Components

Note 1 to entry: An Extension Specification is intended to be published in the eInvoice Registry. It is typically written by a Representative/Representatives of a Sectoral Organisation for its members to describe an Invoice that includes the Core Semantic Model elements, Extension Components, and other elements needed for business.

Note 2 to entry: The resulting invoice model contains information elements that do not form a strict subset of the Core Invoice Model. An Extension Specification can also provide additional explanations and examples.

### 3.13

#### **Identifier**

character string used to establish the identity of, and distinguish uniquely, one instance of an object within an Identification Scheme from all other objects within the same scheme

Note 1 to entry: An Identifier may be a word, number, letter, symbol, or any combination of those, depending on the Identification Scheme used.

### 3.14

#### **Identification Scheme**

collection of Identifiers applicable for a given type of object governed under a common set of rules

**3.15****Compliant**

meets all the legal requirements and follows all the legal rules of any Directive associated with the standard, particularly the VAT Directive

**3.16****Core Conformant**

respect of all the normative rules of the Core Invoice Model

Note 1 to entry: A Core Conformant instance is not expected to throw any error when using CEN/TC434/WG3 validation artefacts for the Core Invoice Model.

**3.17****Syntax**

machine-readable format used to represent the information elements contained in an Electronic Invoice instance

Note 1 to entry: CEN/TS 16931-2 contains the list of syntaxes that comply with EN 16931-1 and that are mandatory for public bodies in the European Union.

**4 Syntax binding to the UN/CEFACT XML Cross Industry Invoice****4.1 Introduction**

One part of the basis for the European Core Data Model are the CEN MUG CWAs which are a subset of Cross Industry Invoice (CII) [4]. UN XML standards are developed within UN/CEFACT. This guarantees an international focus, openness in the process and free usage, as this is the mission of UN/CEFACT [5] and the policy of UNECE as a global standardisation body. For all published specifications and standards the Intellectual Property Rights (IPRs) are owned by the UN, and as such are open for free use by everyone. UN/CEFACT XML and all underlying standards (i.e. Core Component Methodology, Library, Message Assembly, XML Naming & Design Rules) are maintained on a regular basis by UN/CEFACT, within the United Nations framework of the Economic and Social Council, the United Nations Economic Commission for Europe (UNECE). The maintenance process is documented, applied and governed. All relevant procedural documents are available. Open participation for all interested stakeholders is ensured through the national delegations, which are usually connected to the national standards bodies. Also recognised organisations are able to participate in the development and maintenance process. UN/CEFACT standards are actively used worldwide in various sectors like Agriculture, Transport & Logistics, B2G EProcurement and cross-sector applications in different regions (APAC, US, Europe, LatAm).

Apart from Invoice (CII) implementations, UN/CEFACT standards are implemented within the US Department of Defense. Within the global GS1 Community UN/CEFACT XML is used (apart from EANCOM & GS1 XML) in several countries worldwide. In other industries and domains CII and UN/CEFACT syntax has been adopted as well, e.g. Japan, Taiwan (Single Window for reference WCO DATA MODEL and UN/CEFACT XML & UNTDED) or Korea (cross industry tax e-invoice is obligation of law).

CII, as part of cross-sector supply chain processes is implemented in various European countries, e.g.

- French Public eInvoking Platform (CHORUS)
- German B2B and B2C core invoice standard (Factor-X/ZUGFeRD)

UN/CEFACT provides the relevant standards and guidelines on their website.

Support to the implementers and users is provided through other standardisation bodies (e.g. CEN, GS1), user communities, experts who are members of a national delegation at UN/CEFACT, etc. which building their recommendations/guidelines upon published UN/CEFACT standards.

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UN/CEFACT offers the CCBDA CCL message assembly methodology as guideline on how to modify the underlying data model to enable subsetting. Applying the respective naming and design rules the syntax becomes restricted or extended.

CCBDA supports message assembly and message contextual customisation based on the Reference ABIE Library of the CCL. It is important to explain that extension is supported within the bounds of those reference ABIEs and, of course, submissions to extend any ABIE can be submitted to Library Maintenance for future inclusion. The aim is a controlled mechanism on extensions in order to facilitate interoperability.

In order to facilitate an easy, sustainable, and effective implementation of the EN, the syntax mapping is aligned with the most current to D25A compatible version of the Cross Industry Invoice XML. This version contains two sets of schemas. One with coupled code list modules that allow a one-step validation for the UN/CEFACT Standard; the second with decoupled code list modules. This second set of schemas (decoupled) must be taken as code lists are being updated every 6 months at a EU website [6].

### 4.2 CII XML versions

This Syntax binding is based on UN/CEFACT SCRDM D25A. Although it is not restricted to a specific UN/CEFACT XML version, only CII D25A and any subsequent Dxxx version have all syntax elements which are needed for the current revision EN 16931-1:2026.

The old EN 16931-3-3:2017 was based on CII D16B. Later versions of UN/CEFACT XML are backwards compatible with version CII D16B.

The following Tables list the new CII D25A syntax elements being used in EN 16931-3-2:2026 in the order of the semantic model. For guidance on backwards compatible mapping, see Table 14.

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Table 1 — New CII invoice XML

ID	XPath (old and new)	Reason
BT-10	<b>Since D25A unbounded:</b> /rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:BuyerReferenceID	BT-10 changed to have unbounded cardinality (may appear more than once) and may have a Code in BT-10-1
BT-10-1	<b>Since D25A:</b> /rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:BuyerReferenceID/@schemeID	Qualifying the Buyer Reference with a Code from UNTDID 1153 [6]
BG-3	<b>Since D22B unbounded:</b> /rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeSettlement/ram:InvoiceReferencedDocument	BT-10 changed to have unbounded cardinality (appear more than once)
BT-213	<b>Since D25A:</b> /rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeSettlement/ram:SpecifiedTradeAllowanceCharge/ram:CategoryTradeTax/ram:SupplyTypeCode	New BT with ram:SpecifiedTradeAllowanceCharge/ram:ChargeIndicator/udt:Indicator[.='false']
BT-214	<b>Since D25A:</b> /rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeSettlement/ram:SpecifiedTradeAllowanceCharge/ram:CategoryTradeTax/ram:SupplyTypeCode	New BT with ram:SpecifiedTradeAllowanceCharge/ram:ChargeIndicator/udt:Indicator[.='true']
BT-210	<b>Since D25A:</b> /rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeSettlement/ram:ApplicableTradeTax/ram:SupplyTypeCode	New BT
BT-196	<b>Since D25A:</b> /rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:IncludedSupplyChainTradeLineItem/ram:SpecifiedLineTradeSettlement/ram:ApplicableTradeTax/ram:SupplyTypeCode	New BT

## FprCEN/TS 16931-3-3:2026 (E)

### 4.3 Mismatches and Discrepancies

#### 4.3.1 Semantic alignment

The first step in mapping a semantic model to a syntax is to determine if each element in the semantic model has a corresponding element in the syntax. The corresponding element in the syntax shall have a similar or wider semantic definition with respect to the definition of the semantic model element. The definition of the syntax element may be implied by the name of that element. For example: an element named “VAT Amount” in the semantic model may be mapped to an element named “Tax Amount” in the syntax specification. As VAT is a type of tax, the element “Tax Amount” is a wider concept than VAT Amount. The semantic relation between elements from the semantic model and elements from the syntax specification can be specified using SKOS [7] relation types

At the semantic level the following types of semantic mismatches between individual elements may occur.

**Table 2 —Semantic alignment**

ID	SOURCE (Semantic )	TARGET (Syntax)	Example	Issue	Resolution
SEM-1	wider	smaller	SOURCE specifies ‘Taxes’, while TARGET specifies ‘VAT’  (SKOS: narrower)	The semantic rules of TARGET may be violated.	1) find another element in TARGET to put the violating instances (those taxes that are not VAT) 2) accept that you are abusing an element in TARGET for something it was not (entirely) designed for. 3) Request to widen semantic definition of TARGET
SEM-2	smaller	wider	SOURCE specifies “VAT”, Target specifies “Taxes”  (SKOS: broader)	All instances that comply to SOURCE will also comply to TARGET, but some of the semantics are lost: the type of Tax is not specified any more.	Unless other elements are mapped to the wider element as well, specify the narrower meaning in the documentation (VAT instead of Tax).
SEM-3	overlap	overlap	SOURCE specifies Employee (including teachers, staff, researchers -that are on payroll- etc) and TARGET specifies Researcher (can be both enlisted as employee, but also be a student).  (SKOS: related)	The semantic rules of TARGET may be violated.	1) accept that you are abusing an element in TARGET for something it was not (entirely) designed for. 2) Request to widen semantic definition of TARGET
SEM-4	match	no match	TARGET is missing any element to specify a person.	It is not possible to put certain information in the TARGET.	1) Use a (more) generic element 2) Request to add an element in TARGET.

### 4.3.2 Structural alignment

The second step is to review the “structural context” of the information element in the respective syntaxes. The structural context of an element is part of its semantic definition. Electronic messages in the different syntaxes represent data in different levels, groupings and sequences. For example, a VAT Amount element on line level in the model should not be mapped on a VAT Amount element on document level in the syntax specification.

The following structural mismatches may occur

**Table 3 — Structural alignment**

ID	SOURCE (Semantic)	TARGET (Syntax)	Example	Issue	Resolution
STR-1	Hierarchical order one to many	Hierarchical order many to one	Packing of items can be listed as items and then where they are packed or as a list of packs and what items are in each pack.	Yes	Complex mapping. Packs are lifted to higher level and equivalent packs need to be combined.
STR-2	element on higher level	element on lower level	SOURCE specifies element at top level with a single repetition but TARGET is in a class that is also used for other data that requires repetition of the class.	Possibly if higher level cardinalities cause conflicts.	
STR-3	grouping A-B-C	different grouping	SOURCE may define a group of elements such as payment instructions that may be repeated as a group but if those elements are differently grouped in TARGET, that repetition may be problematic.	Possibly.	
STR-4	higher detail	less detail	SOURCE has <name/firstname and name/lastname> and TARGET only has <name>.	Yes.	Agree on a rule to concatenate elements from SOURCE to TARGET
STR-5	less detail	higher detail	TARGET has <name/firstname and name/lastname> and SOURCE only has <name>.	Depends	Agree on a rule (if possible) to split the SOURCE element into several TARGET elements

### 4.3.3 Cardinality assessment

Cardinality defines whether or not an element shall be used, may be omitted and how many times it might be repeated in a specific context. The cardinality of an element in the syntax shall be the same or less restrictive than the corresponding element in the model. An element that is mandatory in the model may be optional in the syntax specification, but not the other way around. An element that is repeating in the model shall also be repeating in the syntax specification.

The following cardinality mismatches may occur.

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Table 4 —Alignment of cardinalities

ID	SOURCE	TARGET	Example	Issue	Resolution
CAR-1	optional (0..x)	mandatoy (1..x)		If the element is not present, the target rules are violated.	Agree on 'default value if missing' (e.g. 0, 1-1-1970, AAA).
CAR-2	mandatoy (1..x)	optional (0..x)		None.	Add a rule in the target that the element shall be present.
CAR-3	single (X..1)	multiple (X..N)		None.	Add a rule in the target that the element shall not be repeated.
CAR-4	multiple (X..N)	single (X..1)		Repeating elements cannot be handled.	1) If possible, repeat a higher level in the structure 2) In the case of text elements, concatenate the repeating elements
CAR-5	element missing	element mandatory		Yes.	Agree on 'default value if missing' (e.g. 0, 1-1-1970, AAA).

## 4.3.4 Datatype Alignment

EN 16931-1 defines the following semantic data types:

Table 5 —Semantic data types

Basic type	Definition
Amount. Type	An amount states a numerical monetary value. The currency of the amount is defined as a separate business term. This EN16931_ Amount. Type is based on the Amount. Type as defined in ISO 15000-5:2014 Annex A. EN16931_ Amount. Type is floating up to two fraction digits.
Unit Price Amount. Type	A unit price amount states a numerical monetary amount value for data elements that contain item prices that may be multiplied by item quantities. The currency of the amount is defined as a separate business term. This EN16931_ Unit Price_ Amount. Type is based on the Amount. Type as defined in ISO 15000-5:2014 Annex A.
Quantity. Type	Quantities are used to state a number of units such as for items. The code for the Unit of Measure is defined as a separate business term. This EN16931_ Quantity. Type is based on the Quantity. Type as defined in ISO 15000-5:2014 Annex A. EN16931_ Quantity. Type is floating up to five fraction digits.
Percentage. Type	Percentages are given as fractions of a hundred (per cent) e.g. the value 34.78 % in percentage terms is given as 34.78. This EN16931_ Percentage_ Numeric. Type is based on the Numeric. Type as defined in ISO 15000-5:2014 Annex A. EN16931_ Percentage_ Numeric.
Identifier. Type	Identifiers (IDs) are keys that are issued by either the sender or recipient of a document or by a third party. For each identifier in the model it is stated whether an identification scheme shall be defined and if so, from what list the identification schemes may be chosen. This EN16931_ Identifier. Type is based on the Identifier. Type as defined in ISO 15000-5:2014 Annex A. The Scheme identifier Identifies the scheme on which the identifier is based. The use of this attribute is specified for each information element in the semantic model.
Document Reference. Type	Identifiers that were assigned to a document or document line by the Buyer, the Seller or by a third party. This EN16931_ Document Reference_ Identifier. Type is based on the Identifier. Type as defined in ISO 15000-5:2014 Annex A.
Date. Type	Dates shall be in accordance to the "Calendar date complete representation" as specified by ISO 8601 (see ISO 8601:2004, 5.2.1.1). Calendar dates do not include a specification for the time of the day. This EN16931_ Date_ Date Time. Type is based on the Date Time. Type as defined in ISO 15000-5:2014 Annex A.
Text. Type	Text is the actual wording of anything written or printed. The language of the textual business terms in the invoice is defined in a separate business term in the model (BT-4 Invoice language code). This EN16931_ Text. Type is based on the Text. Type as defined in ISO 15000-5:2014 Annex A. Line breaks in the text may be present.
Time Type	Times shall be represented as specified by ISO 8601 (see ISO 8601-1:2019, Date and time — Representations for information interchange — Part 1: Basic rules). The representation shall include timezone information. This EN 16931_ Time_ Date Time. Type is based on the Date Time. Type as defined in ISO 15000-5:2014, Annex B. The content of the Date Time. Format. Text attribute is left to the syntax in which the Time is represented.

Basic type	Definition
Binary Object. Type	Binary objects can be used to describe files which are transmitted together with the Invoice. Attachments shall be transmitted together with the Invoice. There shall be only one way defined per syntax. This EN16931_ Binary Object. Type is based on the Binary Object. Type as defined in ISO 15000-5:2014 Annex A. EN16931_ Binary Object. Type has two supplementary components: a Mime Code, which specifies the Mime type of the attachment and a Filename that is provided by (or on behalf of) the sender of the invoice.

These data types are further defined in EN 16931-1. These definitions are based on the data type definitions in ISO 15000-5. Data types are composites, consisting of a content and zero or more supplementary components. Syntax specifications may deviate from the EN 16931-1 definitions, while being based on the same ISO 15000-5 data types. For example, the set of supplementary components may be different. They also may define different restrictions, such as field lengths.

The following issues may arise at data format level when mapping the model to a syntax:

**Table 6 —Data type alignment**

ID	SOURCE	TARGET	Example	Issue	Resolution
SYN-1	wider	Smaller	the SOURCE element has datatype string, TARGET has datatype integer (or: DateTime vs Date).	Yes, since some of the values SOURCE instances can hold, will not be valid in TARGET.	
SYN-2	smaller	Wider	SOURCE is integer, TARGET is string.	No	Not needed.
SYN-3	match	no match	Source has DateTime, TARGET Timestamp.	Yes	Add transformation logic.

Further information on Data Types and relevant Codelists for the Cross Industry Invoice can be found in the Requirement Specification Mapping (RSM) document at the UNECE website [8]. The following additional rules are applied:

- For the udt:DateTimeType only the DateTimeString choice shall be used. For the corresponding attribute @format the codelist UN/CEFACT 2379 [6] is applied.
- For the mapping of the SDM date only code “102” (CCYYMMDD) shall be used.
- For the mapping of the SDM time only code “208” (CCYYMMDDhhmmssZhhmm<sup>1</sup>) shall be used.

#### 4.4 Effective Cardinality

Effective Cardinality represents the occurrence count of a Business Term (BT) in a syntax. It is relevant if the BT consists of multiple XML nodes relative to its parent BG.

It is calculated as follows:

- The cardinality of a BT results from multiplying the cardinalities (either min or max) of each XML nodes along its XPath hierarchy between BT and its parent – usually the BG. Minimal and maximal cardinality are being multiplied separately. For example: If a relative BT path of its parent consists of two elements: A parent element with cardinality (2..4) and with a child with cardinality (3..5), the Effective Cardinality would be (6..20).
- If the BG is **not an ancestor** of a BT, the relevant path to evaluate is the “**non-common**” (relative) path segments.
- For BTs like *BT-10-1*, the parent is *BT-10*, not a BG, and cardinality is relative to the parent BT.

<sup>1</sup> C = Century, Y = Year; M = Month; D = Day; h = Hour; m = Minute, s = Seconds, Z = leading plus/minus sign, hhmm = difference to UTC in Hours and Minutes