



SLOVENSKI STANDARD

oSIST prEN 16931-8:2022

01-marec-2022

Elektronsko izdajanje računov - 8. del: Semantični podatkovni model elementov e-potrdila ali poenostavljenega elektronskega računa

Electronic invoicing - Part 8: Semantic data model of the elements of an e-receipt or a simplified electronic invoice

Elektronische Rechnungsstellung - Teil 8: Semantisches Modell vereinfachter Rechnungen und elektronischer Belege

Facturation électronique - Partie 8 : Modèle sémantique de données des éléments d'un reçu électronique ou d'une facture électronique simplifiée

Ta slovenski standard je istoveten z: **oSIST prEN 16931-8:2022**
prEN 16931-8

<https://standards.iten.ai/catalog/standards/sist/9f0704eb-d4ad-4359-b9b9-b73a6608d22b/osist-pren-16931-8-2022>

ICS:

| | | |
|-----------|--|---------------------------------------|
| 03.100.20 | Trgovina. Komerzialna dejavnost. Trženje | Trade. Commercial function. Marketing |
| 35.240.63 | Uporabniške rešitve IT v trgovini | IT applications in trade |

oSIST prEN 16931-8:2022

en,fr,de

**iTeh STANDARD
PREVIEW
(standards.iteh.ai)**

oSIST prEN 16931-8:2022

<https://standards.iteh.ai/catalog/standards/sist/9f0704eb-d4ad-4359-b9b9-b73a6608d22b/osist-pren-16931-8-2022>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 16931-8

January 2022

ICS 35.240.20; 35.240.63

English Version

Electronic invoicing - Part 8: Semantic data model of the elements of an e-receipt or a simplified electronic invoice

Elektronische Rechnungsstellung - Semantisches
Modell vereinfachter Rechnungen und elektronischer
Belege

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

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

| 1 | Contents | Page |
|----|--|------|
| 2 | European foreword | 3 |
| 3 | 1 Scope | 4 |
| 4 | 2 Normative references | 4 |
| 5 | 3 Terms and definitions | 5 |
| 6 | 4 The concept of an e-receipt | 6 |
| 7 | 5 Use cases and functionality supported by the e-receipt | 8 |
| 8 | 6 The semantic data model of the elements of an e-receipt | 33 |
| 9 | 7 Restrictions and extensions | 64 |
| 10 | Annex A (informative) Examples | 65 |
| 11 | A.1 Calculation examples | 65 |
| 12 | A.2 Number of decimals and rounding | 65 |
| 13 | A.3 Use cases | 65 |
| 14 | Annex B (informative) BPMN symbols | 66 |
| 15 | Bibliography | 69 |
| 16 | | |

[oSIST prEN 16931-8:2022](https://standards.iteh.ai/catalog/standards/sist/9f0704eb-d4ad-4359-b9b9-b73a6608d22b/osist-pren-16931-8-2022)

<https://standards.iteh.ai/catalog/standards/sist/9f0704eb-d4ad-4359-b9b9-b73a6608d22b/osist-pren-16931-8-2022>

17 European foreword

18 This document (prEN 16931-8:2022) has been prepared by Technical Committee
19 CEN/TC "Electronic Invoicing", the secretariat of which is held by NEN.

20 This document is currently submitted to the CEN Enquiry.

21 This document is part of a series of documents, consisting of the following parts:

22 — EN 16931-1, *Electronic invoicing - Part 1: Semantic data model of the core elements of an*
23 *electronic invoice*

24 — CEN/TS 16931-2, *Electronic invoicing - Part 2: List of syntaxes that comply with EN 16931-1*

25 — CEN/TS 16931-3-1, *Electronic invoicing - Part 3-1: Methodology for syntax bindings of the core*
26 *elements of an electronic invoice*

27 — CEN/TS 16931-3-2, *Electronic invoicing - Part 3-2: Syntax binding for ISO/IEC 19845 (UBL 2.1)*
28 *invoice and credit note*

29 — CEN/TS 16931-3-3, *Electronic invoicing - Part 3-3: Syntax binding for UN/CEFACT XML Cross*
30 *Industry Invoice D16B*

31 — CEN/TS 16931-3-4, *Electronic invoicing - Part 3-4: Syntax binding for UN/EDIFACT INVOIC*
32 *D16B*

33 — CEN/TR 16931-4, *Electronic invoicing - Part 4: Guidelines on interoperability of electronic*
34 *invoices at the transmission level*

35 — CEN/TR 16931-5, *Electronic invoicing - Part 5: Guidelines on the use of sector or country*
36 *extensions in conjunction with EN 16931-1, methodology to be applied in the real environment*

37 — CEN/TR 16931-6¹, *Electronic invoicing - Part 6: Result of the test of EN 16931-1 with respect to*
38 *its practical application for an end user - Testing methodology*

39 — CEN/TS 16931-7, *Electronic invoicing - Part 7: Methodology for the development and use of EN*
40 *16931-1 compliant structured Core Invoice Usage Specifications*

41 — prEN 16931-8, *Electronic invoicing - Part 8: Semantic data model of the elements of an e-receipt*
42 *or a simplified electronic invoice* (this document)

43

¹ In preparation.

prEN 16931-8:2022 (E)**44 1 Scope**

45 This document establishes a semantic data model of an e-receipt or a simplified electronic invoice.
 46 In the remainder of this document, when "e-receipt" is mentioned, "simplified invoice" is also
 47 meant. The semantic model includes essential information elements that an electronic receipt
 48 needs to ensure legal (including fiscal) compliance and to enable interoperability for cross-border,
 49 cross sector and domestic trade. The semantic model can be used by organizations in the private
 50 and the public sector for documenting by issuing a receipt for the purchase of services and /or
 51 goods. It can also be used for documenting a purchase between private sector enterprises. In
 52 addition, it has been designed for the use of consumers.

53 What separates the receipt document from the invoice document is basically the dynamics of the
 54 usage. An invoice is mainly issued to achieve a payment for delivered goods and services and a
 55 receipt is issued to document the payment for the purchase of goods and services. In addition, the
 56 invoices always contain information about the buyer, whereas the receipt only needs that in
 57 certain cases and is for the most part issued without a buyer identification.

58 These conditions are regulated differently by laws and practice in different countries and this has
 59 been taken into consideration.

60 This document complies at least with the following criteria:

- 61 — it is technologically neutral;
- 62 — it is compatible with relevant international standards on electronic invoicing;
- 63 — the application of this document is intended to comply with the requirements for the
 64 protection of personal data of Directive 95/46/EC, having due regard to the principles of
 65 privacy and data protection by design, data minimization, purpose limitation, necessity and
 66 proportionality;
- 67 — it is consistent with the relevant provisions of Directive 2006/112/EC;
<https://standards.iteh.ai/catalog/standards/sist/9f0704eb-2022>
- 68 — it allows for the establishment of practical, user-friendly, flexible and cost-efficient electronic
 69 invoicing and cash register systems;
- 70 — it takes into account the special needs of small and medium-sized enterprises as well as of
 71 sub-central contracting authorities and contracting entities;
- 72 — it is suitable for use in commercial transactions between enterprises and between enterprises
 73 and consumers.

74 2 Normative references

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

79 EN ISO 3166-1, *Codes for the representation of names of countries and their subdivisions - Part 1:*
 80 *Country code (ISO 3166-1)*

81 ISO 8601-1:2019, *Date and time - Representations for information interchange - Part 1: Basic rules*

82 ISO 15000-5:2014, *Electronic Business Extensible Markup Language (ebXML) - Part 5: Core*
 83 *Components Specification (CCS)*

84 3 Terms and definitions

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

86 ISO and IEC maintain terminological databases for use in standardization at the following
87 addresses:

88 — IEC Electropedia: available at <https://www.electropedia.org/>

89 — ISO Online browsing platform: available at <https://www.iso.org/obp>

90 NOTE Business terms that are part of the semantic model are defined in the model itself.

91 3.1

92 **electronic invoice**

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

95 [SOURCE: Directive 2014/55/EU]

96 3.2

97 **electronic receipt**

98 receipt that has been issued in a structured electronic format which allows for its automatic and
99 electronic processing also to be transmitted and received by the customer if customer so decides

100 3.3

101 **semantic data model**

102 structured set of logically interrelated information elements

103 3.4

104 **information element**

105 semantic concept that can be defined independent of any particular representation in a syntax

106 3.5

107 **structured information element**

108 information element that can be processed automatically

109 3.6

110 **syntax**

111 machine-readable language or dialect used to represent the information elements contained in an
112 electronic document (e.g. an electronic invoice)

113 3.7

114 **business term**

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

116 3.8

117 **receipt model**

118 semantic data model of the elements of an electronic receipt

119 3.9

120 **elements of an e-receipt**

121 set of essential information elements that an electronic invoice may contain in order to enable
122 cross-border interoperability, including the necessary information to ensure legal compliance

prEN 16931-8:2022 (E)123 **3.10**124 **identifier**

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

127 Note 1 to entry: An identifier may be a word, number, letter, symbol, or any combination of those,
128 depending on the identification scheme used.

129 **3.11**130 **identification scheme**

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

132 **3.12**133 **POS**

134 cash register, or cash register system that allows communication between different components
135 and systems

136 Note 1 to entry: A POS system is designed to facilitate user-friendly administration of sales for employees.
137 The system also helps with the management of a business.

138 **3.13**139 **compliant**

140 some or all features of the e-receipt model are used and all rules of the e model are respected

141 Note 1 to entry: Based on TOGAF definition of a compliant specification.

142 **3.14**143 **conformant**

144 all rules of the e-receipt model are respected and some additional features not defined in the
145 model are also used

146 Note 1 to entry: Based on TOGAF definition of a conformant specification.
<https://standards.iteh.ai/catalog/standards/sist/9f0704eb-0420-4200-ba10-6931-8-2022>

147 **4 The concept of an e-receipt**148 **4.1 Introduction**

149 In many countries retail businesses are required to use certified cash registers or point of sales
150 systems (POS) to produce receipts for each transaction, and to record and preserve the sales data
151 for audit. The purpose is to better tax compliance and set the stage for fair competition. The
152 requirements set for the content of the receipt, and the sales data to be preserved, have strong
153 seller emphasis, linking also to the seller's obligations for bookkeeping and VAT declaration.

154 For the buyer the receipt is an instrument mainly for consumer protection, guaranteeing that the
155 purchase was legitimate and correct, but in the case the buyer is a taxable business entity the
156 receipt may also serve the buyer as verification in bookkeeping and for deduction of VAT.

157 It should be noted that the legislation on receipts in the EU member states has national scope – the
158 only exception is the EU VAT Directive that has been transposed into national law.

159 The VAT directive recognizes *invoice* and *simplified invoice* as valid forms of transaction. This
160 means that, to the extent a receipt is to substantiate reporting of VAT, it shall satisfy the
161 requirements as either invoice or simplified invoice. But, again, while the invoice is implemented
162 consistently across the member states, the implementation of the simplified invoice may be
163 adapted to national practice.

164 Consequently, under current legal regimes the receipt has mainly domestic reach; if one wants to
165 do transactions internationally in many cases one needs to use the invoice.

166 4.2 Contents of the e-receipt model

167 Semantic building blocks for the e-receipt have been chosen, when applicable, from EN 16931 or
168 from simplified invoice requirements ([https://ec.europa.eu/taxation_customs/business/vat/eu-
169 vat-rules-topic/vat-invoicing-rules_en](https://ec.europa.eu/taxation_customs/business/vat/eu-vat-rules-topic/vat-invoicing-rules_en)). The EU's Digital Single Market aims to overcome
170 challenges by creating the right environment for digital networks and services to flourish.

171 This is not only achieved by setting the right regulatory conditions, but also by providing cross-
172 border digital infrastructures and services.

173 To achieve these in the e-receipt standardization, required elements for e-receipt are chosen so
174 that already existing national receipt solutions could find needed elements from the e-receipt
175 standard and optional requirements support functionality that may vary depending on national
176 interests, needs and legislation allowing future developments.

177 Semantic building blocks for required and optional elements have been described in Clause 5
178 introducing some examples of use cases.

179 In cases where new optional semantic elements were introduced or arise during handling of
180 comments after enquiry from national standardization bodies, work needs to be done during the
181 standardization process to add and introduce those into existing references e.g. to UBL,
182 UN/CEFACT, CII or else source that EU CEF would support.

183 Caveat: The content of the semantic model has been drafted to satisfy a wide range of stakeholder
184 needs and application/industry areas. Only a limited set of legislations was considered but the
185 ambition has been to designate a framework standard that can accommodate for the various
186 legislations in Europe. However, it cannot be guaranteed that various regulations (for tax
187 compliance, VAT reporting, bookkeeping, and more) recognize the concept of receipt. As can be
188 concluded from 4.1, implementation has to be done on a national level and, furthermore,
189 implementers need to verify that the selected transaction format supports the relevant
190 regulations.

191 4.3 How to use the e-receipt model

192 This document lists business terms (information elements) and business term groups that may be
193 included in an e-receipt or electronic simplified invoice. An e-receipt is transmitted between a
194 sending and a receiving application. Sending applications may take any subset of the set of
195 business terms listed in this document, provided it respects the stated cardinality
196 (mandatory/conditional status and minimum/maximum repetition). Receiving applications shall
197 be able to receive all business terms listed, but may interpret and process only the information
198 elements they need for their purpose. No prior agreement between sending and receiving
199 applications is needed. Sending applications obviously should advertise to its users for what
200 purposes the e-receipt transmitted is fit by identifying the type of document it is.

201 4.4 Compliance

202 4.4.1 Compliance of sending or receiving party

203 A receiving party may only claim compliance to the e-receipt model if it can accept all invoices
204 that comply with the model. It nevertheless only needs to understand and process the information
205 elements that it needs for its purposes.

206 A sending party may claim compliance if it sends invoices that comply with the e-receipt model.

prEN 16931-8:2022 (E)**207 4.4.2 Compliance of a receipt/invoice document instance**

208 An e-receipt document instance is compliant to the model if it respects all rules defined for the e-
209 receipt model.

210 5 Use cases and functionality supported by the e-receipt**211 5.1 Use case requirements supported****212 5.1.1 Introduction**

213 The e-receipt model supports a basic purchase-to-pay process.

214 Using payment card as payment method, the card schemes may require special information into
215 given receipt.

216 Some countries have also legal requirements for point of sales (POS) and information into given
217 receipt.

218 This subclause describes the processes that are supported by the e-receipt model. How the
219 receipts are electronically exchanged is not described in the process models. Parties may handle
220 document exchange with their own resources or outsource (part of) it. See also CEN/TR 16931-4.

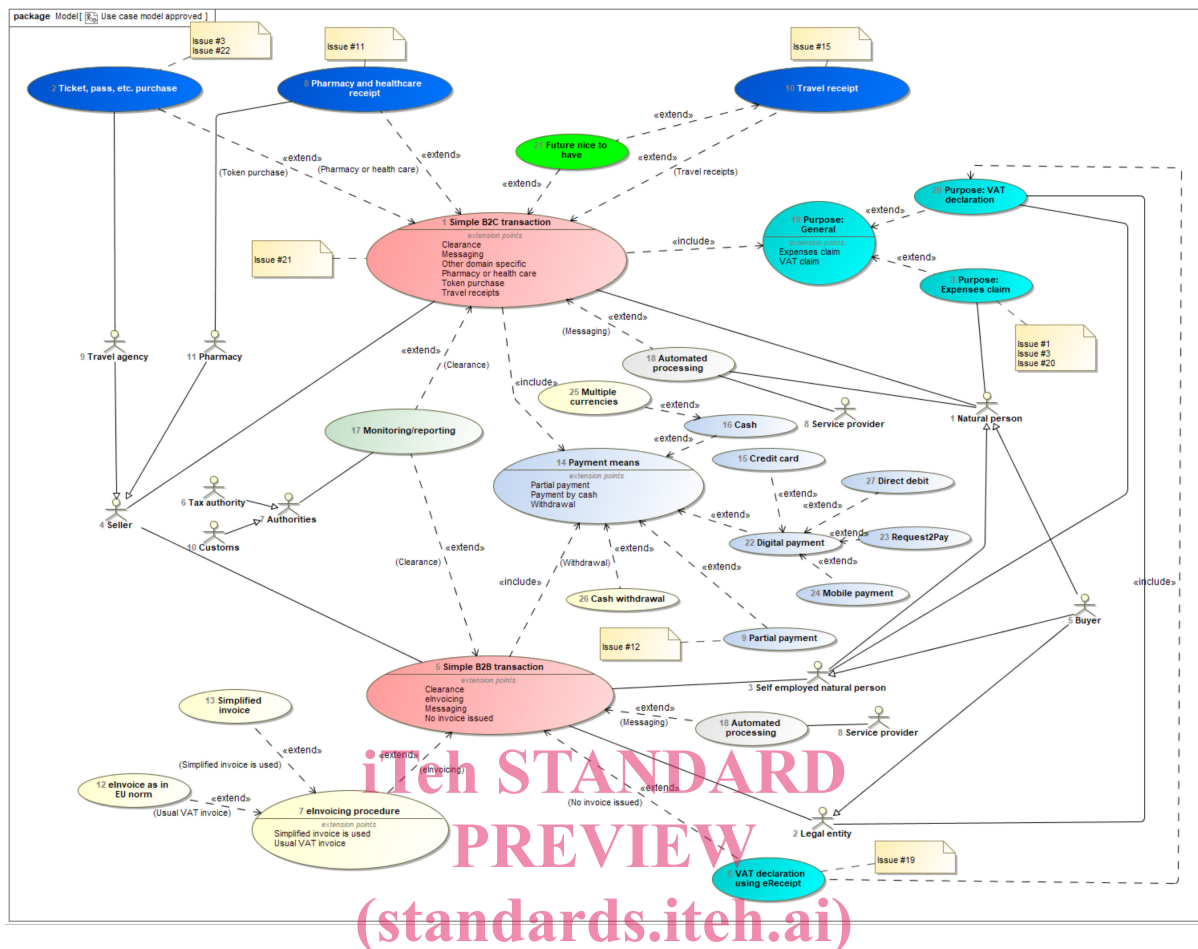
221 The process models focus on the external activities of the parties and do not describe internal
222 activities.

223 The process model diagrams are presented in the Business Process Model and Notation (BPMN)
224 of the Object Management Group (OMG). A short legend of the symbols used can be found in
225 Annex B.

226 The process models included in this clause are intended to indicate the business contexts that are
227 supported by the e-receipt model. The models do not give a full definition of those processes.

228 The e-receipt model shall include elements that allow the trading parties to represent any receipt
229 transaction according to the EU VAT directives and should support the following types of business
230 processes:

- 231 • U1: B2C e-receipts
- 232 • U2: Online shop e-receipt
- 233 • U3: e-Receipt is used to claim expenses
- 234 • U4: Buyer uses receipt information for VAT reclaim
- 235 • U5: Seller use receipts information for VAT declaration
- 236 • U6: e-receipt is used for returns, guarantee and refund
- 237 • U7: Simplified invoice for B2B transactions



238

239

Figure 1 — Overview of use cases

oSIST prEN 16931-8:2022

240 **5.1.2 U1: B2C e-receipts** <https://standards.iteh.ai/catalog/standards/sist/9f0704eb->[d4ad-4359-b9b9-b73a6608d22b/osist-pren-16931-8-](https://standards.iteh.ai/catalog/standards/sist/9f0704eb-d4ad-4359-b9b9-b73a6608d22b/osist-pren-16931-8-)241 **5.1.2.1 Introduction** [2022](https://standards.iteh.ai/catalog/standards/sist/9f0704eb-d4ad-4359-b9b9-b73a6608d22b/osist-pren-16931-8-2022)

242 The most common case (about 95 %) for an e-receipt is when a consumer purchases goods or
 243 services, pays and receives the receipt as proof of purchase and payment.

244 **5.1.2.2 Short description**

245 • A receipt is a result from a purchase process carried out by a Consumer

246 • A receipt is issued by a cash register (ECR/POS)

247 **5.1.2.3 Parties involved**

248 i. Seller (Merchant)

249 ii. Buyer (Consumer)

250 **5.1.2.4 Purpose**

251 The buyer uses the receipt information to get an overview of their spending and to reconcile the
 252 spending with the payment record (credit or debit card slip / bank statement).

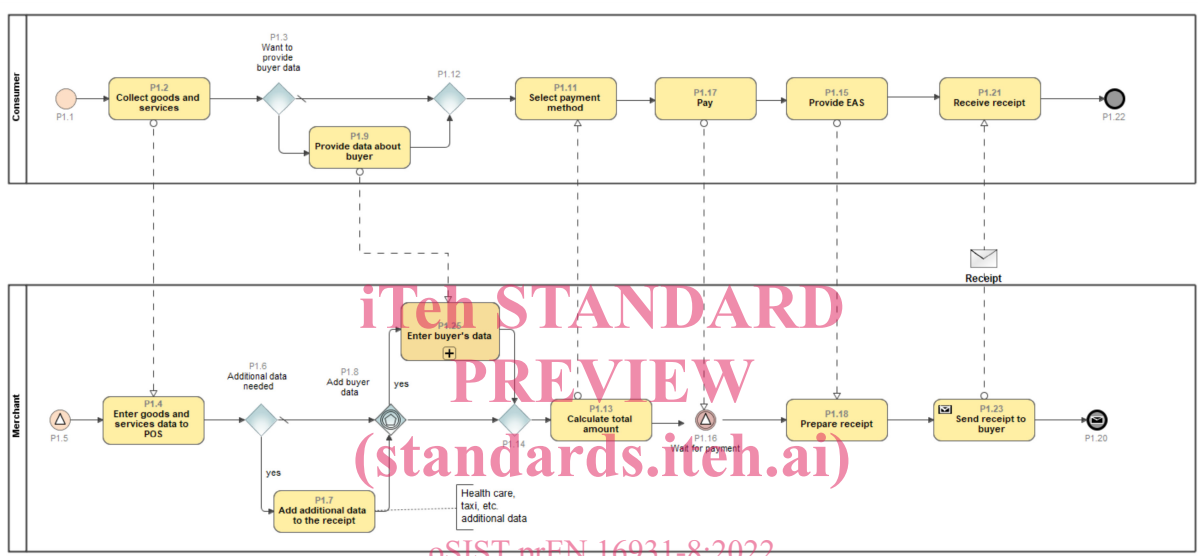
253

prEN 16931-8:2022 (E)254 **5.1.2.5 Advantages**255 *Seller advantages*

- 256 • Legal compliance
- 257 • Customer satisfaction, in early stages winning the customer's preferences
- 258 • Identifying the discount(s) and promoting agreements and advantage programs, attracting
259 customers to prefer their services by giving customers better oversight and possibility to
260 control agreement loyalty
- 261 • Evaluating loyalty programs and agreements
- 262 • Reducing receipt paper costs
- 263 • Securing reference to product documentation and tracking, easy referencing and
264 documenting the features of the products and services
- 265 • Easier search for the purchase in the ECR/POS in case of service, return of product, warranty
266 handling
- 267 • Relaying information about warranties and handling of them
- 268 • Relaying information about loyalty saving (coupons)
- 269 • Potential information channel between the seller and the customer
- 270 • Information about the business:
- 271 ○ Opening hours
- 272 ○ Telephones
- 273 ○ Mail address
- 274 ○ etc.
- 275 *Buyer advantages*
- 276 • Legal compliance
- 277 • Consumers need to manage different type of budgets as part of their daily life
- 278 • If the buyer wants to return the product, the e-receipt is easily available and searchable on
279 the mobile wallet, computers and other applications from service providers
- 280 • Seller information like Seller name (Seller's business name) and Organization VAT identifier
281 are essential for high quality services for private customers
- 282 • Additional information like business address as well as the line item information, can help
283 customers to identify payments, tracking and searching for information about the goods and
284 services
- 285 • With e-receipts sharing costs with other party and documenting refund claims.

- 286 • Better fraud detection
- 287 • When infrastructure and applications are made:
 - 288 ○ Oversight over expenditure on a personal level
 - 289 ○ Automatic categorization and expenditure budgeting
 - 290 ○ Ease of storing receipts
 - 291 ○ Searching for information and no old paper receipts where the text has vanished

292 5.1.2.6 Process or workflow description



293

294

oSIST prEN 16931-8:2022
<https://standards.itech.ai/catalog/standards/sist/9f0704eb-d4ad-4359-b9b9-b73ab098d22b/osist-pren-16931-8-2022>
Figure 2

- 295 1. The Buyer purchases goods and/or services from the Seller
- 296 2. If necessary, the Buyer provides additional information to the Seller (e.g. ID number)
- 297 3. The Seller calculates the total amount of the purchase
- 298 4. The Buyer selects a payment method from the options offered by the Seller
- 299 5. The Buyer pays or initiates the payment (cash, voucher or with electronic means)
- 300 6. The Seller generates the e-receipt with their cash register and sends it to the Buyer
- 301 7. The Buyer imports the e-receipt in their application

prEN 16931-8:2022 (E)

302 5.1.2.7 Variants and exceptions

303 For some product and service types specific information exists that is needed in the e-receipt:

- 304 • ATMs and currency exchange

| Business requirement | Business Term | Reason |
|----------------------|---------------|--------|
| Currency | | |
| Amount | | |
| Exchange rate | | |

305

- 306 • Food (nutrition value, ingredients, allergy issues, source, etc.)

| Business requirement | Business Term | Reason |
|----------------------|---------------|---------------|
| Nutrition value | | consumer need |
| Allergy information | | consumer need |
| Quality marks | | consumer need |

307

- 308 • Textile and clothing

| Business requirement | Business Term | Reason |
|----------------------|---------------|-----------------|
| Composition | | consumer need |
| Washing instructions | | consumer need |
| Quality marks | | ? consumer need |

309

- 310 • Electronics, hardware and machinery

| Business requirements | Business Term | Reason |
|------------------------|---------------|---------------|
| Guarantee/warranty | | consumer need |
| Recycling instructions | | consumer need |

311

- 312 • Access to cultural and other events or facilities

| Business requirements | Business Term | Reason |
|-----------------------|---------------|---------------|
| Token | | consumer need |
| Rang and seat | | consumer need |

313

314 **5.1.2.8 Legal aspects**

315 TBD

316 **5.1.2.9 Technical aspects**

317 Usually, the e-receipt is generated with a cash register or with a ticket or vending machine. There
318 exist different options how the document is sent to the buyer.

319 • The document can be transferred to the buyer's mobile device by means of a wireless protocol
320 (e.g. NFC, Bluetooth)

321 • The document (or a link to the document) can be represented in a barcode (e.g. a QR-code)
322 which is scanned by the buyer

323 • The buyer may provide their electronic address and is sent to that address, possibly by means
324 of one or more service providers

325 The cash register and the payment terminal may not be connected with each other. In that case
326 either the e-receipt may not contain payment information or the buyer's application gets the
327 payment information through another channel from the payment terminal. It is also possible that
328 the e-receipt is completed (manually) with payment information by the seller or the buyer.

329 **5.1.2.10 Other aspects**

330 An e-receipt should contain the means of payment and an identifier of the payment transaction.

331 **5.1.2.11 Data requirements**

| Business requirements | Business Term | Reason |
|--|---------------|--|
| Merchant/Business name | | general receipt requirement |
| Merchant Business ID vat/org/number | | general receipt requirement if VAT registered see national thresholds |
| Seller contact details | | general receipt requirement |
| Place of delivery | | |
| Cash register id | | requirement e.g. if fiscal cash registers |
| Payment terminal ID | | Control info which could be used like in fiscal cash register solutions, also Payment location for STATistics purposes |
| Address where the cash register is | | |
| Receipt id/ number | | general receipt requirement |
| Date and time of issue | | general receipt requirement |
| Type of goods product/service name description at line level | | general receipt requirement |
| Product/service Quantity | | general receipt requirement |
| Discounts and allowances | | Merchant + consumer need |
| Total amount | | general receipt requirement |