Swiss Implementation Guidelines QR-bill

Technical and professional specifications of the payment part with Swiss QR Code

General note

Comments and questions about this document can be directed to the respective financial institution or to SIX Interbank Clearing Ltd at the following address: pm@six-group.com.

Change control

All changes made to this document are listed in the document history with version details, change date and a brief description of the changes made.

Patent notice

SIX Group and the responsible project sponsors for the new QR-bill for the Swiss financial center have together carefully reviewed the technical and legal framework conditions for the territory of Switzerland in consultation with specialists and are providing corresponding specifications for a standardized QR-bill ("standardization"). The usage possibilities for billing and paying a QR-bill listed in No. 2.1 were used as a basis:

- Payer captures QR code using a reader or camera in e-/m-banking
- Payer captures QR code using a reader or scanner in an ERP system and transmits the payment instruction electronically (e.g. pain message)
- Cash inpayment at post office counter
- Credit transfer instruction form

A container for additional schemes is provided in the alternative schemes element. The content and use of this data lies within the scope of responsibility of the publisher of the respective scheme. Structured information can be transmitted between the biller and bill recipient in the "additional information" element. The design of the QR-bill provides a data field for this. Use of the information is not a component of the standardization. Further uses of the QR-bill that are not listed, such as payment via an ATM, are also not a component of the standardization.

For the commercial technological implementation of the standardization, accepted industry measures are to be planned by the commercial users. **SIX Group does not undertake any consultation for the specific range of functions for the respective systems, does not provide any control function for technical procedures and grants no guarantee nor assumes any liability for the specific mechanical or technical procedural implementation for the use and processing of QR-bills or the standardization.**

Document history

Version	Date	Change description
1.0	27.04.2017	First edition

Table of contents

1   Introduction

The Swiss Recommendations for implementation of the payment part with Swiss QR Code based on the ISO 18004 standard were compiled on behalf of the Board of Directors of SIX Interbank Clearing Ltd.

The primary target group of this document is developers for billers, bill recipients and banking software.
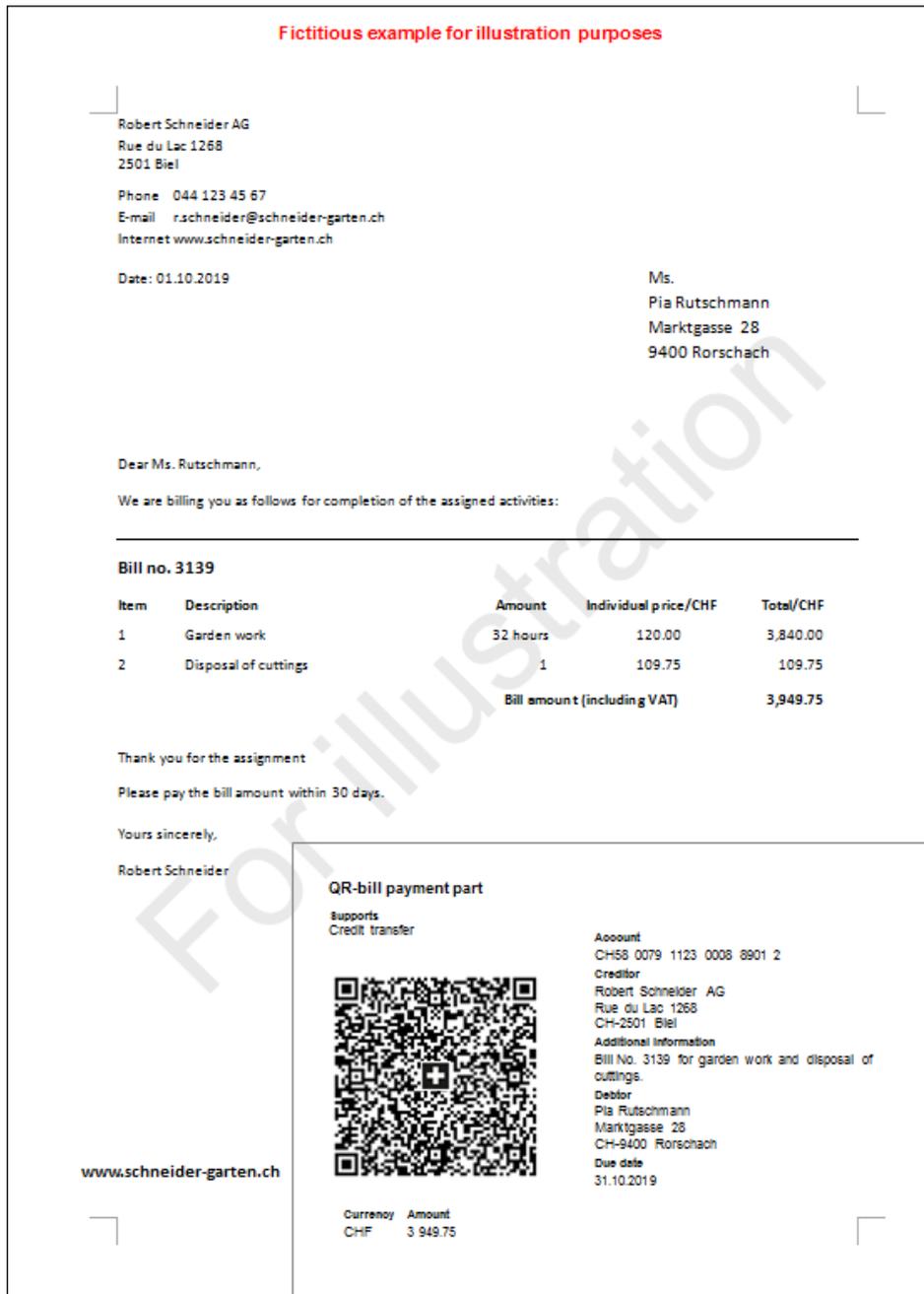
Figure 1:   Sample of a QR-bill

1.1　　　　　Change control

The document «Swiss Implementation Guidelines QR-bill» can only be changed by

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and reflects the recommendations of the Swiss financial institutions. Future changes and updates will be made by SIX Interbank Clearing Ltd.

The latest version of this document can be downloaded at　www.PaymentStandards.CH

1.2　　　　　Reference documents

Ref	Dokument/Schema	Titel	Quelle
[1]	ISO 18004	ISO 18004 Third Edition of 2015-02-01 (Information technology – Automatic identification and data capture techniques – Swiss QR Code bar code symbology specification)	ISO
[2]	pain.001.001.03	XML Schema Customer Credit Transfer Initiation V03	ISO
[3]	pain.001.001.03.ch.02	Swiss Implementation Guidelines for customer-bank messages for credit transfers in payment traffic	SIX

Table 1:　　Reference documents

Organisation	Link
ISO	www.iso.org
SIX Interbank Clearing Ltd	www.iso-payments.ch www.sepa.ch www.six-interbank-clearing.com
Harmonization of Swiss payments	www.paymentstandards.ch

Table 2:　　Links to the relevant Internet pages

1.3   Definition of terms

The following figure serves a sketch of two possible designs of a QR-bill with payment part, intended to improved comprehension of the subsequent definitions.

Figure 2:   Schematic depiction of a QR-bill with integrated payment part

1.3.1   QR-bill

The QR-bill is a bill with the associated payment part with Swiss QR Code.

1.3.2   QR-bill payment part

The payment part of the QR-bill is in A6 format and contains the information necessary to execute a payment in the form of a Swiss QR Code, as well as printed information. The payment part can be a component of the QR-bill or be enclosed as a separate supplement.

1.3.3   QR Code

A two-dimensional barcode, in accordance with ISO 18004, based on the development of the company DENSO WAVE INCORPORATED. "QR Code" is a registered trademark of DENSO WAVE INCORPORATED.

1.3.4   Swiss QR Code

The Swiss QR Code meets the requirements stipulated in this document and enables the initiation of payments at banks. It is marked with the Swiss cross in the middle.

1.3.5   Swiss QR Code version according to ISO 18004

The Swiss QR Code standard stipulates versions for the coding of various data volumes (from Version 1 to Version 40) with correspondingly different storage capacities in the form of modules. The respective codeable data volume depends, on the one hand, on the error correction level chosen, and on the other, on the data to be encoded (numeric, alphanumeric, binary, Kanji).

A fixed number of modules is allocated to each version.

1.3.6   Versioning of the Swiss Implementation Guidelines QR-bill

The main versions place the versioning counter in the first position. (Version **1**.0; Version **2**.0). Main versions can either have an impact on the data structure, the content or on the design recommendations, and generally require technical adaptations.

Subversions (Version 1.**1**; Version 1.**11**) generally do not require any technical adaptations.

The version must be depicted in the data structure (for details see 3.3 Data structure, "Version" element).

1.3.7   The term "module" according to ISO 18004

A module designates the smallest information carrier in the Swiss QR Code, comparable with a data bit. In the Swiss QR Code the modules correspond to the white and black dots of the code.

1.3.8   The term "error correction level" according to ISO 18004

The QR Code has the ability to restore the data contained in the code if the code is damaged (e.g. through dirt, folding, imprinting, etc.). The standard includes four error correction levels corresponding to different restoration capacities (L = approx. 7%, M = approx. 15%, Q = approx. 25%, H = approx. 30%). The higher the error correction level that is chosen, the lower the codeable data volume.

1.3.9   Printer and scanner resolution

The printer and scanner are customarily specified in Dots per Inch (DPI).

1.3.10   IID

IID is an abbreviation of Institute ID (former BC no.). Each banking institution that participates in payment traffic in Switzerland has at least one assigned IID.

1.3.11   IBAN

International number format for bank accounts according to ISO 13616.

1.3.12	**QR-IBAN**

The QR-IBAN is an account number that must be used for payments with a structured reference as information for the account to be credited. The formal structure of this IBAN corresponds to the rules stipulated in ISO 13616.

The payment scheme with reference is recognized through a special financial institution identification number (QR-IID). The values 30000 – 31999 are exclusively reserved for the QR-IID. Each legally independent financial institution participating in the scheme is assigned at least one QR-IID. The QR-IBAN contains the QR-IID of the account-keeping financial institution for identification of the scheme.

1.3.13	**References**

For payments with structured reference, the two following reference types are used.

1.3.13.1	**QR reference**

The biller's structured reference corresponds to the former ISR reference number.

1.3.13.2	**Creditor Reference**

Creditor Reference according to the ISO 11649 standard.

2 Design requirements and recommendations for the payment part

2.1 The basics

The following design requirements and recommendations relate to the payment part (A6 format) of the QR-bill, which can be used:

- integrated in a QR-bill in paper form
- as an enclosure to a QR-bill in paper form
- integrated in a QR-bill for e-mail bills, such as in PDF format

The recommendations regarding the payment part apply regardless of whether it is integrated in an overall form or enclosed with a bill.

The payment part, whether integrated in a bill or as an enclosure, must mandatorily be placed in the lower, right-hand corner. Only in this way can two, clean cutting edges be created, which are necessary for automated scanning processes. The placement of the payment part in the lower left corner is not possible because this corner is often used by billers for controlling the enveloping process.

Perforation of the payment part is not required, but it is recommended. If no perforation is used, then the A6 format must be indicated with lines.

If information about the amount and debtor are not imprinted during the billing process, then corresponding fields are to be provided for handwritten supplementation (see figures 3,4 and 11). Other handwritten supplementations are not permitted.

Only the defined headings and titles may be imprinted (see part 2.4 Correspondence language) for the individual sections (see part 2.5 Payment part sections).

Use of payment part as an advertising platform or advertising is not permitted. Its reverse side may not be imprinted.

2.2 Paper format and quality

The payment part must be in DIN A6 format horizontal format (148 mm x 105 mm), printed on natural white or white paper, between at least 80 g/m² and a maximum of 100 g/m². The use of certified recycled, FSC and TCF papers is permitted. Neither coated nor reflecting standard paper may be used.

2.3 Fonts and font sizes

Only the sans-serif fonts OCR-B, Arial, Frutiger and Helvetica are permitted in black. Type may not be in italic nor underlined.

The type size must be at least 6 pt and maximum 12 pt in size. This also applies for headings, whereas they are always to be depicted in the same size in the "Scheme", "Amount" and "Information" sections and 2 pt smaller than the type size of the corresponding values.

2.4 Correspondence language

The QR-bill can be produced in the correspondence languages German, French, Italian and English. The biller is free to choose the correspondence language used. The terms to be used in the respective correspondence languages are listed in multiple languages in Annex B: Multilingual headings.

2.5 Sections of the payment part

The following illustration depicts the five sections of the payment part. The contents are described in the following chapters.
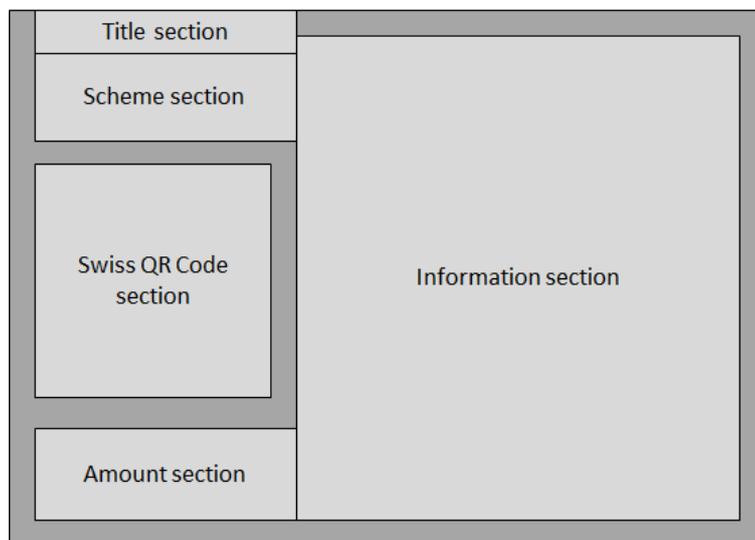
Figure 3:   Schematic illustration of a QR-bill

The spaces between the sections – darker in color in figure 3 – are mandatory, must be at least 5 mm in height and width, and may not be printed.

2.5.1 Title section

The heading "QR-bill payment part" must be printed in the title section in 11 pt type.

2.5.2 Alternative schemes section

The heading "supports" must be printed in bold in the process section and beneath the "credit transfer" scheme. Next to it, all supported alternative schemes can be printed in the chosen correspondence languages in continuous text, separated by commas – specifically, listed as long as the elements planned for this are filled in the Swiss QR Code. Further information about the alternative schemes can be found on PaymentStandards.CH.

2.5.3 Swiss QR Code section

In the Swiss QR Code section, the maintaining of the 5 mm wide border ensures that the Swiss QR Code can be read without problems.

2.5.4   Amount section

The amount section includes the currency and the amount. Towards this end, each bit of information must be marked with a heading. The currencies CHF and EUR are supported. The currency codes CHF or EUR must be printed to the left in front of the amount or the amount field.

If the amount is included in the Swiss QR Code, then it must be printed after the currency code. Inverted commas must be used as thousands separators. The amount must always be printed with two decimal places, whereby only a period (".") is permitted as a decimal separator.

If no amount is contained in the Swiss QR Code, then a colorless field with black corner marks must be printed. It must have the dimensions: 1.5 x 4.0 cm. The amount must be added by the payer by hand in this case.
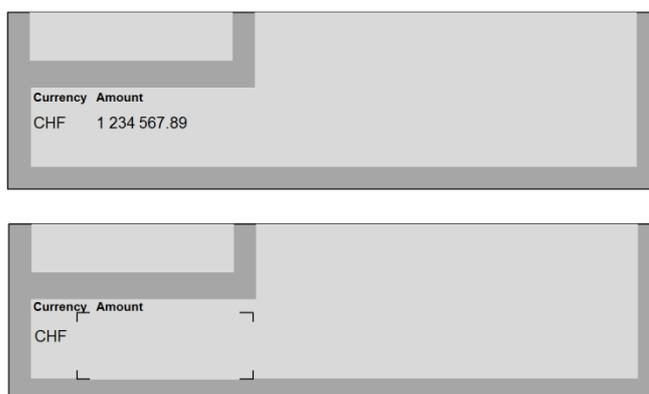
Figure 4: Schematic depiction of the amount section

2.5.5   Information section

All values relevant for a payment from the Swiss QR Code must be printed in the information section. While doing so each bit of information must be marked with a heading. The following values **must, if they are contained in the Swiss QR Code**, exist in the following listed order:

Heading	Comments
Account	Account to be credited from the Swiss QR Code
Creditor	Holder of the listed account
Final creditor	Corresponds to the name of the biller, if this is not the holder of the listed account.
Reference number	QR reference or Creditor Reference (ISO 11649)
Additional information	Additional information for the bill recipient
Debtor	If the debtor is not listed in the Swiss QR Code, then a colorless field with black corner marks must be printed (see figure 4, right). It must at least measure 2.5 x 6.5 cm. A corresponding file is available at PaymentStandards.CH.
Payable by	Corresponds to the due date proposed by the biller.

Table 3:   Headings in the details section

<u>Comments</u>

Use of the above-listed headings (see Annex B: Multilingual headings) is mandatory and they may not be changed, if they are contained in the Swiss QR Code.
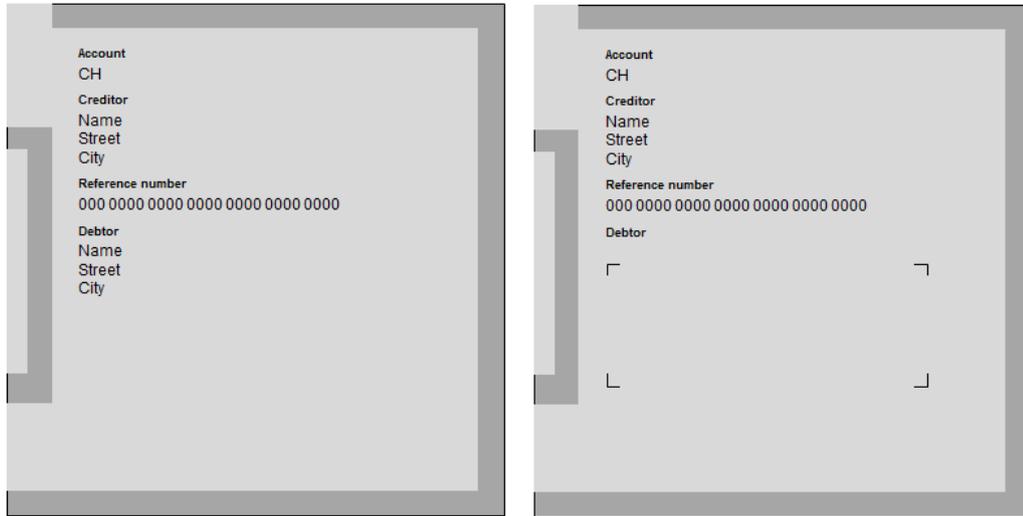
Figure 5: Schematic depiction of the information section

2.6 Notes about the QR-bill in PDF format

PDF bills are only suitable for e-/m-banking payments but not for paper-based payment traffic. The printing of PDFs can lead to format changes. This can lead to processing problems and higher costs.

3   Swiss QR Code database

3.1   In general

The database of the Swiss QR Code is oriented upon the Swiss Implementation Guidelines for Credit Transfers for the ISO 20022 "Customer Credit Transfer Initiation" message (pain.001).

3.2   Technical specifications

3.2.1   Character set

According to the Swiss standard, in the Swiss QR Code, for reasons of compatibility with the Swiss Implementation Guidelines for Credit Transfers for the ISO 20022 "Customer Credit Transfer Initiation" message (pain.001), only the Latin character set is permitted.

3.2.2   Permitted characters in the field definitions

Characters	Field definitions
general	Character set as stipulated in part 3.2.1
numeric	0–9
alphanumeric	A–Z a-z 0–9
decimal	0–9 plus decimal separator "."

Table 4:   Characters permitted

3.2.3   Field lengths

The field lengths specified represent maximum lengths for the individual elements.

It is not permitted to fill in the elements with blanks up to the maximum length.

3.2.4   Separator element

The individual elements in the Swiss QR Code according to the Swiss standard are separated from one another with a carriage return (CR + LF).

The carriage return is eliminated after the final element.

| 3.2.5 | **Delivery of the data elements** |

All data elements must be present. If the information of the data element is not available, then at least one carriage return (CR + LF) must take place.

The sole exceptions to this are additional data elements marked with "A" (alternative scheme). These can be eliminated if not needed.

The last data element delivered may not be completed with a concluding carriage return (CR + LF).

| 3.2.6 | **Data groups** |

The data groups highlighted in light blue in Table 6 (QR code data elements) serve solely for depiction of the technical context and the definition of common rules.

Such data groups may not be delivered in the Swiss QR Code.

If a data group is used, in those marked with "optional", all sub-elements marked as "dependent" must be filled.

3.3   Data structure

Table 6 (QR code data elements) specifies all elements relevant for the Swiss QR Code.

| 3.3.1 | **Depiction conventions** |

The following depiction conventions apply for this document.

Table 6 (QR code data elements) about the data structure contains the following columns and information

1. Data structure
   - Logical data structure, defined data groups (name of the data group always in the blue fields) which logically belong to one another.

2. Element name
   - Technical element name

3. General definition
   - Technical definitions and terms

4. Field definition
   - Technical field definitions

Status

The following status values (information about usage) are possible for the individual elements:

Status (St)	Designation	Description
M	Mandatory	Field must mandatorily be delivered filled.
D	Dependent	Field must mandatorily be filled if the superordinate optional data group is filled.
O	Optional	Field must mandatorily be delivered, but not necessarily filled (can be empty).
A	Additional	Field does not necessarily have to be delivered.

Table 5:   Status of the elements

Coloring in the tables

Data elements that contain at least one sub-element represent so-called data groups and are colored light blue.

Depiction of the logical structure in the tables

To be able to recognize where in the logical structure of the Swiss QR Code an element is positioned, the nesting depth is indicated with a "+" sign placed in front of the "Data structure" column. For example, the IBAN in the "Creditor information" is shown as follows:

QRCH

+CdtrInf

++IBAN

Depiction of deviations in naming of individual elements in the payment part

A name is listed in the table for individual elements that differs from the field names, which is to be used as a heading in the information section in the payment part. This name is listed in the tables *in italics and in blue* beneath the name of the element.

IBAN *Account* IBAN or QR-IBAN of the creditor

Figure 6:   Technical element name and name for the payment part

If a deviating name in the table is given for a data group with a blue background, then this summarizing name applies for the related sub-element.

Creditor *Creditor*

Figure 7:   Data group with technical element name and technical name for the payment part

QR elements		Swiss QR definition		
Data structure	Element name	St.	General definition	Field definition
QRCH +Header	Header		**Header** Header data. Contains basic information about the Swiss QR Code	Mandatory data group
QRCH +Header ++QRType	QRType	M	**QR Type** Unambiguous indicator for the Swiss QR Code. Fixed value "SPC" (Swiss Payments Code)	Fixed length: three-digit, alphanumeric
QRCH +Header ++Version	Version	M	**Version** Contains version of the specifications (Implementation Guidelines) in use on the date on which the Swiss QR Code was created. The first two positions indicate the main version, the following two positions the sub-version. Fixed value of "0100" for Version 1.0	Fixed length: four-digit, numeric
QRCH +Header ++Coding	Coding	M	**Coding type** Character set code. Fixed value 1 (indicates Latin character set)	One-digit, numeric
QRCH +CdtrInf	CdtrInf		**Creditor information**	Mandatory data group
QRCH +CdtrInf ++IBAN	IBAN	M	**IBAN** *Account* IBAN or QR-IBAN of the creditor.	Fixed length: 21 alphanumeric characters, only IBANs with CH or LI country code permitted.
QRCH +CdtrInf ++Cdtr	Cdtr		**Creditor** *Creditor*	Mandatory data group
QRCH +CdtrInf ++Cdtr +++Name	Name	M	**Name** The creditor's name or company according to the account name. Comment: always matches the account holder	Maximum 70 characters permitted First name (optional, if available) + last name or company name
QRCH +CdtrInf ++Cdtr +++StrtNm	StrtNm	O	**Street** Street/P.O. box of the creditor	Maximum 70 characters permitted, may not include any house or building number.
QRCH +CdtrInf ++Cdtr +++BldgNb	BldgNb	O	**House number** House number of the creditor	Maximum 16 characters permitted

QR elements		Swiss QR definition		
Data structure	Element name	St.	General definition	Field definition
QRCH +CdtrInf ++Cdtr +++PstCd	PstCd	M	**Postal code** Postal code of the creditor	Maximum 16 characters permitted. The postal code is always to be entered without a country code prefix.
QRCH +CdtrInf ++Cdtr +++TwnNm	TwnNm	M	**City** City of the creditor	Maximum 35 characters permitted
QRCH +CdtrInf ++Cdtr +++Ctry	Ctry	M	**Country** Country of the creditor	Two-digit country code according to ISO 3166-1
QRCH +UltmtCdtr	UltmtCdtr		**Ultimate creditor** *Ultimate creditor* Information about the ultimate creditor	Optional data group; may only be used in agreement with the creditor's financial institution
QRCH +UltmtCdtr ++Name	Name	D	**Name** Name or company of the ultimate creditor	Maximum 70 characters permitted. first name (optional, if available) and last name or company name.
QRCH +UltmtCdtr ++StrtNm	StrtNm	O	**Street** Street/P.O. box of the ultimate creditor	Maximum 70 characters permitted; may not include any house or building number.
QRCH +UltmtCdtr ++BldgNb	BldgNb	O	**House number** House number of the ultimate creditor	Maximum 16 characters permitted
QRCH +UltmtCdtr ++PstCd	PstCd	D	**Postal code** Postal code of the ultimate creditor	Maximum 16 characters permitted; is always to be entered without a country code prefix.
QRCH +UltmtCdtr ++TwnNm	TwnNm	D	**City** City of the ultimate creditor	Maximum 35 characters permitted
QRCH +UltmtCdtr ++Ctry	Ctry	D	**Country** Country of the ultimate creditor	Two-digit country code according to ISO 3166-1

QR elements		Swiss QR definition		
Data structure	**Element name**	**St.**	**General definition**	**Field definition**
QRCH +CcyAmtDate	CcyAmtDate		**Payment amount information**	Mandatory data group
QRCH +CcyAmtDate ++Amt	Amt	O	**Amount** The payment amount	The amount element is to be entered without leading zeroes, including decimal separators and two decimal places. Decimal, maximum 12-digits permitted, including decimal separators. Only decimal points (".") are permitted as decimal separators.
QRCH +CcyAmtDate ++Ccy	Ccy	M	**Currency** The payment currency, 3-digit alphanumeric currency code according to ISO 4217	Only CHF and EUR are permitted.
QRCH +CcyAmtDate ++ReqdExctnDt	ReqdExctnDt	O	**Date** *Due date* Due date on which, according to the biller, the payment should be paid, at the latest (according to the payment conditions)	Ten-digit; if delivered, the date must be entered in the format YYYY-MM-DD.
QRCH +UltmtDbtr	UltmtDbtr		**Ultimate debtor** *Debtor*	Optional data group
QRCH +UltmtDbtr ++Name	Name	D	**Name** Name or company of the ultimate debtor	Maximum 70 characters permitted; first name (optional, if available) and last name or company name.
QRCH +UltmtDbtr ++StrtNm	StrtNm	O	**Street** Street/P.O. Box of the ultimate debtor	Maximum 70 characters permitted; may not include any house or building number.
QRCH +UltmtDbtr ++BldgNb	BldgNb	O	**House number** House number of the ultimate debtor	Maximum 16 characters permitted
QRCH +UltmtDbtr ++PstCd	PstCd	D	**Postal code** Postal code of the ultimate debtor	Maximum 16 characters permitted; is always to be entered without a country code prefix.
QRCH +UltmtDbtr ++TwnNm	TwnNm	D	**City** City of the ultimate debtor	Maximum 35 characters permitted
QRCH +UltmtDbtr ++Ctry	Ctry	D	**Country** Country of the ultimate debtor	Two-digit country code according to ISO 3166-1

QR elements		Swiss QR definition		
Data structure	**Element name**	**St.**	**General definition**	**Field definition**
QRCH +RmtInf	RmtInf		**Payment reference**	Mandatory data group
QRCH +RmtInf ++Tp	Tp	M	**Reference type** Reference type (QR, ISO) The following codes are permitted: QRR – QR reference SCOR – Creditor Reference (ISO 11649) NON – without reference	Maximum four characters, alphanumeric; with the use of a QR-IBAN must contain the QRR code or SCOR.
QRCH +RmtInf ++Ref	Ref	O	**Reference** *Reference number* Structured payment reference Note: The reference is either a QR reference or a Creditor Reference (ISO 11649)	Maximum 27 characters, alphanumeric; must be filled if a QR-IBAN is used. QR reference: 27 characters, numeric, check sum calculation according to Modulo 10 recursive (27th position of the reference) Creditor Reference (ISO 11649): up to 25 characters, alphanumeric. The element may not be filled for the NON reference type.
QRCH +RmtInf ++Ustrd	Ustrd	O	**Unstructured message** *Additional information* Additional information can be used for the scheme with message and scheme with structured reference to provide additional information to the biller. For the transmission of structured additional information to the debtor, the details in the "creditor's structured information" section must be adhered to.	Maximum 140 characters
QRCH +AltPmtInf	AltPmtInf		**Alternative schemes** Parameters and data of other supported schemes	Optional data group with a variable number of elements
QRCH +AltPmtInf ++AltPmt	AltPmt	A	**Alternative scheme parameters** Parameter character chain of the alternative scheme according to the syntax definition in the "Alternative scheme" section	Can be currently delivered a maximum of two times. Maximum 100 characters

Table 6:   Swiss QR Code data elements

3.4　　　　　Technical specifications

Mapping of the data in the Swiss QR Code in the ISO 20022 pain.001 message is described in the Swiss "Implementation Guidelines for Credit Transfers" (pain.001).

3.4.1　　　　Customer references

Structured reference as "payment reference"

The two following types of structured references can be delivered in the "Reference" element:

- **Use of the Swiss QR reference**

  In Switzerland, the QR reference (see part 1.4.13.1 QR reference) makes possible the automatic comparison between his bills and incoming payments for the creditor.

- **Use of the Creditor Reference**

  The Creditor Reference (ISO 11649) makes possible the automatic comparison between his bills and incoming payments for the creditor.

3.4.2　　　　Use of the "unstructured message" element

In the "unstructured message" element, the biller's unstructured and/or structured information can be delivered. The following rules apply in the process:

1. The unstructured part (text) must be placed at the beginning of the field.
2. The switch to the structured part must be marked by the character series "##".
3. The rest of the field (von "##" to the end of the field) contains structured information.

The Swiss banks do not stipulate the structure of this structured information because the individual needs of the various sectors should be handled. Therefore, a flexible solution was defined, which allows the parallel use of different encodings for the structured information. For this purpose, the first two characters (after "##") are reserved as code for the rule used, which defines how the remaining characters in this field are to be interpreted. Further information about the encoding can be found at PaymentStandards.CH.

3.4.3　　　　Depiction of the customer reference in the ISO 20022 pain.001 payment message

The above-listed options for the provision of a customer reference are to be delivered when generating a pain.001 payment message as follows:

3.4.3.1   Scheme with structured reference without additional information
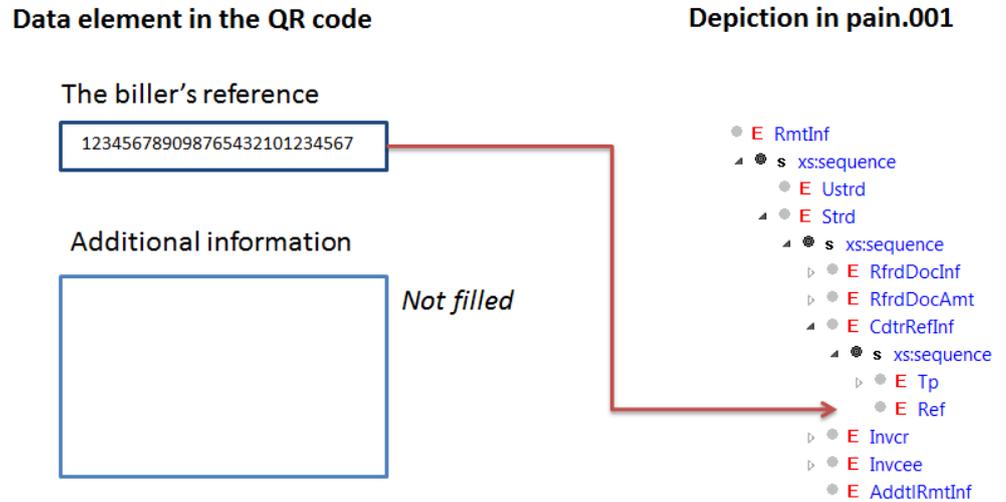

Figure 8:   pain.001 – Scheme with structured reference without additional information

QR element/Content	pain.001 element	pain.001 element content
Reference QR reference or Creditor Reference (ISO 11649)	RmtInf/Strd/CdtrRefInf/Ref	Structured reference (QR, SCOR)

Table 7:   Structured reference in pain.001

3.4.3.2   Scheme with structured reference with additional information
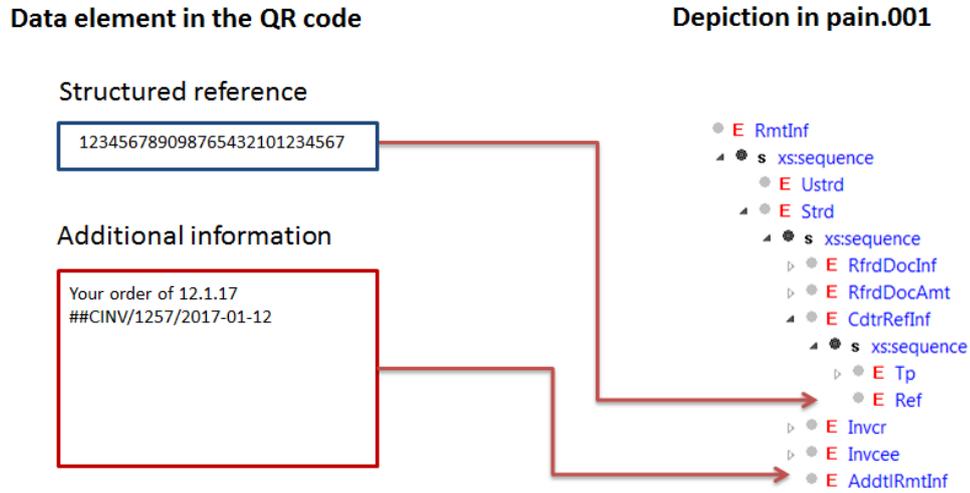

Figure 9:   pain.001 – Scheme with structured reference with additional information

QR element/Content	pain.001 element	pain.001 element content
Reference QR reference or Creditor Reference (ISO 11649)	RmtInf/Strd/CdtrRefInf/Ref	Structured reference (QR, SCOR)
Unstructured message	RmtInf/Strd/AddtlRmtInf	The biller's additional information

Table 8:   Structured reference with additional information in pain.001
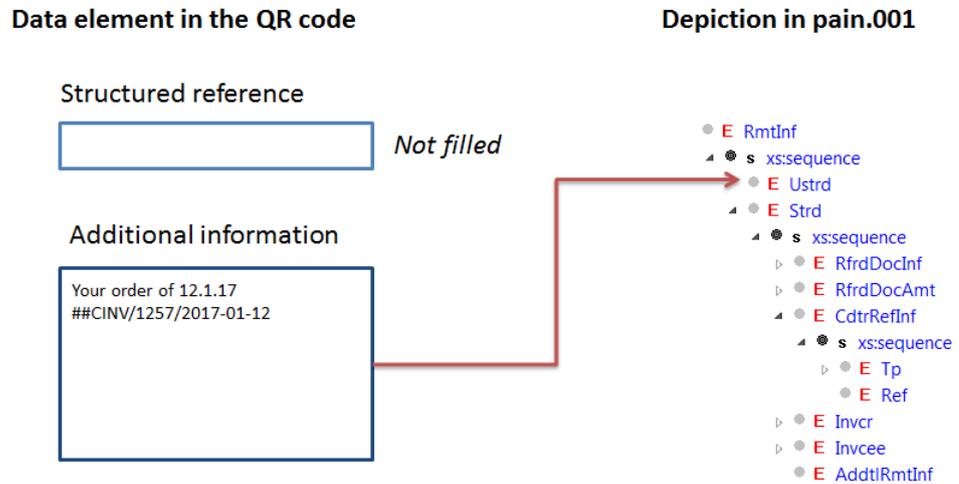
3.4.3.3 Scheme with message

Figure 10: pain.001 – Scheme with message

QR element/Content	pain.001 element	pain.001 element content
Unstructured message	RmtInf/Ustrd	The biller's additional information

Table 8: Biller's additional information in pain.001

3.4.4 Alternative schemes

Data for alternative schemes can be delivered in the Swiss QR Code in the context of payments in the "Alternative scheme parameters" element. The element may be delivered twice at the most according to these Implementation Guidelines.

While filling this element the following fundamental rules are to be observed:

- The first two characters (alphanumeric) are the indicators for the alternative scheme.

- The next character must contain the sub-element separator used.

- An unlimited number of sub-elements can be delivered within the permitted field length of the element.

The data in the alternative scheme element is only interpreted and used by the corresponding scheme.

It solely serves the debtor for the easy use of this scheme.

Further information can be found at PaymentStandards.CH.

3.4.5 Use of address information

The addresses of the parties involved, such as the "creditor" must be placed in the "Name" element and in the "Street", "Building number", "Postal code", "City" and "Country" elements. The "Street" element is to be used to enter a P.O. Box.

The address information is always to be provided in a structured manner in the data elements intended for it. An unstructured delivery of address data; i.e., exclusively in the "Street" element, is not permitted.

3.4.6 The payment amount

The "Amount" element is to be entered without leading zeroes, including decimal separators and with two decimal places. The "." symbol is to be used as a decimal separator.

The "Amount" element need not be filled in the Swiss QR Code.

3.5 Rules for processing

The following rules apply for payment instructions to financial institutions as well as to payments at post office counters. They relate to their solutions for reading from the Swiss QR Code and further processing. This especially applies for scanning solutions (physical payment instructions) as well as for mobile end devices (mobile banking). Producers of software solutions must adhere to these rules in order to enable smooth processing.

3.5.1 Checking of field contents

Before the further processing of the values read from the Swiss QR Code, individual field contents that are listed in the Implementation Guidelines must be checked. This means that:

- The content must match a valid value; this applies for QR type, the version, the coding type and the currency.

- The general specifications according to Nr. 3.2 of the Technical Specifications, must be adhered to.

- The value must be syntactically correct; this applies for the amount (if entered), account (IBAN/QR-IBAN), reference type (QRR/SCOR/NON) and, if present, the biller's reference (QR reference, Creditor Reference (ISO 11649).

3.5.2 Meta data

The following elements from the Swiss QR Code (data group header) will never be forwarded with the payment:

- QR type
- Version
- Coding type

4   Parameters for generating the code

The following points are binding for generating the Swiss QR Code.

4.1   Error correction level

The code generation must take place with error correction level "M", which means a redundancy or assurance of around 15%.

4.2   Maximum data range and QR code version

The maximum Swiss QR Code data content permitted is 997 characters (including the element separators). The version of the QR Code resulting with error correction level "M" and binary coding is version 25 with 117 x 117 modules.

4.3   Minimum module size

To guarantee the secure scanning of the Swiss QR Code, a minimum module size of 0.4 mm is recommended for printing.

4.4   Measurements of the Swiss QR Code for printing

The measurements of the Swiss QR Code for printing must always be 46 x 46 mm (without surrounding quiet space) regardless of the Swiss QR Code version. Depending on the printer resolution, the Swiss QR Code produced must be enlarged or reduced accordingly. This must occur on the basis of a vector graphic in order to maintain the quality of the Swiss QR Code.
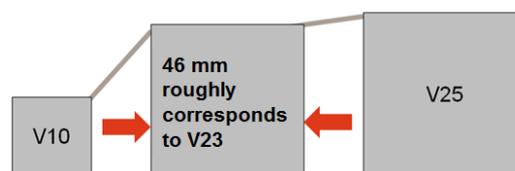

Figure 11:   Scaling of the Swiss QR Code to fixed sizes

4.4.1   Quiet space according to ISO 18004

To ensure the readability of the Swiss QR Code, an unprinted border must be provided around the Swiss QR Code corresponding to the width of four modules (corresponds to >= 1.6 mm).

In the design recommendations, this border was expanded to five mm to improve user-friendliness (see 2.5.3 Swiss QR Code section).

4.4.2   Recognition characters

To increase the recognizability and differentiation for users, the Swiss QR Code created for printout is to be overlaid with a Swiss cross logo measuring 7 x 7 mm.

A corresponding file with the logo can be downloaded from the website's download section at PaymentStandards.CH.

*Figure 12:   Swiss QR Code with Swiss cross as recognition feature
(not true to scale)*

Annex A: Examples

The following abbreviations and symbols are used in the examples below:

¶   =   CR + LF

CR   =   Creditor

UCR =   Ultimate creditor

UD   =   Ultimate debtor

APn =   Alternative scheme n

Table 9:   Abbreviations used in the examples

Data example for the QR code with two additional schemes and structured biller information:

Element as described in part 3.3 Data structure (partially shortened)	Filling
QR type	SPC¶
Version	0100¶
Coding type	1¶
Account	CH4431999123000889012¶
CR – Name	Robert Schneider AG¶
CR – Street	Rue du Lac¶
CR – House number	1268/2/22¶
CR – Postal code	2501¶
CR – City	Biel¶
CR – Country	CH¶
UCR – Name	Robert Schneider Services Switzerland AG¶
UCR – Street	Rue du Lac¶
UCR – House number	1268/3/1¶
UCR – Postal code	2501¶
UCR – City	Biel¶
UCR – Country	CH¶
Amount	123,949.75¶
Currency	CHF
Due date	2019-10-31¶
UD – Name	Pia-Maria Rutschmann-Schnyder¶
UD – Street	Grosse Marktgasse¶
UD – House number	28¶
UD – Postal code	9400¶
UD – City	Rorschach¶
UD – Country	CH¶
Reference type	QRR¶
Reference	210000000003139471430009017¶
Additional information	Instruction of 15.09.2019##S1/01/20170309/11/10201409/20/14000000/22/36958/30/CH106017086/40/1020/41/3010¶
AP1 – Parameters	UV1;1.1;1278564;1A-2F-43-AC-9B-33-21-B0-CC-D4-28-56;TCXVMKC22;2019-02-10T15: 12:39; 2019-02-10T15:18:16¶
AP2 – Parameters	XY2;2a-2.2r;_R1-CH2_ConradCH-2074-1_33 50_2019-03-13T10:23:47_16,99_0,00_0,00_0,00_0,00_+8FADt/DQ=_1==

QR-bill payment part

Supports
Credit transfer, procedure 1,
procedure 2

Account
CH44 3199 9123 0008 8901 2
Creditor
Robert Schneider SA
Rue du Lac 1268
CH-2501 Bienne
Ultimate creditor
Robert Schneider Services Switzerland SA
Rue du Lac 1268
CH-2501 Bienne
Reference number
210 0000 0000 3139 4714 3000 9017
Additional information
Order of 15.09.2019
##S1/01/20170309/11/10201409/20/14000000/2
2/36958/30/CH106017086/40/1020/41/3010
Debtor
Pia-Maria Rutschmann-Schnyder
Grosse Marktgasse 28
CH-9400 Rorschach
Due date
30.10.2019

Currency   Amount
CHF   1 949.75

Figure 13:   Swiss QR Code example 1 (not true to scale)

Data example for QR code without amount (donation), without debtor and with unstructured additional information, as well as without alternative scheme:

Element as described in part 3.3 Data structure (partially shortened)	Filling
QR type	SPC¶
Version	0100¶
Coding type	1¶
Account	CH3709000000304442225¶
CR – Name	Salvation Army Foundation Switzerland¶
CR – Street	¶
CR – House number	¶
CR – Postal code	3000¶
CR – City	Berne¶
CR – Country	CH¶
UCR – Name	¶
UCR – Street	¶
UCR – House number	¶
UCR – Postal code	¶
UCR – City	¶
UCR – Country	¶
Amount	¶
Currency	CHF¶
Due date	¶
UD – Name	¶
UD – Street	¶
UD – House number	¶
UD – Postal code	¶
UD – City	¶
UD – Country	¶
Reference type	NON¶
Reference	¶
Additional information	Donation to the Winterfest Campaign

QR-bill payment part

Supports
Credit transfer

Account
CH37 0900 0000 3044 4222 5
Creditor
Salvation Army Foundation Switzerland
CH-3000 Bern
Additional information
Donation to the Winterfest campaign
Debtor

Currency   **Amount**
CHF

Figure 14:   Swiss QR Code example 2 (not true to scale)

Data example for QR code with structured reference without additional information and without alternative scheme:

Element as described in part 3.3 Data structure (partially shortened)	Filling
QR type	SPC¶
Version	0100¶
Coding type	1¶
Account	CH4431999123000889012¶
CR – Name	Robert Schneider AG¶
CR – Street	Rue du Lac¶
CR – House number	1268/2/22¶
CR – Postal code	2501¶
CR – City	Biel¶
CR – Country	CH¶
UCR – Name	Robert Schneider Services Switzerland AG¶
UCR – Street	Rue du Lac¶
UCR – House number	1268/3/1¶
UCR – Postal code	2501¶
UCR – City	Biel¶
UCR – Country	CH¶
Amount	199.95¶
Currency	CHF¶
Due date	2019-10-31¶
UD – Name	Pia-Maria Rutschmann-Schnyder¶
UD – Street	Grosse Marktgasse¶
UD – House number	28¶
UD – Postal code	9400¶
UD – City	Rorschach¶
UD – Country	CH¶
Reference type	SCOR¶
Reference	RF18539007547034¶

QR-bill payment

Supports
Credit transfer

Account
CH44 3199 9123 0008 8901 2
Creditor
Robert Schneider AG
Via Casa Postale 1268/2/22
CH-2501 Biel
Ultimate creditor
Robert Schneider Services Switzerland AG
Via Casa Postale 1268/3/1
CH-2501 Biel/Bienne
Reference number
210 0000 0000 3139 4714 3000 9018
Debtor
Pia-Maria Rutschmann-Schnyder
Grosse Marktgasse 28/5
CH-9400 Rorschach
Due date
31.10.2019

Currency   **Amount**
CHF   199.99

Figure 15:   Swiss QR Code example 3 (not true to scale)

Annex B: Multilingual headings

German	French	Italian	English
Zahlteil QR-Rechnung	Section paiement QR-facture	Sezione pagamento QR-fattura	QR-bill payment part
Unterstützt	Support	Sostiene	Supports
Überweisung	Virement	Bonifico	Credit transfer
Konto	Compte	Conto	Account
Zahlungsempfänger	Bénéficiaire	Beneficiario	Creditor
Endgültiger Zahlungsempfänger	Bénéficiaire final	Beneficiario finale	Ultimate creditor
Referenznummer	Numéro de référence	Numero di riferimento	Reference number
Zusätzliche Informationen	Informations supplémentaires	Informazioni supplementari	Additional information
Zahlungspflichtiger	Débiteur	Debitore	Debtor
Zahlbar bis	À payer jusqu'au	Da pagare entro il	Due date
Währung	Monnaie	Valuta	Currency
Betrag	Montant	Importo	Amount

Table 10:   Multilingual headings

Annex C: Parties involved in a credit transfer
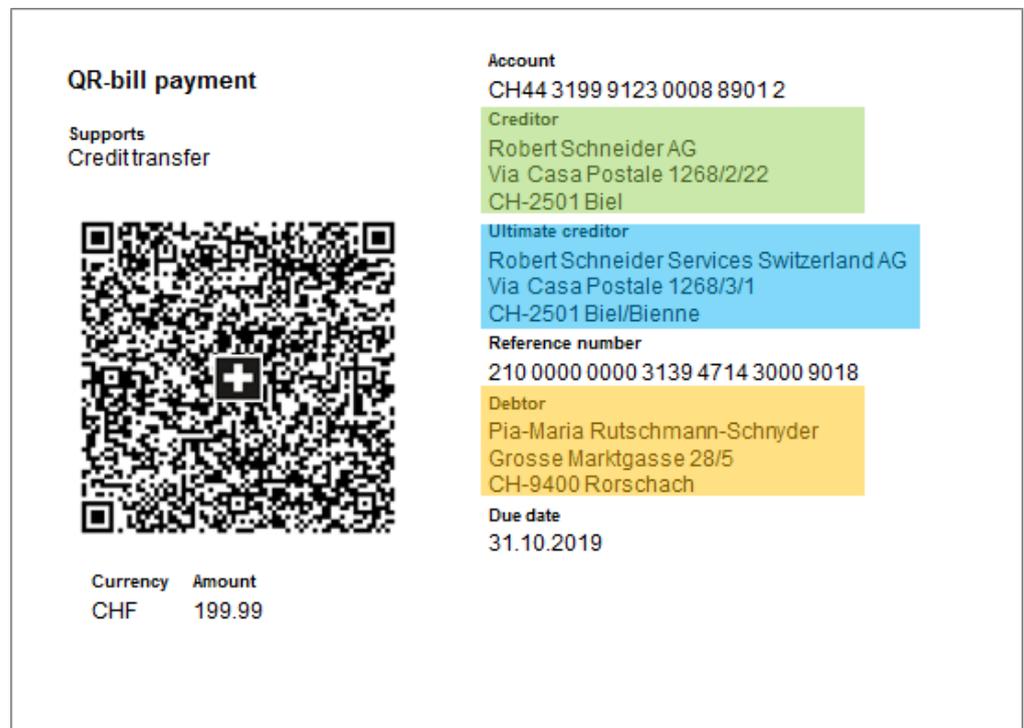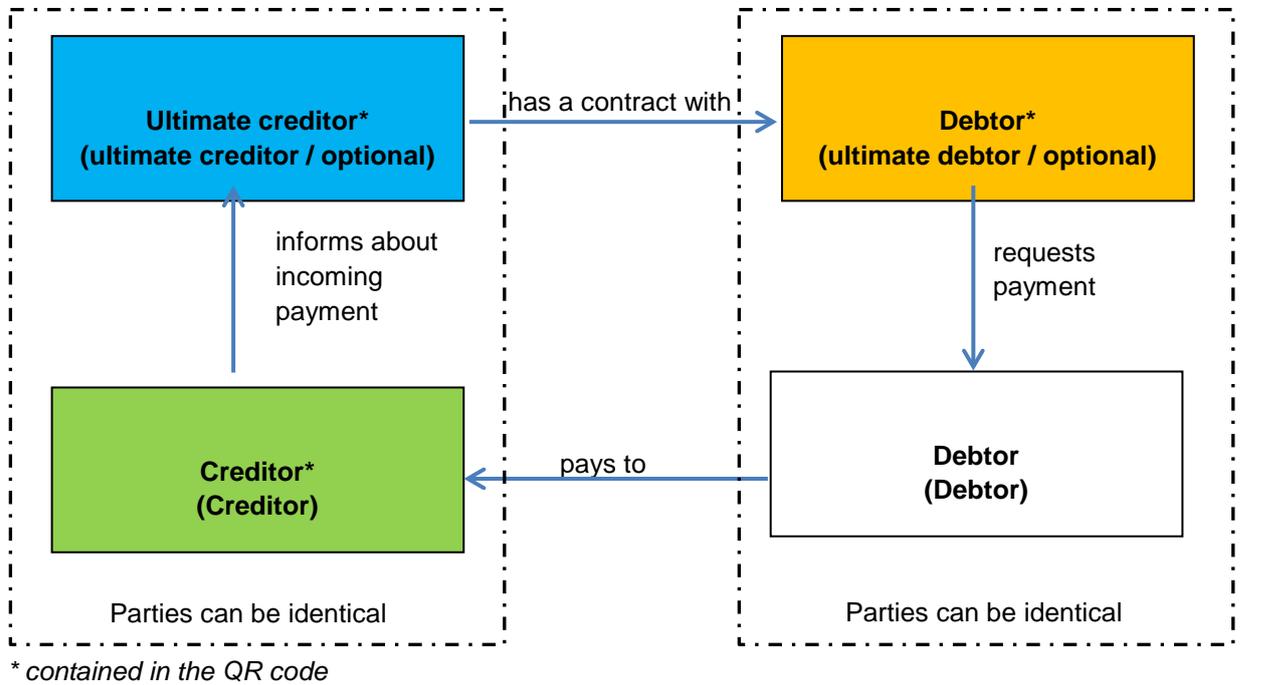
Figure 16: Parties involved in a credit transfer

Annex D: Index of tables and figures