Swiss Market Practice Guidelines EBICS

EBICS 3.0

Recommendations for implementing the EBICS standard

Version 1.2, valid from 10 July 2023

Change History

All changes made to this document are listed below with the version number, change date, a brief description of the change and the validity from date.

Version	Date	Description of the change	Valid from
1.2	10.07.2023	Revisions to chapter 5.4.1 '"Version" attribute'	10.07.2023
1.1	29.10.2021	Revisions to chapter 6.1 "Initialization using pairs of keys" regarding X.509 certificates	15.11.2021
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Table 1: Change history

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Table of Contents

Table of Tables

Table of Figures

1 Introduction

The EBICS working group commissioned by the PaCoS (Payments Committee Switzerland) has produced Swiss Recommendations for implementing the EBICS standard in the Swiss financial services sector. This is documentation of the EBICS configuration settings and parameters used by the financial institutions for the Swiss financial services sector. The document is intended to provide assistance to software partners and users and provides relevant recommendations according to best practice. The use of EBICS is optional for institutions in Switzerland.

With the EBICS standard, there is now an industry standard for financial services in the European area that has established itself across all sectors. In Germany, it has been mandatory for financial institutions to support this standard since January 2008.

Following the foundation of the Franco-German company EBICS SCRL in June 2010, this standard has become even more widespread in versions since 2.4 because it is used in both Germany and France. In particular, the publication of joint Implementation Guidelines has led to wider distribution of the standard.

1.1 Purpose of the document, and its target group

This document supplements documentation published by EBICS SCRL (see references [1] – [5]) and is intended primarily for software developers and system administrators.

It is intended to document the specific conventions relating to the use of EBICS in the Swiss financial services sector.

1.2 Scope

This document describes the use of the EBICS standard in Switzerland.

Since, in some respects, the EBICS standard allows for different implementation options, the Swiss financial services sector has decided to agree on certain options and apply them consistently.

The document describes only these implementation decisions which have been agreed upon.

Financial institutions are also free to support other variants provided for under the standard and these will then be regulated in the financial institution’s own documentation.

1.3 Reference documents

Ref	Document	Title	Source
	Base documents		
[1]	2017-03-29-EBICS_V_3.0-FinalVersion.pdf	EBICS Specification	EBICS
[2]	2017-03-29-EBICS Common IG basierend EBICS 3.0.pdf	Common Implementation Guide EBICS 3.0	EBICS
[3]	EBICS 3.0 schema H005FinalVersion07-08-2017.zip	EBICS 3.0-schema files (.xsd) with types, order types, data structures and functions.	EBICS
[4]	2017-03-29-EBICS Common IG basierend EBICS 3.0.pdf	Common Implementation Guide EBICS 3.0	EBICS
[5]	EBICS security concept	Can be obtained on request at info@ebics.de	EBICS
	Additional documents		
[6]	EBICS Version 3.0 FinalDE-29-03-2017.pdf	Appendix 1 of the interface specification for remote data transmission between customer and credit institution in accordance with the RDT [remote data transmission] agreement "Specification for the EBICS connection" Version 3.0	DK
[7]	EBICS_Anhang_TransportLayerSecurityDE-29-03-2017.pdf	EBICS Appendix "Transport Layer Security"	DK
[8]	2019-07-04-Mapping_EBICS-BTF-AA-Sortiert_wie_Anlage_3_zzgl_SonstigerThemen.pdf	Mapping_EBICS-BTF-AA (Germany)	DK
[9]	20180808113947EBICS3.0 aide a la migration V1.1.pdf	Mapping_EBICS-BTF-FileFormat-Parameters (France)	CFONB
[10]	EBICS_BTF_Parameter_CH.pdf	BTF parameters CH	SIX

Table 2: Reference documents

1.4 Links to the relevant Internet pages

Organization	Link
CFONB	www.cfonb.org
DK (ZKA)	www.ebics.de (German)
EBICS	www.ebics.org (English)
SIX (SIX Interbank Clearing)	www.iso-payments.ch www.paymentstandards.ch www.ebics.ch

Table 3: Links to internet pages

2 Use of EBICS in the Swiss financial services sector

2.1 EBICS basic principles

The basic principles of EBICS are documented in detail on the EBICS SCRL website.

2.2 Applicable EBICS specification

This document regards version 3.0 of the EBICS specification [1].

From November 2021, the Swiss financial institutions that offer EBICS will support version 3.0 server-side.

Please note:

In order to use version 3.0, co-ordination with the respective financial institution is required.

However, where EBICS has already been implemented in Switzerland, this is based on EBICS specification version 2.5 and can continue to be offered unchanged by the financial institutions. Nevertheless, it is recommended that new customer connections are implemented on the basis of the specifications in this document.

2.2.1 EBICS timeline

With the introduction of EBICS 3.0, the mandatory support of EBICS version 2.4 will expire and from this point on will no longer be officially supported by the financial services sector.

Version 2.5, on which the majority of the current EBICS offers of financial institutions in Switzerland are based, will be officially supported by the financial services sector for a further three years (until the end of 2024).

Please note:

The use of EBICS 3.0 is required for support of the ISO 20022 schema migration to the 2019 version.

3 Security

3.1 Security aspects under the EBICS security concept

If correctly implemented, the protocol enables end-to-end security, i.e. it is a secure transport channel.

For security to be guaranteed, the EBICS security concept expects that certain conditions will be met at the end points – the financial institution and the customer.

The financial institution, the software manufacture that has mapped the EBICS protocol in its solution and the customer are responsible for implementing these points.

For use in the Swiss financial services sector, the following points regarding the customer's system from the EBICS security concept must be contractually agreed between the parties before any use.

The customer is responsible for the following:

- Internal communication channels for unencrypted technical banking data and unencrypted electronic signatures are protected against interception and manipulation.
- Internal communication channels for EBICS messages are protected against interception and manipulation.
- The customer is solely responsible for protecting the customer's software and internal communication channels and customer-specific solutions must be implemented.

The software developer is responsible for the following:

- The participant's private keys are protected from being read or changed by unauthorized parties.
- The bank's public keys are protected from being changed by unauthorized parties.
- The secret symmetric keys are protected against being read or changed by unauthorized parties.
- The certificate that is used as the trust anchor when checking the financial institution's TLS certificate is protected against being changed by unauthorized parties.
- The customer's software is protected against any manipulation which could mislead the participant about the progress of EBICS transactions.

The financial institution is responsible for the following:

- Guidelines for the secure storage of private/public keys form part of the financial institution's terms and conditions for customers.

3.2 TLS version and cypher

It must be taken into consideration that at least TLS version 1.2 must be mandatory used for secure file transfer on the internet [7].

3.3 Electronic signature

In Switzerland, approval for instructions sent via a direct submission interface is normally given by means of a single signature which in most cases represents a company and not an individual. This procedure is based on the premise that these instructions are sent by the customer from a secure environment, the greatest possible degree of automation is desirable and personalized signatures have been checked before transmission by the customer's software (e.g. in the customer's ERP system).

In practice, combined versions are also used, where, for example, a personalized signature is appropriate or distributed digital approval is given via the institution's online system (sometimes also by means of written approval or via fax). This approach is supported on the server side by supporting the VEU (distributed electronic signature) system.

Whether the VEU can be used depends on the contractual arrangement between the customer and the financial institutions, and on what the financial institution offers.

3.4 Key management

The following variations relating to electronic signature procedure and key length are supported in Switzerland (version "H005" of the EBICS protocol envisages the use of the following procedures):

- "X002" for the authentication signature
- "A005" or "A006" for the electronic signature
- "E002" for the encryption
- Key length: 2048 bit

The electronic signature procedures and key lengths offered by each financial institution should be agreed with the institution.

4 Order types

In EBICS 3.0, a distinction is made between administrative and (bank) technical order types.

While the administrative order types in all EBICS versions (2.x and 3.x) and variants (DE, FR) have uniform order type codes, the classification used to identify the technical order types is dependent on the EBICS version or variant used.

With the introduction of EBICS version 3, however, the country-specific classification for identifying technical order types was standardized (BTF coding).

4.1 Administrative order types

The administrative order types are used, inter alia, for the administration of the EBICS channel and include tasks such as fetching the transmission protocol, key exchange or retrieving the BTF parameters supported by the server.

The administrative order types are exhaustively documented in the EBICS Standard [1], [2].

4.2 Banking order types

The following order types are available for sending banking-related files to the financial institution or for collecting banking-related files from the financial institution:

- BTU (upload to the financial institution) and
- BTD (download from the financial institution)

4.2.1 "fileName" attribute

In addition to the specification of the technical properties of the file using the BTF parameters of the EBICS service in question, the local file name on the customer system can optionally also be specified exclusively for the **BTU** order type.

This information can make troubleshooting and support easier.

4.2.2 EBICS service

The EBICS service requested by the client is specified using the corresponding BTF parameters.

The general structure and functionality of the BTF parameters is clarified in chapter 5 "BTF parameters".

4.2.3 SignatureFlag

If the SignatureFlag is used, the EBICS server checks whether the transmitted file has been fully delivered by the sender with the required combination of electronic signatures.

If the SignatureFlag is missing, the file must be released by the customer for further processing by the financial institution outside the EBICS channel (e.g. e-banking).

4.2.4 "requestEDS" attribute

When using the optional requestEDS attribute, files with incomplete electronic signatures are not rejected by the server, but placed in the wait queue for the distributed electronic signature.

Please note:

There must be a corresponding contractual agreement with the financial institution for the use of the distributed electronic signature.

4.2.5 DateRange

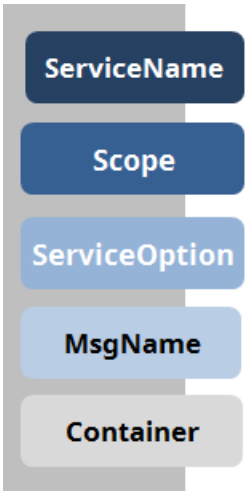
By specifying a date range, the request for the collection of files from the financial institution can only be limited in time for the BTD order type (creation date, account statement date).

Please note:

This feature is not supported by all financial institutions.

5 BTF parameters

The technical characteristic of a file and the desired EBICS service are specified in EBICS 3.0 by indicating the BTF parameters.



- Use of the existing globally defined service name code list
- Use of the globally defined scope
- Use of the global EBICS service option rules
- Definition of the CH service options
- Definition of the bilateral service options used in Switzerland with assignment of an owner code
- Message name
- Container according to EBICS code list

Figure 1: BTF parameters

In addition to the name of the service and the message designation (message standard) the "scope" (= the issuer of the technical set of rules used for the message) must also always be specified.

Further optional parameters can be specified for a fine-granular identification of the file to be transmitted.

The BTF parameters are used both for the specification of files for the transmission to the financial institution as well as for the collection from the financial institution and in administrative order types.

The EBICS BTF parameters currently used in CH and LI (depending on the institution) can be found in the document BTF parameters CH [10].

5.1 ServiceName

The ServiceName parameter is the central parameter within BTF. It identifies the corresponding EBICS service of the financial institution using a standardized code list.

The services include banking services such as the submission of payment orders or the provision of account statements and reports.

These services can be used with messages in different message standards, versions and according to different sets of rules.

The available codes for ServiceName are defined in the EBICS standard and thus guarantee a consistent, cross-market designation.

5.2 Scope

The Scope parameter defines the set of rules according to which a message file was created.

Since the specification of the message standard used is generally not sufficiently precise for a correct processing of the message file, the Scope parameter must always be supplied.

The Scope is also specified by codes defined in the EBICS standard

The code values are either:

- 2-digit ISO 3166 country codes (CH, DE, FR, ...) or
- 3-digit EBICS defined issuer codes for globally valid sets of rules (GLB for SEPA and SWIFT FIN, CGI), as well as
- the code BIL for bilaterally agreed rules.

The code CH (= SPS, Swiss Payments Standard) is used for payment traffic in CH and LI.

The Scope also influences the designation structure of the available service options.

5.3 ServiceOption

Specific sub-variants of a service can be identified using the optional ServiceOption parameter.

The structure of the ServiceOption code is dependent on the scope used.

ServiceOptions are specified by 3 to 10-digit ServiceOption codes:

- ServiceOption codes for scope = GLB are fixed 3-digit codes and are defined in the EBICS standard.
- ServiceOption codes for scope = ISO 3166 country code are a fixed 4-digit code always starting with an X in Switzerland.

Example:

XB2B – direct debit submission, without right of objection, single-origin

ServiceOption codes for scope = BIL have 5 to 10 digits.

In Switzerland and Liechtenstein, ServiceOption codes are always 6 to 10 digits, beginning with the Swiss issuer code (see section 5.3.1) and a maximum of 5 freely assignable characters.

Example:

CH001COR - PostFinance direct debit submission, only COR1

5.3.1 Swiss issuer code

This code is used in Switzerland for identifying the bilateral ServiceOptions.

The code consists of the character string "CH" and a 3-digit issuer number.

Issuer number 000 is reserved for SPS-defined variants, further numbers are assigned by means of a request to the address billing-payments.pm@six-group.com by the PaCoS EBICS working group.

5.3.2 Standard values

If the ServiceOption parameter is not specified when using scope = "CH", then the general SPS definitions or the institution-specific standard offer will apply for the corresponding service.

5.4 MsgName

MsgName contains the technical designation of the message type, e.g. pain.001 or mt940, always in lower case.

5.4.1 "Version" attribute

The otherwise optional "version" attribute must be provided for the message types of the Swiss Payment Standards (for ISO 20022 only).

5.4.2 "Variant" attribute

The optional "variant" attribute is currently not used in CH and LI.

5.4.3 "Format" attribute

The optional "format" attribute can be used if necessary in order to identify documents such as PDFs or non-standardized lists in CSV, JSON or XML formats.

5.5 Container

The optional container parameter identifies files that are transmitted as a ZIP file or embedded in an XML container.

In CH and LI, e.g. ISO 20022 account statements and reports (camt.053, camt.054, camt.052) as well as PDF documents are always provided by the financial institutions as ZIP files.

6 EBICS procedure

6.1 Initialization using pairs of keys

In Switzerland, initialization is carried out according to the EBICS 3.0 standard, which provides for X.509 certificates for the registration of new keys.

The certificates for this can either be "self-signed" or issued by a CA (certification authority). Only the X.509 format is mandatory. The validity date of the certificate is always checked, but can contain any valid date value (Unlimited = 9999-12-31). Further checks (e.g. CRL), as provided for order type H3K, are not performed. Order type H3K is not supported in Switzerland.

The process is as follows:

1. The customer signs the contract documentation for their financial institution.
2. The financial institution sends the EBICS access data including the hash values for the financial institution to the customer.
3. The customer carries out INI and HIA order types using their EBICS system.
4. The customer sends the signed initialization letter by post, including their hash values, to the financial institution.
5. The financial institution compares the hash values and checks the signatures.
6. The financial institution accepts the keys and gives technical authorization for the contract.
7. The customer carries out the HPB order type using their EBICS system and compares the hash values of the financial institution in the response to HPB with those in the letter giving the EBCIS access data.
8. The customer accepts the keys using their EBICS system.

Once all the initialization steps have been successfully completed, the customer and the financial institution can exchange data.

Note:

For existing keys, which were created with an older EBICS version, a reinitialization with X.509 certificates is only necessary if the length of the keys is < 2048 bits.

In this case, it is recommended to update the existing keys to a key length >= 2048 bits before migrating to EBICS 3.0.

6.2 Blocking participants

Swiss financial institutions support the administrative order type SPR for blocking an EBICS user.

An EBICS user can also be blocked manually (e.g. by telephone or other means of communication). The procedure is as follows:

The event leading to the blocking occurs (e.g. on the basis of a phone call from the customer).

The financial institution blocks the contract manually.

The contract cannot be used until it is initialized again.

Important:

Regardless of how the user is blocked (using order type SPR or manually), the block on an EBICS user always applies **solely** to the EBICS communication channel.

6.3 Customer protocol

All actions and events that occur when files are sent, fetched and signed are recorded in EBICS and made available to the customer in EBICS and as a machine-evaluable protocol in the ISO 20022 standard (pain.002).

The customer protocol contains all actions and status information on the partner ID (customer ID). This protocol can be fetched by authorized users with the administrative order type HAC.