

Technical specification version 2.10 –
Reconciliation for PostFinance
payment methods

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1. Introduction

1.1 Versioning of xsd file

The following xsd versions correspond to this document version V2.10.
 For Merchants only Reconciliation in EpaymentFile is relevant.

| | Version | used by | Description |
|--------------|---------|-------------------|---|
| EpaymentWeb | V2.10 | PSP | Authentication and alias registration |
| EpaymentSoap | V2.10 | PSP | Authentication and alias authentication |
| EpaymentFile | V2.10 | PSP and merchants | Submission and reconciliation |

For ordering the EpaymentFile XSD please contact merchanthelp@postfinance.ch.

1.2 Purpose of the document

This document describes the specifications of the e-payment reconciliation interface between PostFinance and the merchants. So the target group comprises merchants interested in the transaction management of the PostFinance payment methods.

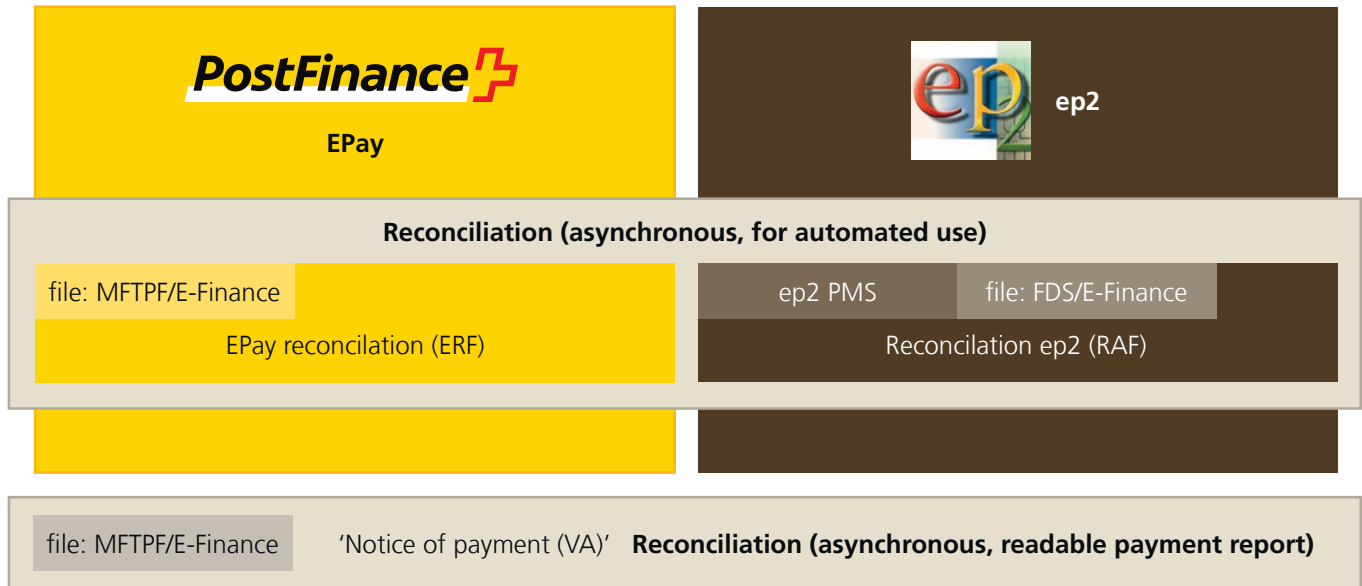
In the mentioned xsd-file two message types are defined. For reconciliation please focus on 'EPayReconciliationFile' as shown below:

| | |
|-------------|--------------------------|
| comment | ===== |
| comment | Enums |
| comment | ===== |
| simpleType | AcquirerEnum |
| simpleType | TrxAcceptCodeEnum |
| simpleType | TrxTypeEnum |
| comment | ===== |
| comment | Types |
| comment | ===== |
| simpleType | AcqPayDate |
| simpleType | AcquirerAuthorisationId |
| simpleType | Aid |
| simpleType | FileTimestamp |
| simpleType | IssuerAuthenticationId |
| simpleType | IssuerAuthorisationId |
| simpleType | MerchantId |
| simpleType | MerchantOrderId |
| simpleType | Notice |
| simpleType | PAR |
| simpleType | PartialCounter |
| simpleType | PartialFinalFlag |
| simpleType | PaymentId |
| simpleType | PeriodEndDate |
| simpleType | ProductDescription |
| simpleType | Pspld |
| simpleType | ReconciliationFileId |
| simpleType | SpecVersion |
| simpleType | SubmissionFileId |
| simpleType | TrxTimestamp |
| comment | ===== |
| comment | Containers |
| comment | ===== |
| complexType | MoneyAmount |
| complexType | PartialCapture |
| complexType | EPaySubmissionHeader |
| complexType | EPaySubmissionDetail |
| complexType | EPayTransaction |
| complexType | EPayReconciliationHeader |
| complexType | EPayReconciliationDetail |
| complexType | EPayReconciliation |
| comment | ===== |
| comment | Files |
| comment | ===== |
| element | EPaySubmissionFile |
| element | EPayReconciliationFile |

1.3 Overview

1.3.1 Overview of the available interfaces used by merchants

Depending on the Payment Service Provider (PSP) implementation the merchants get a reconciliation whether on the ep2 standards or PostFinance EPay. Please see ep2 specification for reference to ep2 (www.eftpos2000.com).



Delivery channels for reconciliation

| | |
|--|---|
| MI-Rec-Server (PMS) | For automated downloading and further processing of RAF only. Requires the merchant to have an ep2 infrastructure. |
| E-Finance | For semi-automated reconciliation of transactions. Download the RAF in e-finance and manually import it into the merchant's system. |
| MFPTF (Managed File Transfer PostFinance) | For automated downloading and further processing of reconciliation files. |

The most important information contained within the files for electronic reconciliation is the processing results of both PostFinance payment types. Depending on which payment service provider your merchant has chosen, PostFinance generates a RAF (reconciliation advice file) or an ERF (EPAY reconciliation file) for download. In both cases it is in .xml format.

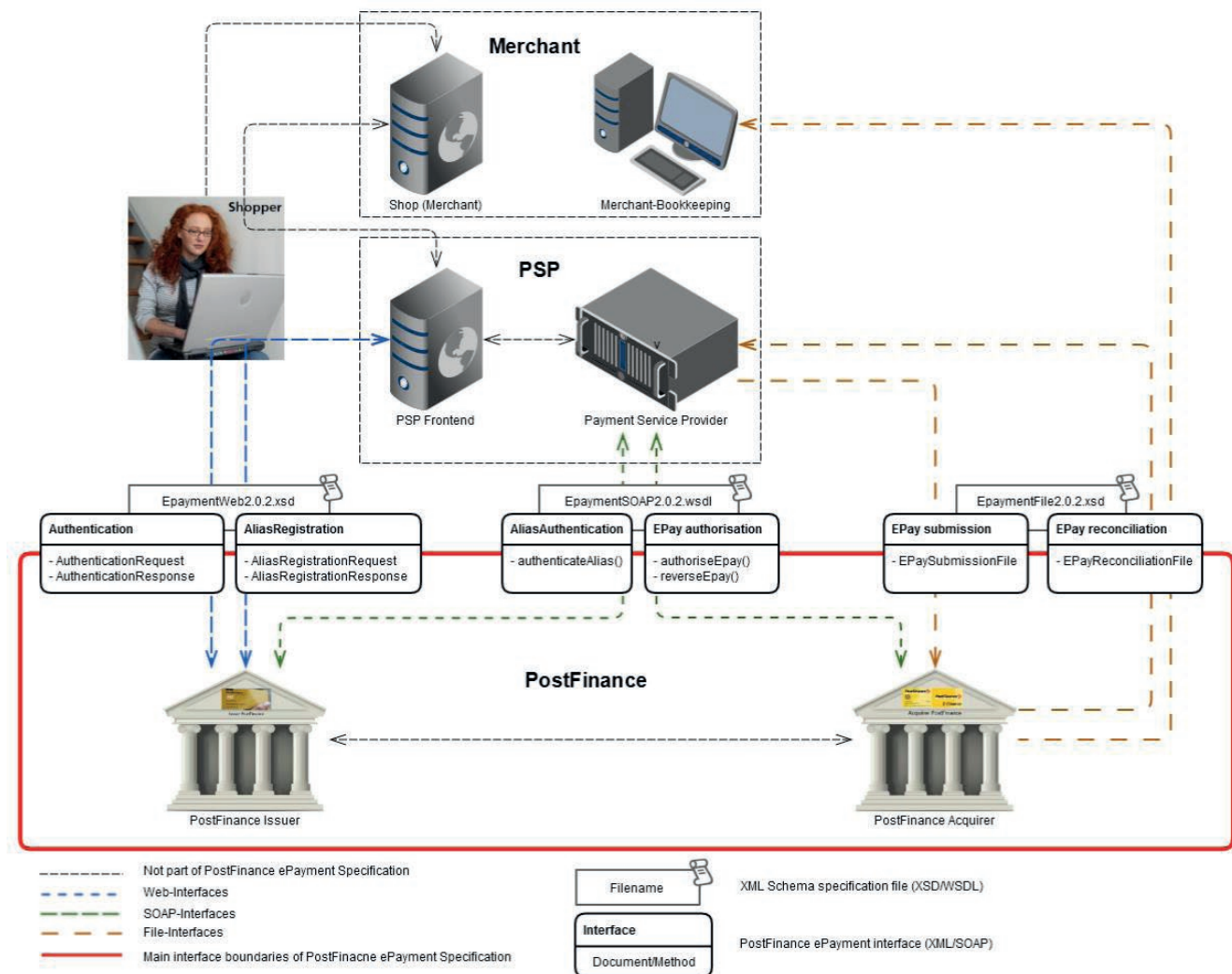
Reconciliation files are generated from the time of activation. Delivery cannot be ordered for transactions executed before activation.

1.3.1.1 RAF vs ERF

RAF (reconciliation advice files) are generated when a payment service provider uses the ep2 protocol to process PostFinance payment methods. This is interesting for merchants with high to very high transaction volumes. An ep2 infrastructure is a pre-condition for further processing by the merchant (www.oftpos2000.com).

ERF (E-Payment reconciliation files) are generated when a payment service provider uses the non-ep2 protocol EPAY to process PostFinance payment methods.

1.3.2 Use cases overview of using our XSDs



1.4 List of abbreviations

| Abbreviation | Description |
|--------------|--|
| AID | The Application Identifier identifies the authentication type; see [ep2 specification] |
| EPAY | PostFinance ePayment interface for PostFinance payment methods [non-ep2] |
| ep2 | Swiss standard for EFT/POS terminals and e-commerce; see [ep2 specification] |
| ERF | EPAY Reconciliation file. Proprietary PostFinance e-payment format – xml based |
| MFTPF | Managed File Transfer PostFinance |
| PFCD | PostFinance Card payment method |
| PFEF | PostFinance E-Finance payment method |
| PSP | Payment Service Provider. |
| RAF | Reconciliation file of ep2 transactions; can be acquired via ep2 service MI(Rec), via FDS or fetched in PostFinance E-Banking Portal |
| SFTP | Secure File Transfer Protocol; used by FDS interfaces |
| SOAP | Simple Object Access Protocol (v.1.1 currently in use) |
| UDDI | Universal Description Discovery and Integration (not used!) |
| URL | Uniform Resource Locator (universal address in information systems) |
| VA | Readable reconciliation file of transactions. It's the same format as used by eft/pos payment VA stands for 'Vergütungsanzeige' |
| WSDL | Web Services Definition Language (XML description of web services, see http://www.w3.org/TR/wsdl) |
| XML | Extensible Markup Language (see http://www.w3.org/XML) |
| XSD | XML Schema Definition. Is used as the standard namespace: http://www.w3.org/2001/XMLSchema |

1.5 Referenced documents

| Reference | Document |
|----------------------|---|
| [xmldsig] | XML Signature Syntax and Processing, W3C Recommendation 10 June 2008 http://www.w3.org/TR/xmldsig-core/ |
| [xmldsig-core] | XML Signature Syntax and Processing, W3C Recommendation 10 June 2008 http://www.w3.org/TR/xmldsig-core/ |
| [ISO-4217] | Currency code list in accordance with ISO 4217 http://www.currency-iso.org/en/home/tables/table-a1.html |
| [ISO-8859-1] | 8-bit single-byte coded graphic character sets -- Part 1: Latin alphabet No. 1 http://www.iso.org/iso/catalogue_detail?csnumber=28245 or https://en.wikipedia.org/wiki/ISO/IEC_8859-1 |
| mftpfmanual | Managed File Transfer PostFinance (MFTPF) manual www.postfinance.ch/filetransfer |
| [ep2 specification] | http://www.eftpos2000.ch/ Supported versions ≥ 7.0. End of live for version 7.0 will be in 2026, so we recommend to use the newest ep2 version. To get the specification a registration and a fee are required: see Registration Authority or contact PostFinance. |
| EpaymentFile2.10.xsd | EpaymentFile 2.10.xsd contains schema for EPay reconciliation |

2. Interfaces

The following interface is described below – Reconciliation (asynchronous) by EPay (XML via SFTP)

For ep2 interfaces see ep2 specification

2.1 Interface to be implemented for EPay

For semi-automated or/and automated use of EPayReconciliationFile the following must be implemented:

| Functionality | EPay | | Ep2 (for reference purpose) |
|----------------|----------------------|------------------------|----------------------------------|
| | xsd | Element | |
| Reconciliation | EpaymentFile2.10.xsd | EPayReconciliationFile | Reconciliation Advice File (RAF) |

2.2 EPay reconciliation

This chapter describes the file structure of the **EPayReconciliationFile** used for the reconciliation of PostFinance payment methods transactions. The files in question are to be exchanged using the File Delivery Service (FDS) or fetched by PostFinance E- Banking portal e-finance.

Use case:

- **Precondition:** the transactions to be reconciled have to be submitted by the PSP successfully.
- PostFinance sends files containing the transactions to FDS/e-finance with file names in accordance with 'File name'.
- The merchants can retrieve the files via FDS or the PostFinance e-banking portal and process them in their own time.

2.2.1 File name

For EPay reconciliation files the pattern for the file name is specified as follows:

- EPAYREC-[Environment]-[AcquirerId]-[PspId]-[MerchantId]-[ReconciliationFileId]-[PeriodEndDate]-[Date]-[Time]-v[SpecVersion].xml
e.g.: EPAYREC-P-4-1-PFAQ000000004-12345678901-20151126-20151126-217047-v2.10.xml

File name pattern for **EPayReconciliationFile**:

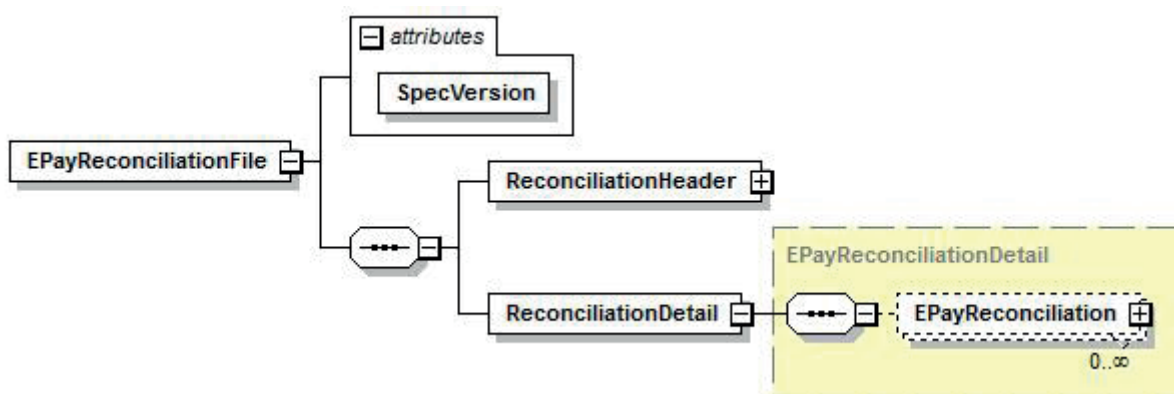
| Name | Ordinality | Remarks |
|----------------------|------------|--|
| Environment | 1 | Format: P=Production (Live-System) |
| AcquirerId | 1 | Unique identification of the acquirer (is always 4), without leading zeros |
| PspId | 1 | Unique identification of the PSP |
| MerchantId | 1 | Unique identification of the Merchant |
| ReconciliationFileId | 1 | Unique identifier of the reconciliation file |
| PeriodEndDate | 1 | Acquirer processing date of the transactions |
| Date | 1 | Creation date |
| Time | 1 | Creation time |
| SpecVersion | 1 | Version of the EPayReconciliation files specification. |

2.2.2 File structure

The file EpaymentFile2.10.xsd contains these definitions.

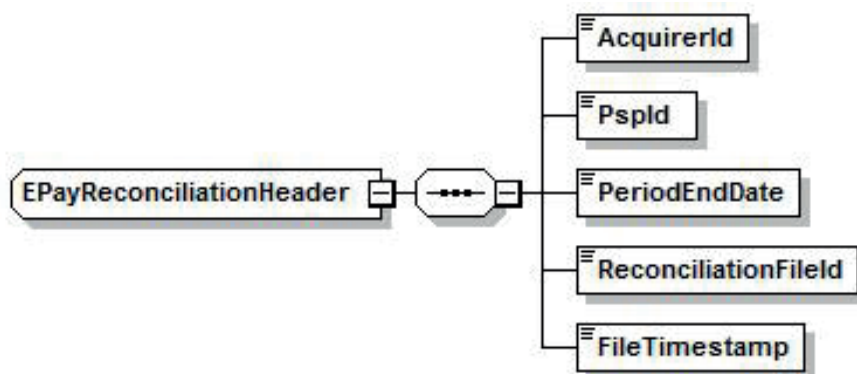
The **EPayReconciliationFile** contains several different types of PostFinance payment methods transactions reconciliation advice for a merchant.

| Name | Ordinality | Remarks |
|--------------------------|------------|---|
| SpecVersion | 1 | Version of the EPayReconciliation file specification as xml-Attribute. |
| ReconciliationFileHeader | 1 | Header information for EPayment transaction reconciliation advice |
| ReconciliationDetail | 1 | Detail information containing a list of 0 to n reconciliation items: EPayReconciliation |



2.2.2.1 ReconciliationFileHeader

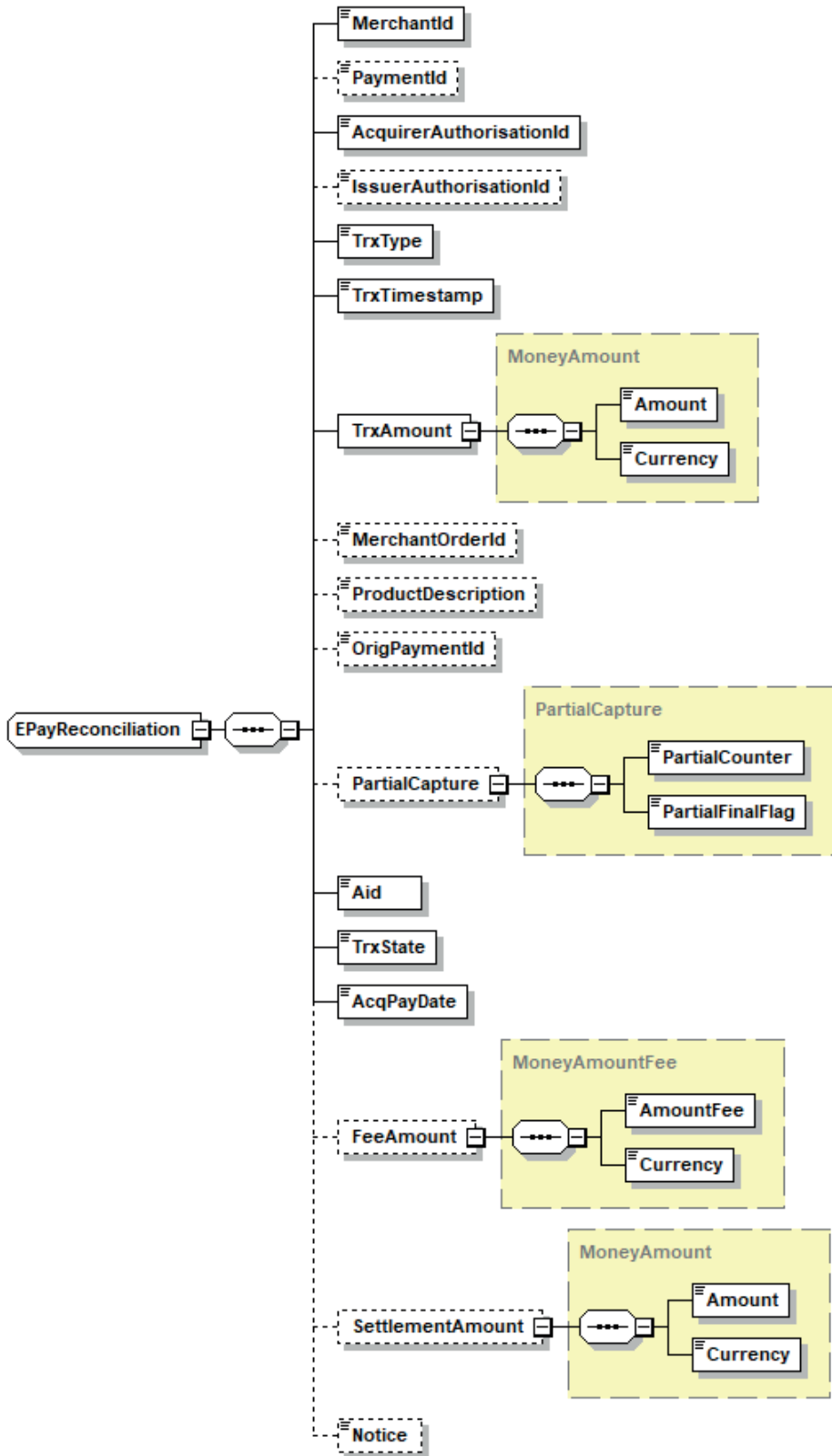
| Name | Ordinality | Remarks |
|----------------------|------------|---|
| AcquirerId | 1 | Unique identification of the acquirer who authorised the transactions. 4 for PostFinance |
| PspId | 1 | Unique identification of the PSP |
| PeriodEndDate | 1 | Acquirer processing date of the transactions |
| ReconciliationFileId | 1 | Unique identifier of the reconciliation file |
| FileTimestamp | 1 | Creation timestamp of the reconciliation file |



2.2.2.2 EPayReconciliation

| Name | Ordinality | Remarks |
|-------------------------|------------|---|
| MerchantId | 1 | Unique identification of the merchant |
| PaymentId | 0..1 | Unique payment identification. Not present in a manually reversal, performed by PostFinance. |
| AcquirerAuthorisationId | 1 | Unique acquiring identification of the authorisation or credit |
| IssuerAuthorisationId | 0..1 | Unique issuing identification of the authorisation or credit. Not present in a manually reversal, performed by PostFinance. |
| TrxType | 1 | Defines the transaction type, such as authorisation (all PURCHASE) or CREDIT |
| TrxTimestamp | 1 | Local time stamp of the authorisation or credit |
| TrxAmount | 1 | Amount and currency of the authorisation or credit |
| MerchantOrderId | 0..1 | Always present for successful transactions except for manually processed credits without existing reference to an original transaction. |
| OrigPaymentId | 0..1 | Only present for credits or (manual) reversals. |
| ProductDescription | 0..1 | Describes the product, only present if it was submitted with the submission. |
| Aid | 1 | Payment method used |
| TrxState | 1 | Transaction state as ACCEPTED, PENDING, REJECTED or REVERSAL (only manually reversal, performed by PostFinance). |
| AcqPayDate | 1 | Date of the acquirer payments to the merchant |
| FeeAmount | 0..1 | Amount of fees, only available by daily pricing |
| SettlementAmount | 0..1 | The original amount of the accepted authorisation in the account currency. Present if transaction is accepted. |

| Name | Ordinality | Remarks |
|----------------|------------|---|
| Notice | 0..1 | Optional text information on a declined transaction |
| PartialCapture | 0..1 | Only present if TrxType = PARTIAL_PURCHASE |



3. Data dictionary

3.1 Entities

| Name | ep2 Name (for reference purpose) | Format | | Remarks |
|-------------------------|------------------------------------|--------------|---|--|
| AcqPayDate | <i>ep2:AcqPayDate</i> | xs:string | [0-9]{8} | Date of the acquirer payments to the merchant (typically PeriodEndDate+ 1), format YYYYMMDD |
| AcquirerAuthorisationId | <i>ep2:TrxRefNum</i> | xs:long | [0-9]{1,12} | Unique identification on the authorisation provided by the issuer. Used as reference in submissions, reconciliations and reversals |
| AcquirerId | <i>ep2:AcqID</i> | xs:int | [0-9]{1,11} AcquirerEnum | Unique identification of the acquirer authorising the transactions. 4 for PostFinance |
| Aid | <i>ep2:AID</i> | xs:hexBinary | {6,16} | AID is a unique application identification as returned during authentication and used during authorisation – depending mainly on the authentication method. For values see Application Ids (AID) |
| Amount | <i>ep2:...Amt</i> | xs:decimal | [0-9]{1,10}\.[0-9]{0,2}? | Amount of authentication, authorisation or transaction. Only positive amounts are allowed |
| Currency | <i>..Curr</i> | xs:int | [0-9]{3} 756 978 | Currency of authentication, authorisation or transaction. 3 digits in accordance with [ISO-4217]. Only CHF (756) and EUR (978) are allowed |
| Date | <i>..Curr</i> | xs:string | [0-9]{8} | Date Field, format: YYYYMMDD |
| Ep2PaymentId | <i>ep2:TrmID + ep2:TrxSeqCnt</i> | xs:string | [0-9A-Z]{8}\-[0-9]{8} <TrmID>'- <TrxSeqCnt> | Unique ep2 reference field for the PSP. Composition of TrmId and TrxSeqCnt separated with a hyphen. |
| FeeAmount | <i>ep2:AmtFee, ep2:AmtFeeCurrC</i> | complexType | MoneyAmount | Amount of fees for a given transaction, may be 0, e.g. if the merchant contract is based on a monthly pricing model |
| FileTimestamp | <i>ep2:RAFDate ep2:RAFTime</i> | xs:string | [0-9]{8}[0-9]{6} | Creation timestamp of the file, format YYYYMMDDhhmmss |
| IssuerAuthorisationId | <i>ep2:AuthC</i> | xs:string | [a-zA-Z0-9]{1,6} | Unique identification of the authorisation provided by the issuer |
| MerchantId | <i>ep2:MctID</i> | xs:string | [0-9A-Z]{8}[0-9]{7} | Unique identification of the merchant: – EPay: provided by PF – ep2: provided by PSP |
| MerchantOrderId | <i>ep2:OrderID</i> | xs:string | [-~ -ÿ]{1,18} | Unique payment identification, provided by the merchant |
| Notice | – | xs:string | .{1,255} | Optional text information on a declined transaction |
| OrigPaymentId | | xs:string | [a-zA-Z0-9]{1,20} | Original PaymentId of the credited transaction. If the payment method is not PFCB or PFEF, the OrigPaymentId contains the origTransactionId as from the non-ep2 authorization/capture. |

| Name | ep2 Name (for reference purpose) | Format | | Remarks |
|----------------------|--|-------------|--|---|
| PartialCapture | – | complexType | PartialCapture | Defines details of each partial transaction |
| PaymentId | | xs:string | [a-zA-Z0-9]{1,20} | Unique reference field for the PSP. The PSP must guarantee that this ID is unique. If the payment method is not PFCB or PFEF, the PaymentId contains the transactionId as from the non-ep2 authorization / capture. |
| PeriodEndDate | <i>ep2:PeEndDate</i> | xs:string | [0-9]{8} | Acquirer processing date of the transactions, format YYYYMMDD |
| ProductDescription | – | xs:string | [-~ -ÿ]{1,80} | Describes the product in detail. Contains only printable characters according to ISO-8859-1. Unicode codepoints [U+0020 - U+007E, U+00A0 - U+00FF] |
| PspId | – | xs:int | [0-9]{1,4} | Unique identification of the payment service provider (PSP). One fixed value per PSP, issued by PostFinance |
| PspPaymentId | – | xs:string | [a-zA-Z\0-9]{1,20} (contains hyphen) | Unique payment identification, provided by the PSP, contains PaymentId or Ep2PaymentId |
| ReconciliationDetail | | complexType | List of EPayReconciliation | List of reconciliation transaction items |
| ReconciliationFileId | | xs:long | [0-9]{1,11} | Unique identifier of the file issued by PostFinance |
| SettlementAmount | <i>ep2:AmtSettlement, ep2:AmtSettlementCurrC</i> | complexType | MoneyAmount | The amount and currency of the settlement. If the account and TrxAmount currency differs, it's calculated in to the account currency. Otherwise it contains the same as TrxAmount. |
| SpecVersion | | xs:string | 2\.[0-9]{1,} | Version of the specification used (format: <major>.<minor>, without micro version, actual version 2.10) |
| | <i>specversion</i> | | [0-9]{2}[0-9]{2} | |
| Time | – | xs:string | [0-9]{6} | Time field, format: hhmmss |
| TrxState | <i>ep2:TrxAccept</i> | xs:int | [0-9]{2} TrxStateEnum | State of the transaction at the reconciliation |
| TrxAmount | <i>ep2:TrxAmt, ep2:TrxCurrC</i> | complexType | MoneyAmount | Amount and currency of the transaction to be submitted |
| TrxTimestamp | <i>ep2:TrxDat ep2:TrxTime</i> | xs:string | [0-9]{8}[0-9]{6} | Local time stamp of the authorisation, format YYYYMMDDhhmmss |
| TrxType | <i>ep2:TrxTypeExt</i> | xs:int | [0-9]{1,2} TrxTypeEnum | Transaction type of the authorisation |

3.2 Data definitions/Enums

3.2.1 AcquirerId (AcquirerEnum)

Code used to identify the acquirer. So far only one acquirer is supported.

| Value | Value ep2 | Label | Description |
|-------|------------|-------------|----------------------|
| 4 | 0000000004 | POSTFINANCE | Acquirer PostFinance |

3.2.2 Transaction type (TrxTypeEnum)

Code used to define the transaction type.

| Value | Value ep2 | Label | Description |
|-------|-----------|------------------------|--|
| 0 | 0 | PURCHASE | Automatic purchase |
| 4 | 4 | CREDIT | Credit |
| 7 | 7 | PURCHASE_PHONE_ORDERED | Manually operated purchase, ordered by phone. Only used by transactions with alias authentication |
| 9 | 9 | PURCHASE_MAIL_ORDERED | Manually operated purchase, ordered by mail. Only used by transactions with alias authentication |
| 60 | 60 | PREAUTHORISATION | First authorisation of the partial capture use case. Do not use this type if no partial capture will be needed |
| 15 | 15 | PARTIAL_PURCHASE | Partial captures after a PREAUTHORISATION in the partial capture use case. This value is not used in any authentications |

3.2.3 Transaction state (TrxStateEnum)

Code used to define the state of a transaction.

| Value | Value ep2 ¹ | Label | Description |
|-------|------------------------|----------|--|
| 1 | 0-99 | ACCEPTED | Transaction accepted |
| 2 | 200-299 | REJECTED | Transaction rejected |
| 3 | 300-399 | PENDING | Transaction received, transaction details must be clarified, will be processed, refunded later and reconciled again. |
| 4 | – | REVERSAL | Manually reversal of an accepted transaction, performed by PostFinance |

¹ For reference purposes, only used for ep2 reconciliation

3.2.4 Application Ids (AID) = Payment methods

Actual used AIDs:

| AID | Value ep2 | Authentication | Description |
|----------------------|-----------------------------|----------------|---|
| A0 00 00 01 57 44 45 | <i>A0 00 00 01 57 44 45</i> | PFCD-Alias | Authentication via PostFinance Card alias |
| A0 00 00 01 57 44 46 | <i>A0 00 00 01 57 44 46</i> | PFCD | Authentication via PostFinance Card (PFCD) |
| A0 00 00 01 57 44 73 | <i>A0 00 00 01 57 44 73</i> | PFEF | Authentication via PostFinance e-finance (PFEF) |
| A0 00 00 01 57 44 FB | <i>A0 00 00 01 57 44 FB</i> | PF PAY | Authentication via PostFinance Pay (PF Pay) |

3.3 Types

3.3.1 Elements in MoneyAmount

| Name | Ordinality | Content |
|-------------|------------|----------|
| MoneyAmount | 1 | Amount |
| | 1 | Currency |

3.4 MFTPF interface

The MFTPF (Managed File Transfer PostFinance) interface is used for the submission and reconciliation files of EPay transactions (ERF, VA) as well as RAF files of ep2 transactions, if requested. For further information see [mftpfmanual]. For the registration form, please contact us.

Note:

- Contrary to the other service operations, the file exchange for integration and production is handled on the same server. To ensure there is no confusion between the system environments, its abbreviation is part of the filename.
- Maximum transfer speed with non-compressible files is 3.2 MB/s.

Schema

The schema is defined in EpaymentFile2.10.xsd with the namespace 'http://aqs.postfinance.ch/epayment/v2'.

Protocol

SFTP, details see MFTPF manual.

Security

See MFTPF manual.

URLs

URL for the file exchange of submission and reconciliation files:

| Environment | FDS Hostname | Directory |
|---------------|---------------------------------|----------------------|
| P Production | mftp1.postfinance.ch Port: 8022 | aqs-in / aqs-out |
| I Integration | mfft2.postfinance.ch Port: 8022 | aqs-in-t / aqs-out-t |

Please use the hostname not a ip-address.