Technical specification version 2.10 – Reconciliation for PostFinance payment methods

PostFinance

Content table

1. Introduction

1.1 Versioning of xsd file

The following xsd versions correspond to this document versionV2.10.
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	PspId
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 gets a reconciliation whether on the ep2 standards or PostFinance EPay. Please see ep2 specification for reference to ep2 (www.eftpos2000.com).
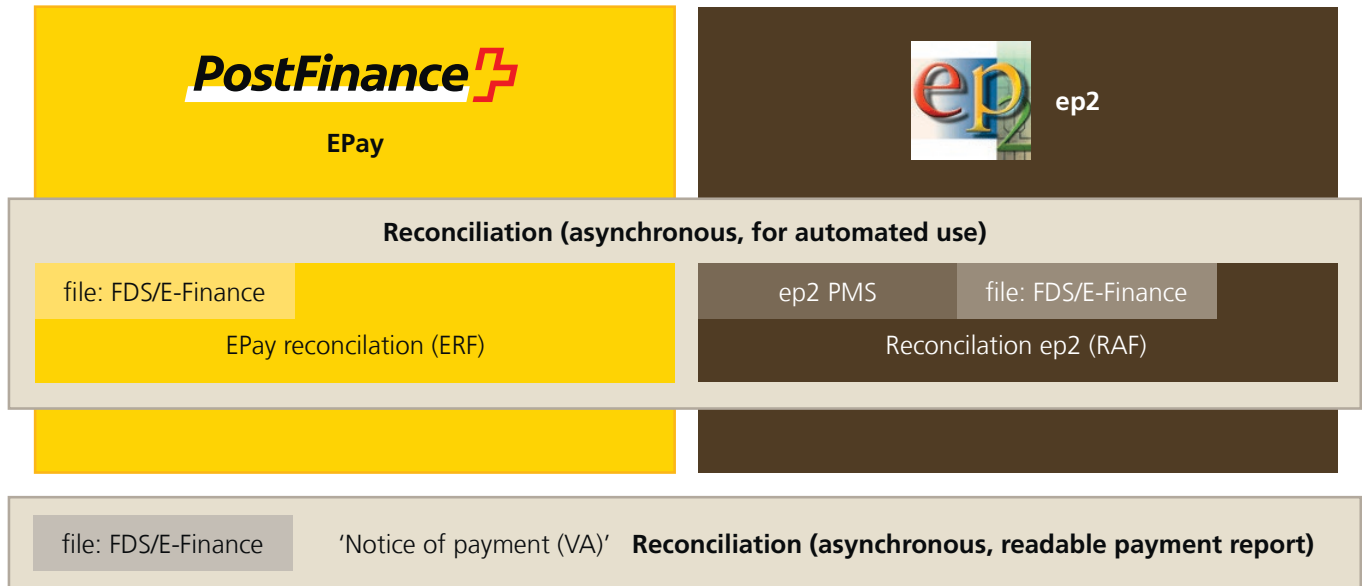
Delivery channels for reconciliation

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.
FDS (File Delivery System)	For automated downloading and further processing of reconciliation files.

For general facts like delivery channels for reconciliation, or account statements see 'E-Payment manual – PostFinance payment methods for online shops'. 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.eftpos2000.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
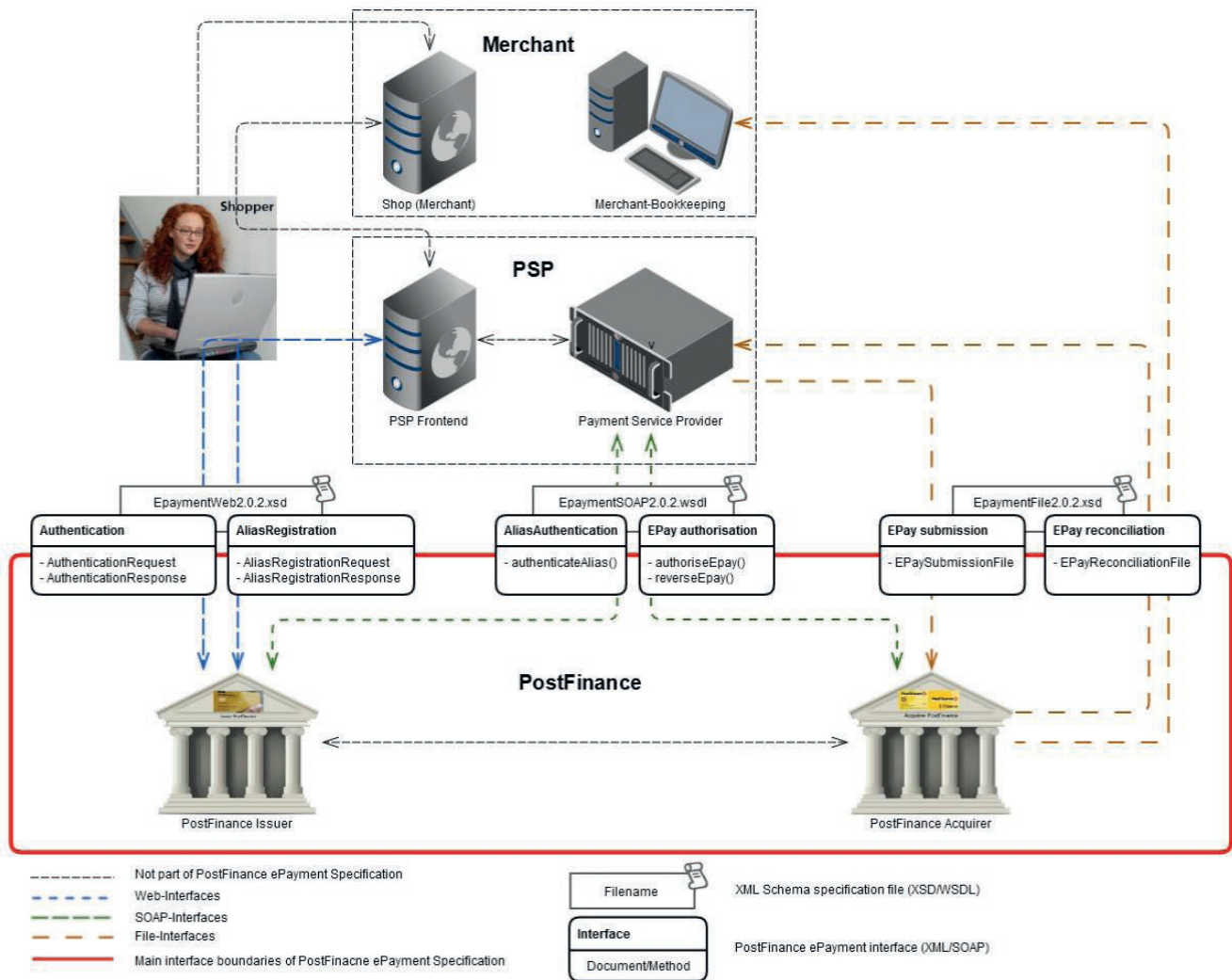
1.4 List of abbreviations

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
FDS	File Delivery Services
PFCD	PostFinance Card payment method
PFEF	PostFinance E-Finance payment method
PSP	Payment Service Provider. Recipient of this document
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)
SSL	Secure Socket Layer
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
[xmlschema]	XML Schema Part 0: Primer Second Edition, W3C Recommendation 28 October 2004 http://www.w3.org/TR/xmlschema-0
[xmlsignature]	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
[fdsuserguide]	http://www.post.ch/fds
[ep2 specification]	http://www.eftpos2000.ch/ Supported versions ≥ 5.3.0. End of live for version 5.3.0 will be in 2018, 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 EPayReconcilationFile the following must be implemented:

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

2.2 EPay reconciliation

This chapter describes the file structure of the **E**Pay**R**econciliation**F**ile 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]-[ReconcilationFileId]-[PeriodEndDate]-[Date]-[Time]-v[SpecVersion].xml
  e.g.: EPAYREC-P-4-1-PFAQ000000004-12345678901-20151126-20151126-217047-v2.10.xml

File name pattern for **E**Pay**R**econciliation**F**ile:

Name	Ordinality	Remarks
Environment	1	Format: P=Production (Live-System)
AcquirerId	1	Unique identification of the acquirer, without leading zeros
PspId	1	Unique identification of the PSP
MerchantId	1	Unique identification of the Merchant
ReconcilationFileId	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 **E**Pay**R**econciliation**F**ile contains several different types of PostFinance payment methods transactions reconciliation advice for a merchant.

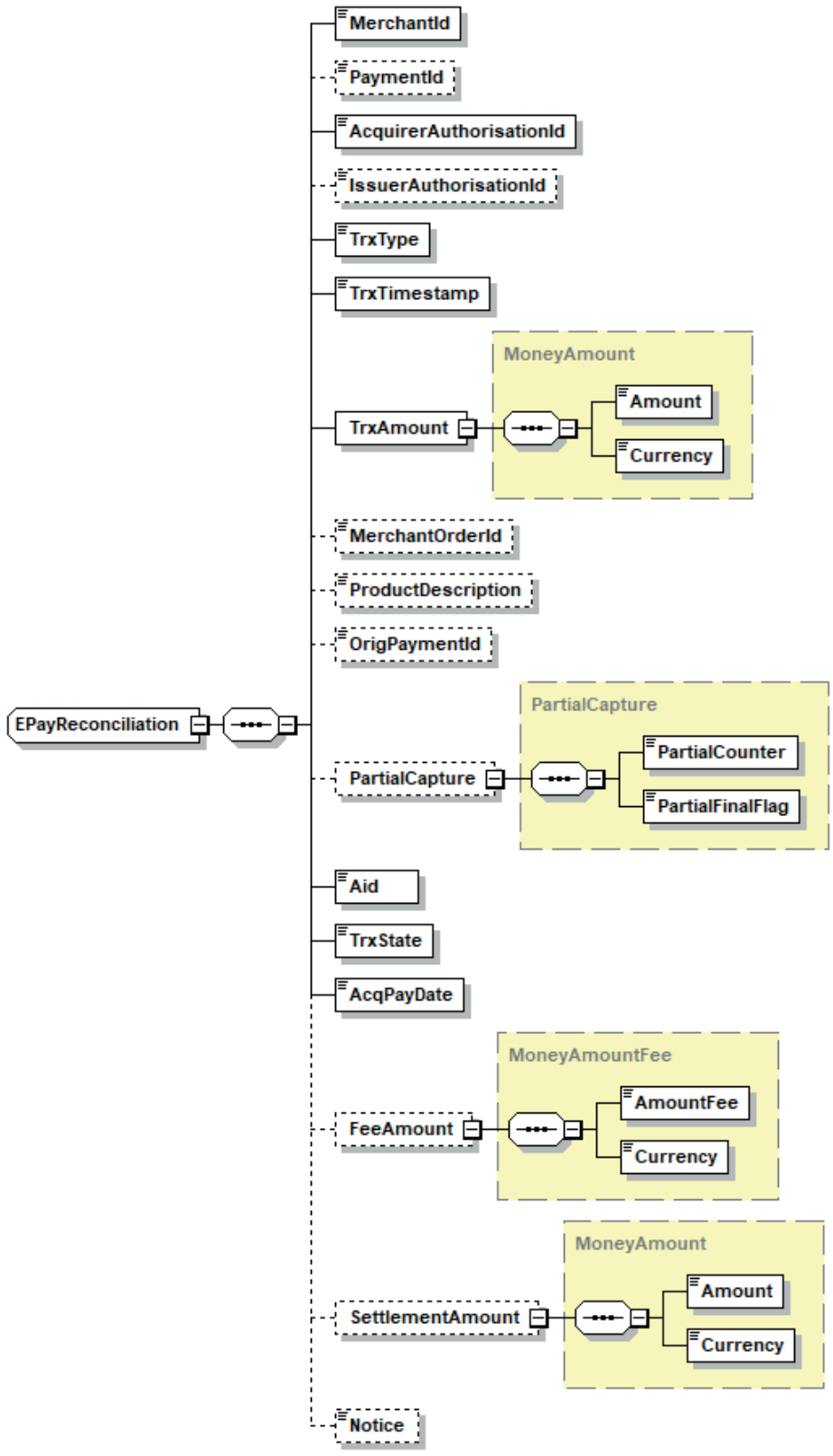| Name	Ordinality	Remarks
SpecVersion	1	Version of the EPayReconciliation file specification as xml-Attribute.
ReconciliationFileHeader	1	Header information for EPayment transaction reconciliation advice
ReconciliationDetail	1	Detail information containing a list of 0 to n reconciliation items: EPayReconciliation
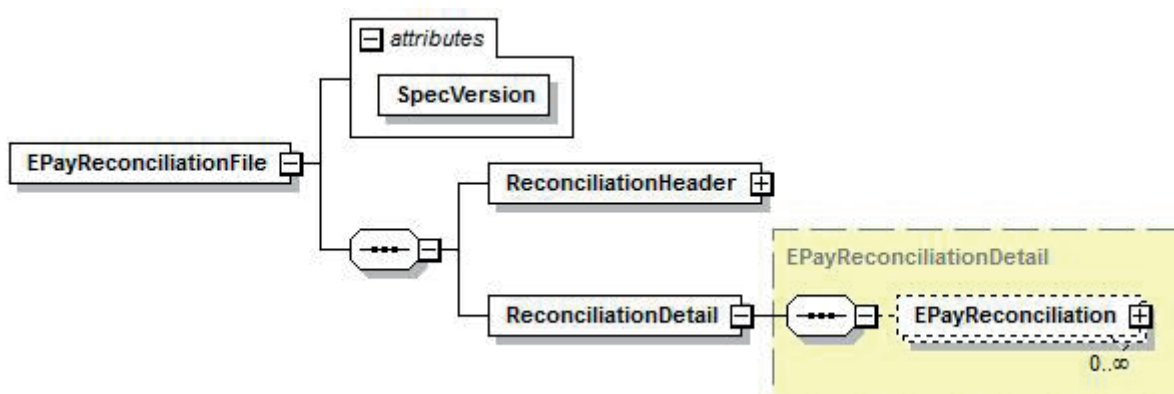
2.2.2.1 ReconciliationFileHeader

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
ReconcilationFileId	1	Unique identifier of the reconciliation file
FileTimestamp	1	Creation timestamp of the reconciliation file
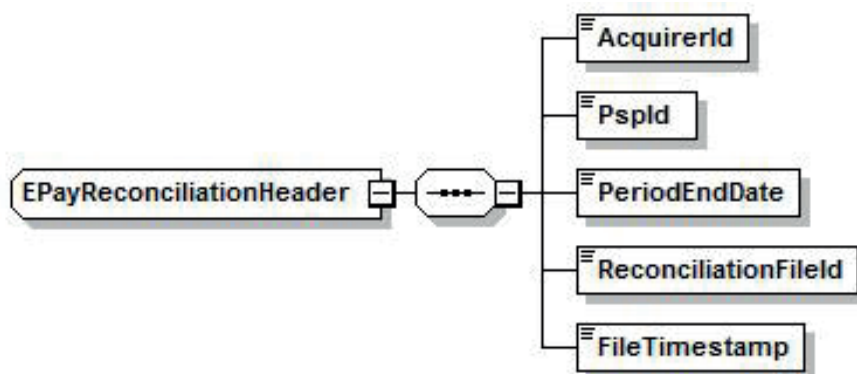
2.2.2.2 EPayReconciliation

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	*ep2:AcqPayDate*	xs:string	[0-9]{8}	Date of the acquirer payments to the merchant (typically PeriodEndDate+ 1), format YYYYMMDD
AcquirerAuthorisationId	*ep2:TrxRefNum*	xs:long	[0-9]{1,12}	Unique identification on the authorisation provided by the issuer. Used as reference in submissions, reconciliations and reversals
AcquirerId	*ep2:AcqID*	xs:int	[0-9]{1,11} AcquirerEnum	Unique identification of the acquirer authorising the transactions. 4 for PostFinance
Aid	*ep2:AID*	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	*ep2:..Amt*	xs:decimal	[0-9]{1,10}(\.[0-9]{0,2})?	Amount of authentication, authorisation or transaction. Only positive amounts are allowed
Currency	*..Curr*	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	*..Curr*	xs:string	[0-9]{8}	Date Field, format: YYYYMMDD
Ep2PaymentId	*ep2:TrmID +* *ep2:TrxSeqCnt*	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	*ep2:AmtFee,* *ep2:AmtFeeCurrC*	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	*ep2:RAFDate* *ep2:RAFTime*	xs:string	[0-9]{8}[0-9]{6}	Creation timestamp of the file, format YYYYMMDDhhmmss
IssuerAuthorisationId	*ep2:AuthC*	xs:string	[a-zA-Z0-9]{1,6}	Unique identification of the authorisation provided by the issuer
MerchantId	*ep2:MctID*	xs:string	[0-9A-Z]{8}[0-9]{7}	Unique identification of the merchant: – EPay: provided by PF – ep2: provided by PSP
MerchantOrderId	*ep2:OrderID*	xs:string	[-~ -&#x00 FF;]{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
PartialCapture	–	complexType	PartialCapture	Defines details of each partial transaction

Name	ep2 Name (for reference purpose)	Format		Remarks
PaymentId		xs:string	[a-zA-Z0-9]{1,20}	Unique reference field for the PSP. The PSP must guarantee that this ID is unique
PeriodEndDate	*ep2:PeEndDate*	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
ReconcilationFileId		xs:long	[0-9]{1,11}	Unique identifier of the file issued by PostFinance
SettlementAmount	*ep2:AmtSettlement, ep2:AmtSettlementCurrC*	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]+)	Version of the specification used (format: <major>.<minor>, without micro version, actual version 2.10)
	specversion		[0-9]{2}[0-9]{2}	
Time	–	xs:string	[0-9]{6}	Time field, format: hhmmss
TrxState	*ep2:TrxAccept*	xs:int	[0-9]{2} TrxStateEnum	State of the transaction at the reconciliation
TrxAmount	*ep2:TrxAmt, ep2:TrxCurrC*	complexType	MoneyAmount	Amount and currency of the transaction to be submitted
TrxTimestamp	*ep2:TrxDat ep2:TrxTime*	xs:string	[0-9]{8}[0-9]{6}	Local time stamp of the authorisation, format YYYYMMDDhhmmss
TrxType	*ep2:TrxTypeExt*	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	*00000000004*	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 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	*A0 00 00 01 57 44 45*	PFCD-Alias	Authentication via PostFinance Card alias
A0 00 00 01 57 44 46	*A0 00 00 01 57 44 46*	PFCD	Authentication via PostFinance Card (PFCD)
A0 00 00 01 57 44 73	*A0 00 00 01 57 44 73*	PFEF	Authentication via PostFinance e-finance (PFEF)

3.3 Types

3.3.1 Elements in MoneyAmount

Name	Ordinality	Content
MoneyAmount	1	Amount
	1	Currency

3.3.2 Elements in PurchaseData
Contains all data of a purchase.

Name	Ordinality	Content
PurchaseData	1	TrxType
	1	TrxTimestamp
	1	AuthorisationAmount
	1	MerchantOrderId
	condition (1)	PartialCapture Present if partial capure (TrxType = PARTIAL_PURCHASE). Not used in authentication.

3.4 FDS interfaces

The FDS (File Delivery Service) interface is used for the submission and reconciliation files of EPay transactions as well as RAF files of ep2 transactions, if requested. For further information see [fdsuserguide]. For the registration from contact PSP-Partner@postfinance.ch.

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.
– If an encrypted FDS account is used, the EPay reconcilation file also will be send encrypted.

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

Protocol
SFTP, details see [fdsuserguide].

Security
See [fdsuserguide].

URLs
URL for the file exchange of submission and reconciliation files:

Environment		FDS Hostname	Directory
P	Production	fdsbc.post.ch	aqs-in / aqs-out

Please use the hostname not a ip-address.