



EUROPEAN COMMITTEE FOR BANKING STANDARDS

ePI: STANDARD IMPLEMENTATION GUIDELINES

SIG605 V1.1-[DECEMBER 2003]

Document History

SIG605 V1.0
SIG605 V1.1

July 2003
December 2003

© European Committee for Banking Standards. [December 2003]
Avenue de Tervueren, 12, 1040, Brussels.

Not to be copied without attribution, and subject to the restriction under the confidentiality clause below.

Comments or enquiries on the document may be addressed to the Secretary General at the above address.

<p>This Standard Implementation Guideline is public, and may be copied or otherwise distributed provided the text is not used directly as a source of profit.</p>

TABLE OF CONTENTS

1	INTRODUCTION	1
2	REFERENCES	2
3	GENERAL SCHEME OVERVIEW	3
4	GENERAL BENEFITS	4
5	ANALYSIS OF RISKS AND SECURITY REQUIREMENTS	5
	5.1 Risk analysis	5
	5.2 Security requirements.....	6
6	OPERATIONAL RULES	7
7	EPI STRUCTURE IN XML SYNTAX	9
8	SAMPLE SCENARIOS	20
	8.1 ePI forwarded via download or e-MAIL	20
	8.2 ePI is distributed via consolidator (EBPP scenario)	24
9	IMPLEMENTATION GUIDELINES	25
	9.1 FINLAND: FINVOICE - B2B ELECTRONIC inVOICE STANDARD.....	25
	9.2 Austria: eps e-payment Standard.....	26
	ANNEX A: MAPPING TABLE EPI	28
	ANNEX B: XML STYLE SHEET EXAMPLE (ENGLISH)	30
	ANNEX C: CHARACTER SET FOR EPI	32
	ANNEX D: HOW TO READ EPI XML	33

1 INTRODUCTION

ECBS developed the standard EBS602 “electronic Payment Initiator (ePI)” to specify a flexible data container which will facilitate the electronic origination of fully automated domestic and cross border credit transfers in various scenarios between businesses and their private and / or corporate customers. The standard defines a set of mandatory, optional and conditional data elements which enables a beneficiary to create and forward a standardised ePI for further processing in existing payment applications, e.g. internet banking.

This Standard Implementation Guidelines (SIG) provides guidance with regard to the introduction of the ePI for financial institutions, software vendors, corporate entities and their respective customers. The document describes the use of the ePI (generated by, or on behalf of, the beneficiary) for initiating credit transfers by the ordering customer and the ordering customer's financial institution within different business cases. The SIG also analyses risks and indicates security requirements for the transfer of the ePI.

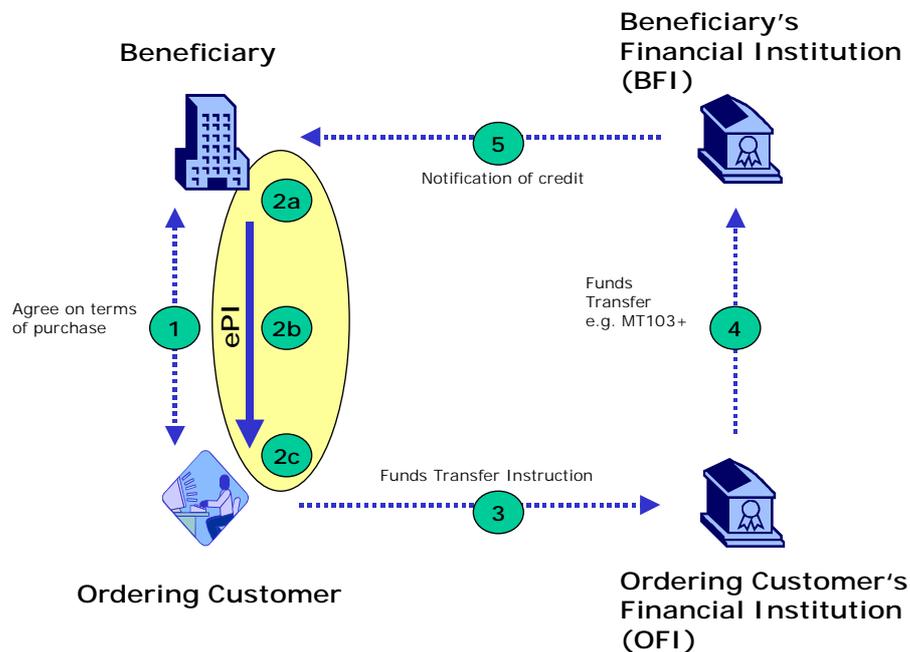
2 REFERENCES

EBS 602	Electronic Payment Initiator
ISO 4217	Currency Codes
ISO 9362	BIC – Bank Identifier Code
EBS 204	IBAN – International Bank Account Number
SIG 203	IBAN: Standard Implementation Guidelines
ORG 9003	ECBS Terminology
SWIFT MT103+	Single Customer Credit Transfer
SWIFT MT103	Single Customer Credit Transfer
TR607	Country specific texts for the electronic payment initiator (ePI)

3 GENERAL SCHEME OVERVIEW

This general scheme overview, taken from EBS602, describes an end-to-end straight-through process (STP) in which an ePI is generated by, or on behalf of, the beneficiary.

The ePI will be made available to the ordering customer (by e-Mail or download) who then initiates a funds transfer instruction to his/her bank.



1 Parties agree on terms of purchase (out of scope)

2a	Generation of ePI: the creation of an ePI by, or on behalf of, the beneficiary.
2b	Transfer of the ePI: transport of the ePI via electronic means from, or on behalf of, the beneficiary to the ordering customer
2c	Initiation of a funds transfer instruction: the creation of a funds transfer instruction by the ordering customer based on the ePI data

3 Funds transfer instruction (out of scope)

4 Funds transfer (out of scope)

5 Notification of credit (out of scope)

4 GENERAL BENEFITS

The ePI is not restricted to any particular business scenario. Its design will allow it to be used in many circumstances and the market will determine in which scenario(s) the ePI will prove most beneficial.

Use of the ePI should reduce costs and provide support to every party involved via the following advantages:

- **supports cross-border and domestic payments** by using existing payment infrastructures
 - **promotes straight-through processing** of financial transactions related to domestic and cross-border trade through enhanced quality of information
 - **reduces number of paper based transactions**
 - **prompt payment** is facilitated because all relevant data is present for a fully automated end to end electronic payment, leading to fewer rejections, enquiries / investigations and other causes of delay
 - **simpler processing** resulting from the opportunity to use a common payment standard
 - **easy reconciliation** with the return to the beneficiary of beneficiary-generated data, i.e. remittance information
 - **automated administration** due to electronic capture into e.g. ERP systems, customer databases, etc.
 - **convenience** and **simplicity** in transposing electronically the information required to originate a payment within current banking applications
 - **possibility of electronically providing invoice and payment instruction information** within one message
 - **alternative to direct debit** without national differences in schemes
-

5 ANALYSIS OF RISKS AND SECURITY REQUIREMENTS

5.1 RISK ANALYSIS

By transferring an ePI from a beneficiary to an ordering customer in various scenarios, risks may occur. The following risks have been identified:

	Data integrity	Confidentiality	User Authentication
Beneficiary	<p>Integrity of BIC, IBAN, amount, name and address is vulnerable.</p> <p>If data integrity is not guaranteed, there are risks that a correctly issued and valid ePI will be altered in transit. As a consequence</p> <ul style="list-style-type: none"> • <i>the beneficiary will not be paid</i> • <i>the beneficiary's reputation would be damaged if ordered goods are not despatched</i> • <i>the ordering customer will pay money to a criminal and hold the beneficiary responsible</i> 	<ul style="list-style-type: none"> • The beneficiary will not want his/her banking details (i.e. IBAN, BIC) available to a criminal • Economic espionage 	<p>The ePI might not be delivered to the person who is responsible for payment</p>
Ordering Customer	<p>If data integrity is not guaranteed, there are risks that a correctly issued and valid ePI has been altered in transit. As a consequence</p> <ul style="list-style-type: none"> • <i>money is transferred to the wrong person, perhaps a criminal, and will be lost</i> • <i>ordered goods will not be received</i> <p>Possible attacks on personal/home computer</p>	<ul style="list-style-type: none"> • The ordering customer might not want business details disclosed, e.g. the nature of goods purchased • Economic espionage 	<p>A criminal might pretend to be the beneficiary (appears to be X but is not X)</p>

5.2 SECURITY REQUIREMENTS

The ePI standard does not define or imply any terms of trade between buyer/consumer (ordering customer) and seller/biller (beneficiary), nor attempt to impose any conditions or restrictions affecting the relationships between these parties and their respective financial institutions, including any security measures.

Security requirements should be part of any business case which the ePI may support and should be considered in relation to actual business conducted, e.g. internet banking based on already existing security solutions.

The level of security should also be considered in relation to the potential value of transactions and any existing trading arrangements.

Suggestions for security solutions

- ePI forwarded with e-Mail

Within this scenario the e-Mail with the attached ePI can be secured with S/MIME (Secure Multi Purpose Internet Mail Extension) technology: to ensure data integrity the attachment itself may be signed (no prior key exchange necessary) whilst for ensuring confidentiality the e-Mail may be encrypted (here a key exchange before sending the mail is necessary).

- ePI downloaded

At a minimum the transfer should be secured with SSL (Secure Sockets Layer) or TLS (Transport Layer Security) encryption.

With web server certificates, customers can be confident that communication with a requested web server is confidential and that data integrity is assured.

6 OPERATIONAL RULES

It is the responsibility of the beneficiary to ensure that the ePI complies with the ECBS standard EBS602 and to use the national translations as provided in ECBS TR607.

It is also the responsibility of the beneficiary, (or any third party acting on behalf of the beneficiary), to establish with the beneficiary's financial institution (BFI) which national requirements, restrictions and standards should be considered in order to ensure that relevant ePI data can be processed throughout the payment chain.

The following data elements are subject to some national requirements in terms of length, i.e. numbers of characters, or presence/absence:

- BeneficiaryNameAddressText
- PaymentInstructionIdentifier
- InstructionCode
- TransactionTypeCode
- RemittanceIdentifier
- ChargeCode

AccountIdentifier - Beneficiary account identifier

The IBAN (International Bank Account Number) is the required identifier.

It is the responsibility of the ordering customer's financial institution to validate an IBAN quoted in any funds transfer instructions originated by the ordering customer, in accordance with ECBS SIG 203 (IBAN implementation guidelines) and EBS 204 (IBAN standard). Consequently the beneficiary should ensure that only valid IBANs, provided by the beneficiary's financial institution, are quoted in ePIs generated.

BeneficiaryBeiIdentifier

A BEI (Business Entity Identifier) is a machine readable code which may be used to identify the beneficiary. If a BEI has been allocated to the beneficiary it is recommended that the beneficiary obtains or verifies this BEI via the beneficiary's financial institution and ensures it is operational.

BfiPartyDetails

A BIC (Bank Identifier Code) is the identifier required for the beneficiary's financial institution. This BIC should be obtained from the beneficiary's financial institution.

OrderInfoText

If a BEI has been used to identify the beneficiary or if the beneficiary trades under a name different from the title of his / her account quoted in BeneficiaryAccountIdentifier, then it is recommended that the trading name of the beneficiary is quoted in OrderInfoText.

InstructionCode

If the BEN requires to be advised by the beneficiary's financial institution when payment arrives, then the appropriate code should be inserted, followed optionally by additional information such as a phone number preceded by a slash character in this case.

The following codes are available:

- PHOB – please advise/contact beneficiary/claimant by phone
- TELB – please advise/contact beneficiary/claimant by the most efficient means of telecommunication

Example:

PHOB/02 733 35 33

Other codes are available

ChargeCode

May be changed by the ordering customer in the resultant funds transfer instruction.

OUR: all transaction charges are to be borne by the ordering customer

SHA: transaction charges on the ordering customer's financial institution side are to be borne by the ordering customer, transaction charges on the beneficiary's financial institution side are to be borne by the beneficiary customer

BEN: all transaction charges are to be borne by the beneficiary customer

DateOptionDetails

OptionDate

- Credit date: indicates the date on which the beneficiary would like to have the funds available on his/her account.
- Debit date: indicates the date on which the ordering customer's financial institution should initiate the funds transfer by transferring funds from the ordering customer (for example the date on which the ordering customer's account is debited by the ordering customer's financial institution).

Following the receipt of the ePI by the ordering customer this date is capable of being changed to an earlier or a later date by the ordering customer and/or the systems of the ordering customer's financial institution.

7 EPI STRUCTURE IN XML SYNTAX

It is recommended to use XML syntax for the physical representation of the ePI.

The appropriate XML schema version is available from ECBS website (<http://www.ecbs.org/epi>). Also available there are examples of an XML style sheet to display XML messages within an internet browser.

The ePI XML schema is based on W3C XML schema rules (<http://www.w3c.org>).

Encoding of ePI XML messages must use UTF-8 (Universal Transformation Format 8).

The ePI XML schema will have a target namespace <http://www.ecbs.org/epi/15092003> with "epi:" as prefix.

Information on how to read and understand the ePI XML structure can be found in Annex D.

XML Schema structure

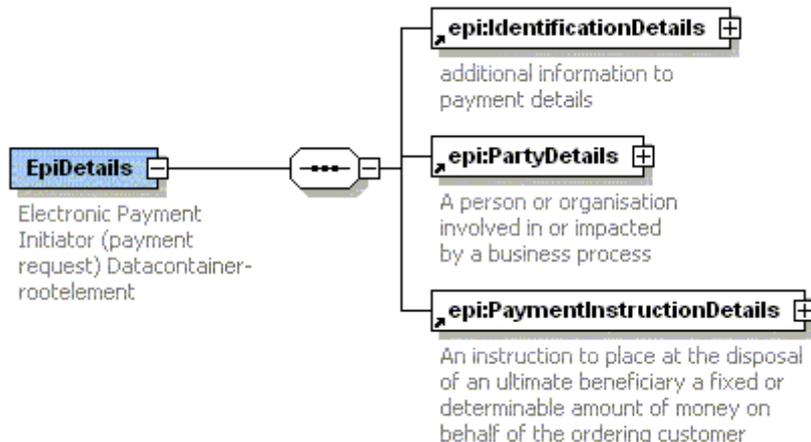
The following describe the XML schema structure of the ePI and the use of and rules for single elements and attributes. ECBS standard document EBS602 V1.1 describes the individual data elements of the ePI.

EpiDetails

It is the beneficiary's responsibility to ensure the generation of an ePI XML message which is based on the ECBS-published XML schema of the ePI data container:

- correct use of XML syntax
- correct use of mandatory, conditional and optional data, even if not needed locally
- correct use of described data formats
- use of latest XML schema version as published on the ECBS website
- this version also has to be made available to the ordering customer

Receiving interfaces will parse the XML stream against the ePI XML schema. If the XML stream is incorrect in terms of syntax and content the XML stream cannot be processed and the stream will be rejected or will not be displayed.



Explanation root element of ePI XML schema
Status MANDATORY

Data element	Explanation	Status	Data Type
EpiDetails		M	
IdentificationDetails	additional information to payment details	M	
PartyDetails	A person or organisation involved in or impacted by a business process	M	
PaymentInstructionDetails	An instruction to place at the disposal of an ultimate beneficiary a fixed or determinable amount of money on behalf of the ordering customer	M	

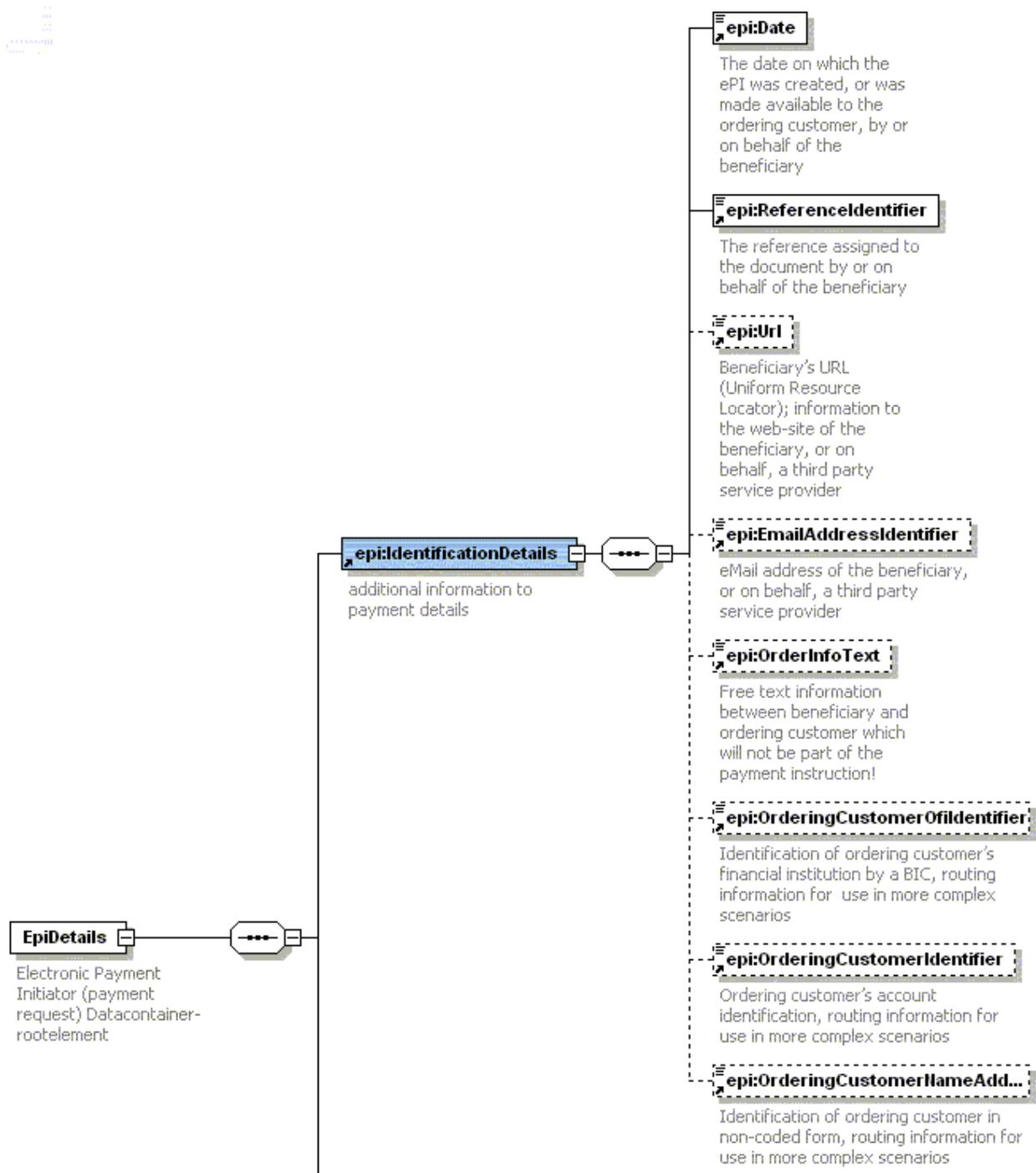
IdentificationDetails



Mandatory XML element



Optional XML element



Explanation reference and/or routing information additional to payment details
Status MANDATORY

Data element	Explanation	Status	Data Type
IdentificationDetails		M	
Date	The date on which the ePI was created, or was made available to the ordering customer, by or on behalf of the beneficiary	M	date

Data element	Explanation	Status	Data Type
ReferenceIdentifier	The reference assigned to the document by or on behalf of the beneficiary	M	an..35
Url	Beneficiary's URL (Uniform Resource Locator); information to the web-site of the beneficiary, or on behalf, a third party service provider	O	anyURI
EmailAddressIdentifier	eMail address of the beneficiary, or on behalf, a third party service provider	O	an..512
OrderInfoText	Free text information between beneficiary and ordering customer which will not be part of the payment instruction!	O	an..512
OrderingCustomerOfiIdentifier	Identification of ordering customer's financial institution by a BIC, routing information for use in more complex scenarios	O	an 11
OrderingCustomerIdentifier	Ordering customer's account identification, routing information for use in more complex scenarios.	O	an..34
OrderingCustomerNameAddressText	Identification of ordering customer in non-coded form, routing information for use in more complex scenarios	O	an..140

Note

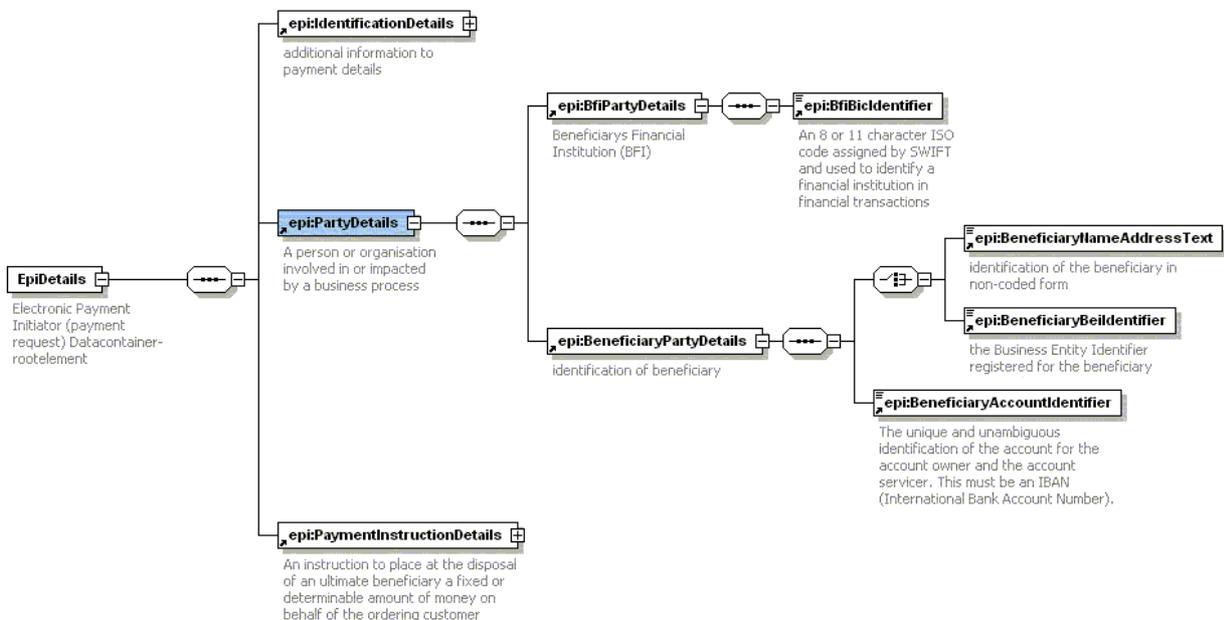
Information within the IdentificationDetails could be important in more complex scenarios (e.g. EBPP) but should not be used to create a credit transfer and will not be forwarded to the beneficiary throughout the payment chain. Some of this information, e.g. OrderingCustomerNameAddress, may well be required in the ensuing credit transfer but should be independently derived or inserted and not merely copied from the ePI.

All defined mandatory fields and appropriate data formats must be present within the XML stream, even when, as in this case, they are not used in creation of a credit transfer.

XML message excerpt

```
<?xml version="1.0" encoding="UTF-8"?>
<EpiDetails xmlns="http://www.ecbs.org/epi/15092003"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.ecbs.org/epi/15092003 ECBS_ePI_V1.0.xsd">
<IdentificationDetails>
  <Date>2003-04-14</Date>
  <ReferenceIdentifier> ABCDE1234567890</ReferenceIdentifier>
  <Url>http://www.ecbs.org</Url>
  <EmailAddressIdentifier>office@ecbs.org</EmailAddressIdentifier>
  <OrderInfoText>This is an ePI test message based on ECBS EBS602 Standard</OrderInfoText>
  <OrderingCustomerOfIdIdentifier>TESTTEST123</OrderingCustomerOfIdIdentifier>
  <OrderingCustomerIdentifier>
    FR7618206000999056966400117</OrderingCustomerIdentifier>
  <OrderingCustomerNameAddressText>optional: customer name for e.g. EBPP
    scenario</OrderingCustomerNameAddressText>
</IdentificationDetails>
```

PartyDetails



Explanation	identification of a party (person or organisation) involved in or impacted by a business process
Status	MANDATORY

Data element	Explanation	Status	Data Type
PartyDetails	A person or organisation involved in or impacted by a business process	M	
BfiPartyDetails	Beneficiarys Financial Institution (BFI)	M	
BfiBicIdentifier	An 8 or 11 character ISO code assigned by SWIFT and used to identify a financial institution in financial transactions	M	an 11
BeneficiaryPartyDetails	identification of beneficiary	M	
BeneficiaryNameAddressText	identification of the beneficiary in non-coded form	C	an..140
BeneficiaryBeiIdentifier	the Business Entity Identifier registered for the beneficiary	C	an 11
BeneficiaryAccountIdentifier	The unique and unambiguous identification of the account for the account owner and the account servicer. This must be an IBAN (International Bank Account Number).	M	an 34

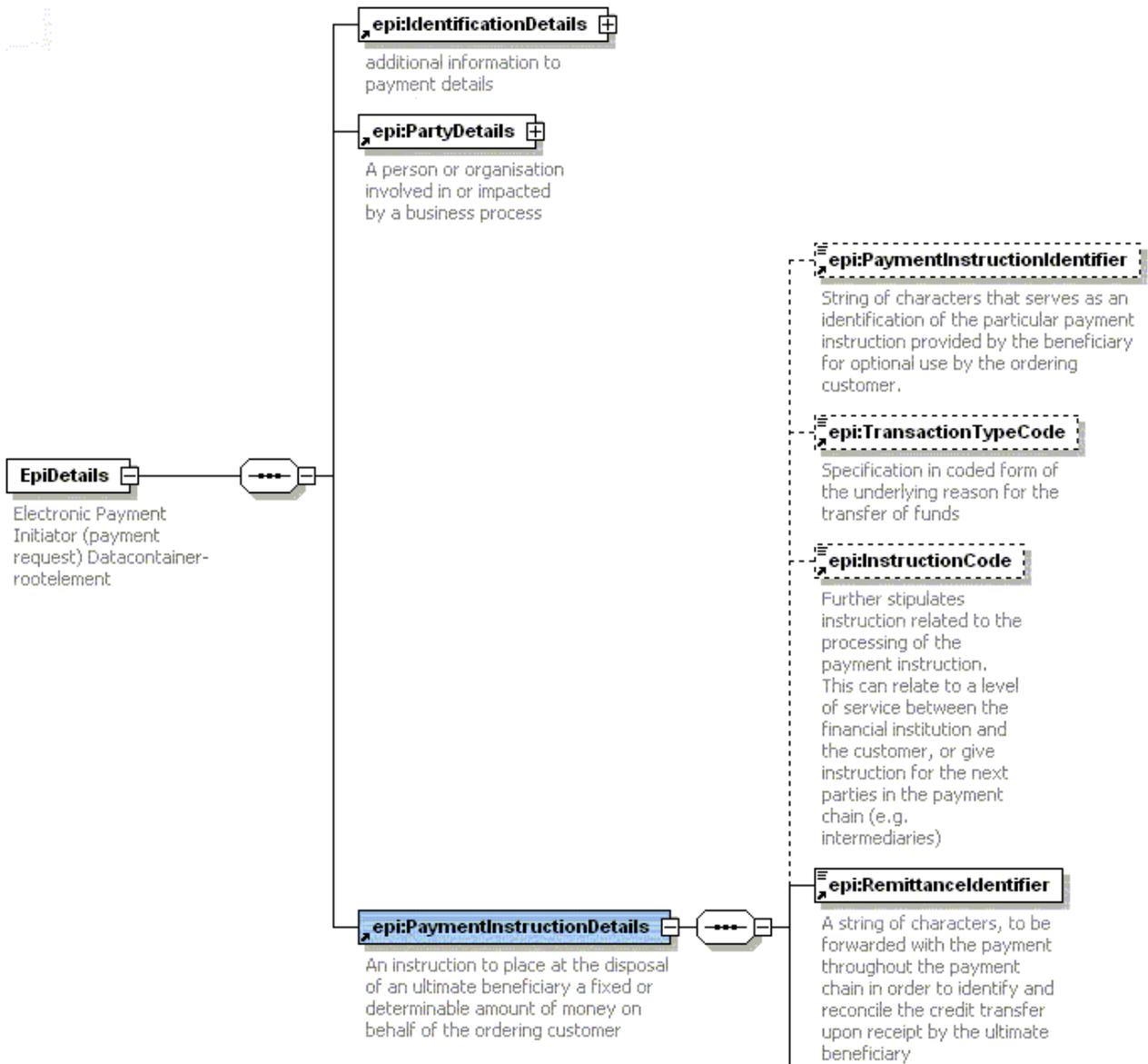
Notes

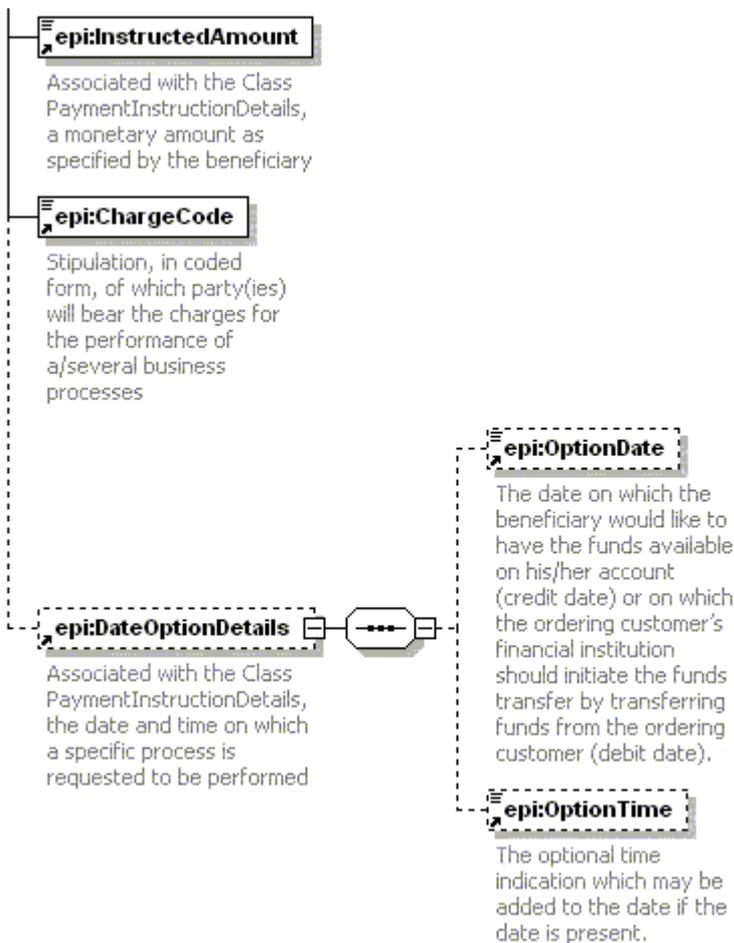
1. *the beneficiary's financial institution must be identified by its BIC.*
2. *the beneficiary is identified by either
name / name and address
or
BEI*
3. *identification of beneficiary's account by IBAN*

XML message excerpt

```
<PartyDetails>  
  <BfiPartyDetails>  
    <BfiBicIdentifier>AGRIFRPP882</BfiBicIdentifier>  
  </BfiPartyDetails>  
  <BeneficiaryPartyDetails>  
    <BeneficiaryNameAddressText>Societe Lumiere SA, 123456 Paris,  
France</BeneficiaryNameAddressText>  
    <BeneficiaryAccountIdentifier>FR7618206000103056966400117</BeneficiaryAccountIdentifi  
er>  
  </BeneficiaryPartyDetails>  
</PartyDetails>
```

PaymentInstructionDetails





Explanation payment details created by the beneficiary
Status MANDATORY

Data element	Explanation	Status	Data Type
PaymentInstructionDetails	An instruction to place at the disposal of an ultimate beneficiary a fixed or determinable amount of money on behalf of the ordering customer	O	
PaymentInstructionIdentifier	String of characters that serves as an identification of the particular payment instruction provided by the beneficiary for optional use by the ordering customer.	O	an..35
TransactionTypeCode	Specification in coded form of the underlying reason for the transfer of funds	O	an 3
InstructionCode	Further stipulates instruction related to the processing of the payment instruction. This can relate to a level of service between the financial institution and the customer, or	O	an..35

Data element	Explanation	Status	Data Type
	give instruction for the next parties in the payment chain (e.g. intermediaries)		
RemittanceIdentifier	A string of characters, to be forwarded with the payment throughout the payment chain in order to identify and reconcile the credit transfer upon receipt by the ultimate beneficiary	M	an..35
InstructedAmount	Associated with the Class PaymentInstructionDetails, a monetary amount as specified by the beneficiary	M	decimal
Attribute			
AmountCurrencyIdentifier		M	an 3
ChargeCode	Stipulation, in coded form, of which party(ies) will bear the charges for the performance of a/several business processes	M	an 3
DateOptionDetails	Associated with the Class PaymentInstructionDetails, the date and time on which a specific process is requested to be performed	O	
Attribute			
DateSpecificationCode	Specifies whether the DateOption is a credit (CRD) or a debit (DBD) date	M	a 3
OptionDate	The date on which the beneficiary would like to have the funds available on his/her account (credit date) or on which the ordering customer's financial institution should initiate the funds transfer by transferring funds from the ordering customer (debit date, for example the date on which the ordering customer's account is debited by the ordering customer's financial institution)..	O	date
OptionTime	The optional time indication, which may be added to the date if the date is present.	O	time

XML message excerpt

```
<PaymentInstructionDetails>  
  <PaymentInstructionIdentifier>for debtor for reconciliation</PaymentInstructionIdentifier>  
  <TransactionTypeCode>BEN</TransactionTypeCode>  
  <InstructionCode>PHOB/call 02-733 35 33</InstructionCode>  
  <RemittanceIdentifier>ABCDE9876543210</RemittanceIdentifier>  
  <InstructedAmount AmountCurrencyCode="EUR">150.55</InstructedAmount>  
  <ChargeCode>SHA</ChargeCode>  
  <DateOptionDetails DateSpecificationCode="DBD">  
    <OptionDate>2003-04-16</OptionDate>  
    <OptionTime>12:00:00</OptionTime>  
  </DateOptionDetails>  
</PaymentInstructionDetails>
```

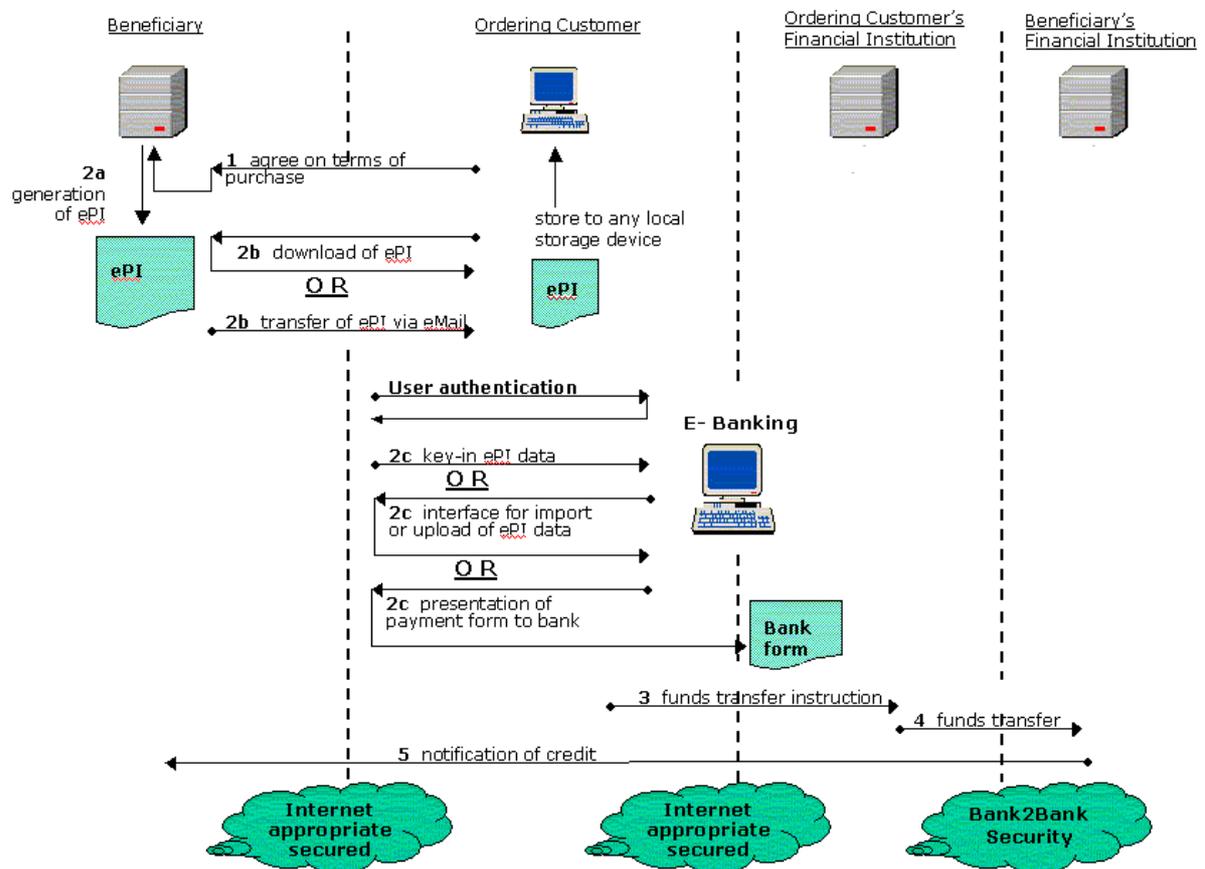
8 SAMPLE SCENARIOS

8.1 ePI FORWARDED VIA DOWNLOAD OR e-MAIL

The ePI is a standard data container and not itself a product; it is part of a process or supports a product to effect an STP funds transfer. An ePI is capable of supporting various scenarios where a potential beneficiary wishes to be paid by a funds transfer.

The following simple scenario describes the transfer of an ePI via e-Mail, or via download by the ordering customer.

ePI forwarded via download or e-Mail



Step 1: parties agree on terms of purchase (out of scope)

Step 2a: generation of ePI

The beneficiary, or a third party on behalf of the beneficiary, creates an ePI to be sent to the ordering customer as an e-Mail attachment; or to be made available for the ordering customer to download.

Parties involved

The beneficiary, or a third party acting on behalf of the beneficiary

Beneficiary's action and responsibility

- The beneficiary must secure the environment where creation and storage occurs
- The ePI must be created according to the standard ePI XML schema defined by ECBS (see chapter 7)
- The ePI should be validated by the beneficiary in terms of correct use of data elements (e.g. mandatory, conditional and optional elements, field length definitions)
- ePI transaction data should respect payment system requirements as advised by the beneficiary's financial institution in order to facilitate the automated forwarding of all relevant data throughout the payment chain
- The character set of the ePI filename must accord with information in ANNEX C
- The beneficiary must be able to generate, and must generate if required, an ePI viewable offline on the ordering customer's computer in the national language(s) of the ordering customer's country of residence (see ANNEX B for an example).
 - ePI XML message with matching XML-style sheet and XML-schema (3 separate files are needed and must be available to the ordering customer)
 - ePI XML message transformation into HTML, PDF

Step 2b: transfer of ePI

Via e-Mail

The created ePI is sent to the ordering customer as an attachment to an e-Mail. A precondition is that the beneficiary knows the e-Mail address of the ordering customer.

Via download

The ordering customer downloads the ePI within the same online session as used in step 1, or at a later period from a known location and stores this file under a freely chosen name at a local storage device.

Parties involved

- The beneficiary, or a third party acting on behalf of the beneficiary
 - The ordering customer
-

Beneficiary's action and responsibility

- The beneficiary should make the location of the ePI known to an ordering customer who wishes to download subsequently
- For an ordering customer who wishes to view the ePI XML message offline the beneficiary must send a translation of the ePI into the national language(s) of the ordering customer's country of residence (see ANNEX B for an example), e.g.
 - XML message with matching XML-style sheet and XML-schema (3 separate files are needed and must be available to the ordering customer) or
 - ePI XML message and a copy transformed into HTML or
 - ePI XML message transformed into HTML or
 - ePI XML message and a copy transformed into PDF.

Note: if the ordering customer views the ePI with an internet browser whilst still connected to the beneficiary's site, the ePI data will be clearly legible and understandable because all relevant information should be encoded within the ePI XML message.

It is recommended that up-to-date ePI XML schemas and stylesheets in European languages are located at the beneficiary's web server.

Step 2c: initiation of funds transfer instruction

Having received the ePI the ordering customer is capable of initiating a funds transfer instruction.

Depending on national regulations and other factors the following data content may need to be changed by the ordering customer:

- instructed amount
- date option
- charge option (OUR, SHA, BEN).

Parties involved

- Ordering customer
- Ordering customer's financial institution

Funds transfer instruction initiation options

1. Direct import into payment application (i.e. interface into banking application)

In order to use this functionality the ordering customer's financial institution must support the direct electronic import and processing of an ePI XML request for funds transfer by providing suitable electronic interfaces.

Ordering Customer's action and responsibility

After sign-on and identification using existing procedures and following authorization by the financial institution, the ordering customer imports an ePI into his / her banking application. The ePI data will then be presented within the application for further processing.

Ordering Customer's financial institution action and responsibility

The financial institution of the ordering customer must provide an upload functionality within its banking application. This interface must process the agreed ePI structure.

Advantages: easy to use, limits import errors

Disadvantage: additional investment required by financial institutions

2. Manual input of data into payment application (e.g. internet banking)

Ordering Customer's action and responsibility

If the ordering customer's financial institution does not offer electronic interfaces for automated processing of ePIs, then after sign-on and identification using existing procedures (e.g. input of ID and password) and following authorization by the financial institution, the ordering customer may initiate a funds transfer instruction by means of copy and paste or re-keying data into his/her banking application.

Despite such manual intervention by the ordering customer, the ePI still promotes STP at all subsequent stages of the payment and reconciliation process, since the data created by the beneficiary will be passed on electronically.

Advantages: easy to use, easy start-up for ePI

Disadvantage: possible source of errors

3. Presentation of payment form to the bank

Ordering Customer's action and responsibility

If the ordering customer does not have, or does not choose to use, an electronic banking system, the ordering customer can initiate a funds transfer instruction by means of an existing paper payment form containing information transcribed from the ePI.

Advantages: easy to use, easy start-up for ePI

Disadvantages: possible additional charges for paper based initiation, possible extra costs for paper handling by banks and customers, possible source of errors due to transcription

Step 3: funds transfer instruction (out of scope)

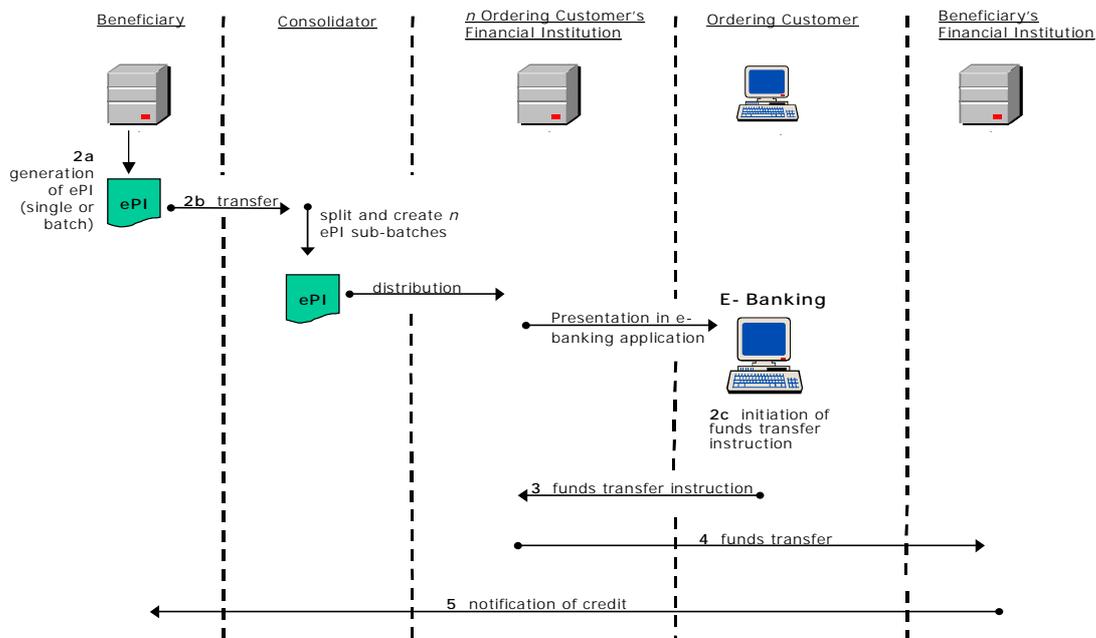
Step 4: funds transfer (out of scope)

Step 5: notification of credit (out of scope)

8.2 ePI IS DISTRIBUTED VIA CONSOLIDATOR (EBPP SCENARIO)

In this scenario the ePI is distributed via a consolidator: a beneficiary can send single ePIs or multiple ePIs within a file.

ePI sent via consolidator



Step 2a: generation of ePI

The beneficiary creates the ePI intending to forward the ePI to the consolidator.

The beneficiary should include in the ePI identification details of the ordering customer and of the ordering customer's financial institution.

Step 2b: transfer of ePI

Transfer of the ePI to the consolidator, single or batch transfer.

The consolidator will split the ePI-batches (no ordering customer involved yet) and forward ePI sub-batches to the corresponding customers' financial institutions for electronic presentation.

For B2C scenario: ePI data will be presented to the ordering customer by the ordering customer's financial institution (e.g. within the e-banking application).

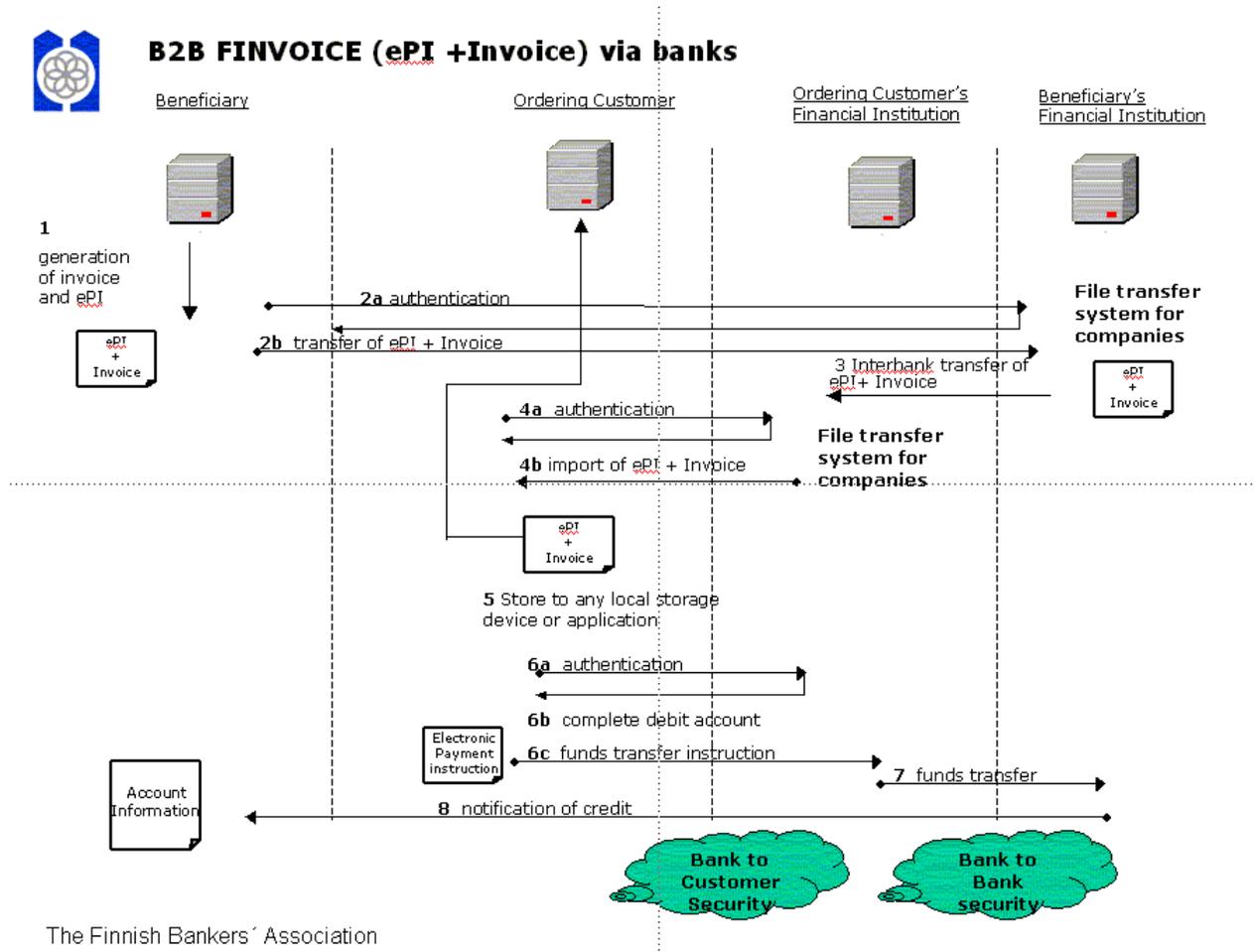
For B2B scenario: ePI data sent via file transfer to corporate(s)

Step 2c: initiation of funds transfer instruction

The ePI is presented in a banking application where the customer initiates the funds transfer instruction.

9 IMPLEMENTATION GUIDELINES

9.1 FINLAND: FINVOICE - B2B ELECTRONIC INVOICE STANDARD



This scenario enables a beneficiary to create an electronic invoice and forward it to the ordering customer via financial institutions, similar to the process for payment transactions. Finvoice is a common format for electronic invoices designed by the Finnish banks. It is easy to replace paper invoices using Finvoice. Finvoice is equally well suited for invoicing by large, medium-sized and small companies.

The ePI Standard is a part of the Finvoice-standard and carries all relevant payment data created and issued by the beneficiary. The payment proposal facilitates error-free payment at the correct time.

The ordering customer receives an invoice with a payment initiator (ePI) and adds the debit account identification. After adding the debit account into the ePI it will be transformed into an Electronic Payment Instruction, which is ready to be sent to the financial institution.

In the electronic account statement the beneficiary receives exactly the same remittance information as was given in the original ePI. This enables automated reconciliation of payments receivables.

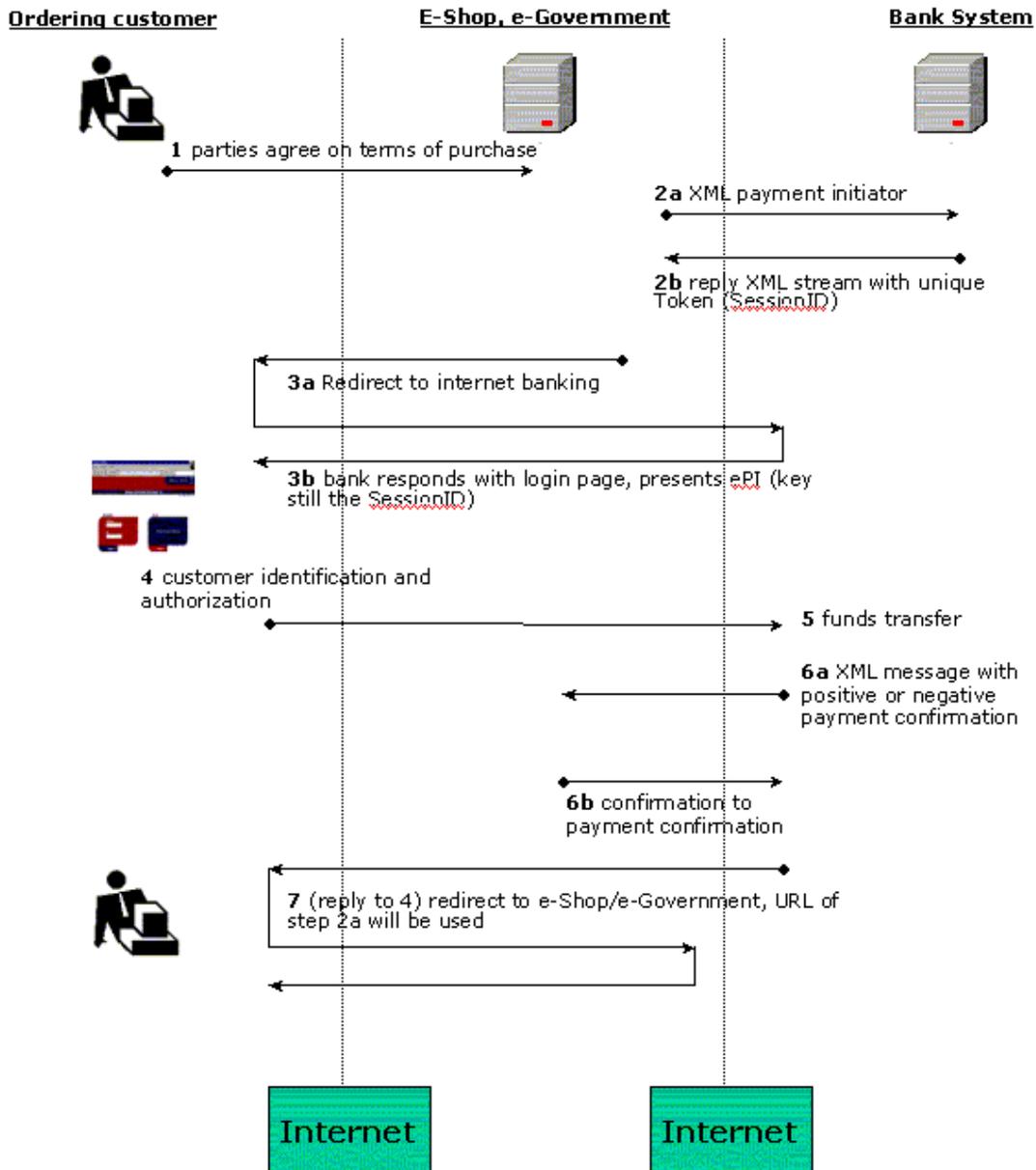
The Finvoice standard will be used by Finnish companies for both B2B and B2C invoicing. The time schedule for B2B invoicing is 1Q 2003 and for the B2C invoicing 4Q 2003.

Additional information: www.fba.fi/finvoice

9.2 AUSTRIA: EPS E-PAYMENT STANDARD



Registered Trademark for eps



This scheme enables an ordering customer to initiate a prescribed funds transfer during an online shopping / order session based on the ECBS ePI Standard.

The ePI Standard is part of the eps e-payment standard and carries all relevant payment data, which is created and issued by the beneficiary.

The ordering customer selects - during the online session within the beneficiary's application – the financial institution where he/she wants to initiate a credit transfer.

The beneficiary requests e-payment at the ordering customer's financial institution payment server by transferring the ePI data container to a known URL of the ordering customer's financial institution.

The ordering customer's financial institution replies to the beneficiary with a Session-ID. With this Session-ID the beneficiary redirects the ordering customer to his selected internet banking application.

After identification at the ordering customer's financial institution the ePI data will be presented to the ordering customer within the banking application.

The customer finally authorizes the funds transfer which then will be transferred by the ordering customer's financial institution as a cross-border or domestic credit transfer.

Finally the ordering customer's financial institution redirects the ordering customer back to the beneficiary's URL.

The eps e-payment standard will be used by Web-Shops as well as e-Government for secure online payments

Security

The beneficiary is either identified with a unique UserID + PIN provided by the bank or with a certificate provided by a Certification Authority.

Optionally a beneficiary can secure an eps payment request with a certificate using the W3C XMLDsig Standard, e.g. e-government applications will digitally sign the whole eps payment request.

This eps XML message will then be forwarded to the ordering customer's financial institution where the certificate is validated. The payment request is presented to the customer within his Internet Banking application.

If the funds transfer has been initiated the ordering customer's financial institution creates a payment confirmation message which upon beneficiary's request is also digitally signed and finally send to the beneficiary.

This solution will support those e-commerce partners who have implemented security solutions such as PKI environment in order to accept and validate certificates.

ANNEX A: MAPPING TABLE ePI

Note that the content of some ePI data elements may be changed by the ordering customer or ordering customer’s financial institution

The current SWIFT modelling project for the customer-to-bank relationship may lead to future updates of the mapping table.

Data element		Explanation		Data type	SWIFT 103+	FINPAY			
IdentificationDetails			O						
Date			M	n 10	—	A	DTM	C507:2380	137
ReferenceIdentifier		Reference ePI Message	M	an..35	—	A	UNH	0062	
Url		Information Beneficiary URL	O	x..512	—	17	COM	C076:3148	AO
EmailAddressIdentifier		Information Beneficiary E-mail address	O	x..512	—	17	COM	C076:3148	EM
OrderInfoText		additional Order information	O	5*an..70	—	23	FTX	C108:4440	PMD
OrderingCustomerOfiIdentifier		BIC of ordering customer's financial institution	O	an 11	-	13	FII	C088:3433	BF
OrderingCustomerIdentifier			O	an..34					
OrderingCustomerNameAddressText		Unstructured Name & Address	O	4*an..35	-	17	NAD	C080:3036	BE

PartyDetails			M						
BfiPartyDetails			M						
	BfiBicIdentifier	BIC	M	an 11	57A (2nd subfield)	13	FII	C088:3433	BF

Data element		Explanation		Data type	SWIFT 103+	FINPAY			
BeneficiaryPartyDetails			M						
	BeneficiaryNameAddressText	Unstructured Name & Address	C	4*an..35	59 (2nd subfield)	17	NAD	C080:3036	BE
	BeneficiaryBeiIdentifier	Business Entity Identifier	C	an 11	59A (2nd subfield)	17	NAD	C082:3039	BE
	BeneficiaryAccountIdentifier	IBAN	M	an..34	59 or 59A (1st subfield)	13	FII	C078:3194	BF
PaymentInstructionDetails			M						
PaymentInstructionIdentifier			O	an..35	—	14	RFF	C506:1154	AEF
TransactionTypeCode			O	an 3	26T	12	BUS	C521:4025	SSV
InstructionCode			O	an..35	23E	19	INP	C522:4401	ABO
RemittanceIdentifier			M	an..35	70	14	RFF	C506:1154	PQ
InstructedAmount			M	n..15	33B (2nd component)	16	MOA	C516:5004	98
	AmountCurrencyIdentifier	Currency as attribute to Amount	M	a 3	33B (1st subfield)	16	MOA	C516:6345	98
ChargeCode			M	a 3	71A	20	FCA	4471	
DateOptionDetails			O						
	DateSpecificationCode	Attribute to DateOption for debit / credit date	M	a 3					
	OptionDate	Debit / Credit date	O	an 10	32A (1st component)	3	DTM	C507:2380	203 209
	OptionTime	Time indication to date	C	n 4	13C (2nd component)	—	—	—	—

ANNEX B: XML STYLE SHEET EXAMPLE (ENGLISH)

National translations are available in ECBS TR607.

Example of ePI XML style sheet with all data elements present (UPDATED WITH UK TR607 Stylesheet example)

ePI - electronic Payment Initiator	
ePI Date	<input type="text" value="2003-04-30"/>
ePI Reference	<input type="text" value="ABCDE1234567890"/>
Website address for Beneficiary	<input type="text" value="http://www.ecbs.org"/>
e-Mail address for Beneficiary	<input type="text" value="ecbs@ecbs.org"/>
Order Information	<input type="text" value="This is an ePI test message based on ECBS EBS602 Standard"/>
Ordering Customer's Bank	<input type="text" value="TESTTEST123"/>
Ordering Customer Identification	<input type="text" value="FR7618206000999056966400117"/>
Ordering Customer	<input type="text" value="optional: customer name for e.g. EBPP scenario"/>

Credit Transfer Data	
Beneficiary's Bank	<input type="text" value="AGRIFRPP882"/>
Beneficiary	<input type="text" value="Societe Lumiere SA, Paris, France"/>
Beneficiary's Account Number	<input type="text" value="FR7618206000103056966400117"/>
Payment Reference (for ordering customer's use)	<input type="text" value="for debtor for reconciliation"/>
Reporting Code	<input type="text" value="BEN"/>
Instruction for Beneficiary's Bank	<input type="text" value="PHOB/call 02-733 35 33"/>
Details of Payment	<input type="text" value="52000005678123489012"/>
Charges to be paid by	<input type="text" value="SHA"/> BEN (Beneficiary), OUR (Ordering Customer), SHA (Shared)
Currency+ Amount to be paid	<input type="text" value="EUR"/> <input type="text" value="3421.00"/>
Make Payment by	Date <input type="text" value="2003-05-05"/> Time <input type="text" value="12:00:00"/>

Example of ePI XML style sheet with mandatory data elements and DateOption (for example: credit date) present

ePI - electronic Payment Initiator

ePI Date

ePI Reference

Credit Transfer Data

Beneficiary's Bank

Beneficiary

Beneficiary's Account Number

Details of Payment

Charges to be paid by BEN (Beneficiary), OUR (Ordering Customer), SHA (Shared)

Currency+ Amount to be paid

Payment should reach Beneficiary by Date Time

ANNEX C: CHARACTER SET FOR ePI

Data elements shall only contain the following characters:

FOR THE PAYMENT RELATED ELEMENTS:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

0 1 2 3 4 5 6 7 8 9

., - () / ' + : ?

Space

FOR THE EPI HEADER ELEMENTS:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

0 1 2 3 4 5 6 7 8 9

., - () / = ' + : ? ! " % & * < > ; @

Space

It will not be permitted to use accented characters, e.g. ä, ö, ü, é, Å, à, etc. or any national character sets

ANNEX D: HOW TO READ EPI XML

XML schemas define the logical structure (or content model) of an XML document.

Every XML element has a name, which is defined as Simple or Complex Type and may have a number of attributes.

Simple types

A "simple type" element is defined as a datatype that only contains values and no element or attributes. The element type is usually prefixed by the namespace prefix **xsd: string**, indicating that it is a predefined XML schema datatype.

Complex types

"Complex type" is a datatype which may contain attributes, elements and text. Adding sub elements to an element, automatically defines the element with the content model as complex (Details entry helper content=complex.).

Representation	XML derived type	XML primitive type	XML attribute	Supported XML Schema Facets
Amount	Complex type with simple type	Decimal	Currency	minInclusive, minExclusive, maxInclusive, maxExclusive, totalDigits and FractionDigits
Code	Simple type	String	None	Enumeration
Date / Time	Complex type with simple type	Date, Time	DateSpecification	maxInclusive, maxExclusive
Identifier	Simple type	String	None	MinLength, MaxLength
Text	Simple type	String	None	Length, MinLength, MaxLength
URL	Simple type	AnyURI	none	none
