

Handelsbanken

E-PAYMENT IMPLEMENTATION GUIDE VERSION 003

USED IF THE E-PAYMENT AGREEMENT IS OPENED AFTER 19.5.2013

Changes

11.6.2014	Corrected addresses. Example: /SHBlogin.html > /login.html
15.4.2014	New address: https://verkkomaksu.handelsbanken.fi/vm/...
2.1.2014	Handelsbanken's logo from support or branch
31.7.2013	Changed the order of fields when calculating the payment confirmation MAC (NET_ALG)
10.5.2013	Version 003 is used if the e-payment agreement is opened after 19.5.2013. The payment verification (NET_MAC) is calculated with SHA256 algorithm using 64 characters long key. Seller company can agree on the return of funds message

Table of Contents

1 General	1
2 E-payment agreement	1
3 E-payment name and logo	1
4 Security	1
5 E-payment message	2
6 E-payment status inquiry	6
7 Return of funds to the payer (credit)	9
8 Testing	11
9 Implementation	11
10 Support	11

1 General

E-commerce is constantly increasing. With the help of e-payments, customers can effortlessly, quickly and safely purchase products over the Internet.

This guide defines the requirements for e-payment implementation by the seller company as well as message descriptions for building the system.

The implementation requires that the selling company can create an electronic invoice as well as generate information required for e-payment messages.

If necessary, the seller can obtain information on the client's payment immediately, if a confirmation of successful payment is attached to the return message. The seller can also verify the payment from the next account statement or incoming reference payments.

It is also possible to make a separate e-payment status inquiry and return e-payment to the payer.

Account statement and incoming reference payment information are available in accordance with the seller's agreement with Handelsbanken.

The address for Handelsbanken's e-payment is

<https://verkkomaksu.handelsbanken.fi/vm/login.html>

Old address can be used until the end of 2014
(<https://verkkomaksu.inetpankki.samlink.fi/vm/SHBlogin.html>).

The e-payment service is available 24 hours/day.

2 E-payment agreement

The use of e-payment service requires that the seller has an account and an e-payment agreement with Handelsbanken Finland.

The seller monitors e-payments on account statement or reference payment service.

3 E-payment name and logo

The name of Handelsbanken's Internet payment service is e-payment (E-betalning in Swedish, Verkkomaksu in Finnish).

The service provider may inform its customers on Handelsbanken's e-payment by using Handelsbanken's logotype or text "Handelsbanken".

Handelsbanken's name is written in blue (PMS-286; CMYK: 60 %M and 100 %C). The color code for the web is HEX #003399 or RGB 0 51 153. Typeface is helvetica (neue light or medium).

The logotype or the name of the bank must not be changed or altered in any way.

Handelsbanken's logo can be requested from bank's support unit.

4 Security

All e-payment messages between the seller and Handelsbanken are secured using SSL secured channel. The encryption protects all communication between the bank and the seller from being read or altered.

5 E-payment message

E-payment, FORM fields

	Data	Input name INPUT NAME=	Example	Form AN=alphanumeric A=alphabetical N=numeric	C =Required O=Optional
1.	Payment version	NET_VERSION	"003"	N 3	C
2.	Payment identification	NET_STAMP		AN 20	C
3.	Seller ID	NET_SELLER_ID		AN 13	C
4.	Seller account	NET_SELLER_ACC	Not in use		
5.	Seller name	NET_NAME	Not in use		
6.	Payment language	NET_LANG	Not in use		
7.	Payment amount	NET_AMOUNT	"12345,67"	AN 9	C
8.	Currency	NET_CUR	"EUR"	A 3	C
9.	Payment reference	NET_REF		N 20	C
10.	Payment due date	NET_DATE	"EXPRESS"	AN 10	C
11.	Payment message	NET_MSG		AN 210	O
12.	"Return" link	NET_RETURN		AN 160	C
13.	"Cancel" link	NET_CANCEL		AN 160	C
14.	"Rejected" link	NET_REJECT		AN 160	C
15.	Payment verification	NET_MAC		AN 64	C
16.	Payment confirmation	NET_CONFIRM	YES or NO	A 3	C
17.	Algorithm	NET_ALG	"03" (SHA256)	N 2	C
18.	Key version	NET_KEYVERS	Not in use		

Payment version

Version number of e-payment message. Version 003 is used when the e-payment agreement is opened after 19.5.2013.

Version 001 and 002 are used if the e-payment agreement was opened before 19.5.2013.

All sellers should migrate to version 003 by 31st September 2014 at the latest.

Payment identification

The seller gives each payment a unique identification code, which can be used to match payer's transaction by the seller.

Seller ID

Based on the Seller ID, the e-payment form will display seller's name and account number. The ID has been marked on the e-payment agreement, in the fields "Service ID" (palvelutunnus/service signum) and "Verification" (tarkiste/precisering). Seller ID is formed as one character string without spaces. E.g. the service ID is 1234567890 and the verification is 123, thus the seller's ID is 1234567890123.

The seller's account

Not used

Seller's name

Not used

Payment language

Not used

Payment amount

The payment amount can be at most EUR 2000,00 and at least EUR 0,01. The amount must be given without thousand separators. The decimal separator, in the form of a comma, is obligatory. The amount is presented always with two decimals.

Currency

EUR

Payment reference

Payment reference specifies the payment in service provider's ledger (only so called Finnish domestic reference can be used). Rules to create references can be found at **The Federation of Finnish Financial Services** (www.fkl.fi).

Payment due date

Only immediate payments are possible, the value is EXPRESS.

Payment message

If so desired, specific payment information can be added to the payer's e-payment form. There are 35 characters available on six lines. Message is not included in the e-payment transaction.

Return link

URL to which the customer returns to after a successful payment.

When leaving the place of sale, the return link can be e.g. in the following form: *<http://ostos.kauppa.fi/cgi-bin/valmis?suoritettu>*, in which case the return link for moving from the bank to the place of sale is in the form *<http://ostos.kauppa.fi/cgi-bin/valmis?suoritettu&001&>*

01234567890123456789&123&2000010145789811234&calculated_mac if the value of the NET_CONFIRM data field is "YES".

Cancel link

URL to which the customer returns to if customer cancels the payment.

Rejected link

The web page of the place of sale to which the customer is directed if the payment is rejected by the e-payment service.

Payment verification

The payment verification is calculated with SHA256 algorithm, and is changed to a hexadecimal presentation form of 64 character length in capital letters. A character line is first formed of the following data fields, in the following order:

```
NET_VERSION&
NET_STAMP&
NET_SELLER_ID&
NET_AMOUNT&
NET_REF&
NET_DATE&
NET_CUR&
NET_RETURN&
NET_CANCEL&
NET_REJECT&
NET_ALG&
Security verification key&
```

The security verification key is delivered in two parts. The first part is mailed to the contact person of the seller company using the company's official address. The second part of the verification key is sent by e-mail to an e-mail address defined on the e-payment agreement.

The security verification key is 64 characters long in total.

There must be no white space characters in the line and the "&" signs are included in the calculation.

An example of a character line:

```
003&1365485826567&0000010014001&1,20&12344&EXPRESS&EUR&http://auto/kauppa?
ACTION=NAYTA_VASTAUS&NET_SELLER_ID=0000010014001&http://auto/kauppa?ACTI
ON=MAKSUSSA_VIRHE&NET_SELLER_ID=0000010014001&http://auto/kauppa?ACTION
=ERROR&NET_SELLER_ID=0000010014001&03&11111111111111111111111111111111
11111111111111111111111111111111&
```

will result in

```
41EF98C4242F9C3DF5D639C6C67B55942191CB1D18A14A3AD5A6E502C927413A.
```

Payment confirmation

If the value of the NET_CONFIRM field is "YES", the seller will receive information about the payment with the return link. In forming the return link, a MAC verification is used, through which the seller can ensure that the e-payment has been successfully accomplished. The seller can only get complete confirmation of successful payment, however, from the account statement or incoming reference payments. The seller can also make a separate e-payment inquiry.

If the value is "YES", the following information will be added at the end of the return link:

NET_RETURN_VERSION	"003"
NET_RETURN_STAMP	Specific payment verification
NET_RETURN_REF	Original payment ref. No
NET_RETURN_PAID	Individual transaction ID in the bank system
NET_ALG	"03"
NET_RETURN_MAC	Return data verification

NET_RETURN_PAID is in AN form, maximum length 20 characters.
NET_RETURN_MAC is calculated as hash value:

```
NET_RETURN_VERSION&  
NET_RETURN_STAMP&  
NET_RETURN_REF&  
NET_RETURN_PAID&  
NET_ALG  
Security verification key&
```

The hash value is calculated using the SHA256 algorithm, and the result is changed to a hexadecimal presentation form of 64 character length in capital letters.

There must be no empty characters in the character line and the "&" characters are included in the calculation. For example, the character line

```
003&01234567890123456789&123&20000101457898111234&03&1111111111111111111111  
&
```

will result in

```
4D580E3C797C9ACFDC465F7A66BDC7F7060AC5A75F2ABC480FE06DDB23B966D9.
```

When using test ID the value of NET_RETURN_PAID is "null".

Algorithm

"03" is used for SHA256.

Key version

Not used

6 E-payment status inquiry

With e-payment inquiry the service provider can verify that a payment has been paid.

Please note that the status inquiry function does not support testing with test-id (NET_SELLER_ID = 0000000000). For example the value of NET_RETURN_MAC is calculated without the security verification key.

6.1 Agreement

The use of status enquiry message is agreed in the e-payment agreement.

6.2 Message description

The internet address for e-payment inquiry is:

<https://verkkomaksu.handelsbanken.fi/vm/kysely.html>

Old address can be used until the end of 2014

(<https://verkkomaksu.inetpankki.samlink.fi/vm/SHBkysely.html>).

The inquiry service is available 24 hours/day.

6.3 E-payment status request

	Data	Data name INPUT NAME=	Example	Form	C= Required O= Optional	
1.	Payment version	NET_VERSION	"003"	N 3	C	
2.	Seller ID	NET_SELLER_ID		AN 13	C	
3.	Payment identification	NET_STAMP	Identification of original payment	AN 20	O	C
4.	Payment reference	NET_REF	Standard reference of original payment	AN 20	O	
5.	"Return" link	NET_RETURN	Return link address	AN199	C	
6.	Algorithm	NET_ALG	03 (=SHA256)	N 2	C	
7.	Payment verification	NET_MAC		AN 64	C	
8.	Key version	NET_KEYVERS	Not in use			

Either Payment identification (NET_STAMP) or Payment reference (NET_REF) is required. If both are included they have to be same as in original payment ie the e-payment which is queried.

The payment verification is calculated with SHA256 algorithm, and the result is changed to a hexadecimal presentation form of 64 character length in capital letters.

A character line is first formed of the following data fields, in the following order:

NET_VERSION&

7 Return of funds to the payer (credit)

The seller company can return funds to the payer using return of funds message. The return amount can be equal or less than the original e-payment amount. Only one return can be linked to one e-payment.

Please note that the credit function does not support testing with test-id (NET_SELLER_ID = 0000000000).

7.1 Agreement

The use of return of funds message is agreed in the e-payment agreement.

7.2 Internet address

The internet address for return of funds message is:

<https://verkkomaksu.handelsbanken.fi/vm/palautus.html>

Old address can be used until the end of 2014

(<https://verkkomaksu.inetpankki.samlink.fi/vm/SHBpalautus.html>)

7.3 Return of funds request

	Data	Data name INPUT NAME=	Example	Form	C=Required O=Optional
1.	Version number	NET_VERSION	"003"	N 3	C
2.	Seller ID	NET_SELLER_ID		AN 17	C
3.	Payment identification	NET_STAMP		AN 20	C
4.	Payment reference	NET_REF		N 20	C
5.	Amount to be returned	NET_AMOUNT	"12345,67"	AN 9	C
6.	Currency	NET_CUR	"EUR"	A 3	C
7.	Message	NET_MSG		AN 210	O
8.	Payment identification of the original e-payment	NET_STAMP_ORG		N 20	C
9.	Payment reference of the original e-payment	NET_REF_ORG		N 20	C
10.	Return link	NET_RETURN		AN 160	C
11.	Algorithm	NET_ALG	"03" (=SHA256)	N 2	C
12.	Payment verification	NET_MAC		AN 64	C
13.	Key version	NET_KEYVERS	Not used		

The payment verification is calculated with SHA256 algorithm. A character line is first formed of the following data fields, in the following order:

Algorithm	NET_ALG	"03" (= SHA256)	N 2	C
Payment verification	NET_MAC		AN 64	C
Key version	NET_KEYVERS	Not used		

The payment verification is calculated with SHA256 algorithm. A character line is first formed of the following data fields, in the following order:

NET_VERSION&
NET_SELLER_ID&
NET_STAMP&
NET_REF&
NET_PAID&
NET_ALG&
Security verification key&

8 Testing

The seller can test the e-payment by using test IDs before the actual implementation. Testing must include the data fields NET_RETURN, NET_CANCEL and NET_REJECT.

In testing, the same net address is used as in production.

If the payer cancels a payment, the link information is relayed according to the NET_CANCEL data field, and if the payment is rejected, it is relayed according to the NET_REJECT field.

Seller verifications:

Service identification (NET_SELLER_ID) = 0000000000
Security verification key = 11111111111111111111
Test account = 448710-126

Only a test buyer can make payments to a test seller, and the transaction never actually takes place. Test buyer accounts are 401910-111012 and 401910-111004. The test user will be shown error and missing fields. There are different pages for error situations occurring in production.

Please note that the status inquiry and credit functionality do not support testing with test-id (NET_SELLER_ID = 0000000000).

9 Implementation

The service will be available on the implementation date stated in the agreement.

10 Support

If you have questions concerning the e-payment service, please contact your Handelsbanken branch or support.

Support: + 358 10 444 2545 (banking days from 8 a.m. to 5 p.m. local time).
E-mail: finhelp@handelsbanken.fi