



# Nordea Connect

Hosted Payment Page API Reference

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## 1 Introduction

This document describes integration process and browser interface between a web shop (later a shop system) and Nordea Connect Payment System (later the payment system). The interface is designed to operate over HTTPS where primary communication channel between a shop system and the payment system is via web browser of an end customer (later buyer). Authentication of both systems and verification of message integrity is implemented using digital signatures.

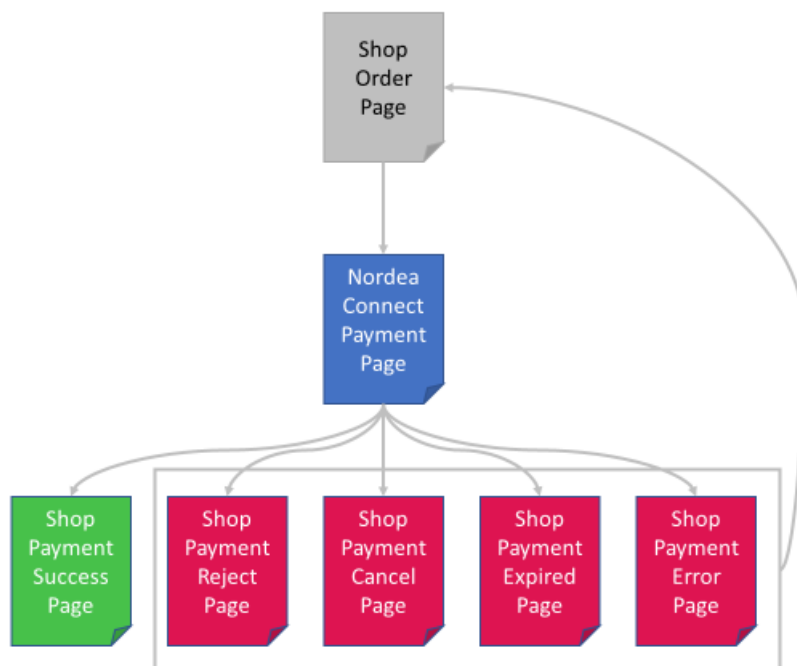
## 2 Interface Description

This section describes technically the payment interface used for enabling third party integrations of shop systems to the payment system.

### 2.1 Process

The payment process starts at the Merchant's Shop Order Page where the order is summarized and the Consumer is presented with a button for moving to the Nordea Connect Payment Page. Pushing the payment button posts the Nordea Connect Payment Initialization Form, redirecting the Consumer to the payment page.

A successful payment process ends with posting of Nordea Connect Payment Success Result Form, redirecting the Consumer to the Shop Success Page. In the case of an unsuccessful payment process, a Payment Cancel Result Form is posted, and the Consumer is redirected to one of the four exception pages (as illustrated below). It's highly recommended to make it possible for the Consumer to move with a single click from any of those pages to the order page to retry the payment.



## 2.2 Transport

Transport between the shop system and the payment system is carried out via the web browser of the buyer and secured using transport layer security (HTTPS) in both connections

- browser to shop system
- browser to payment system.

Only server side certificate granted by public certificate authorities are used in transport layer security. Messages are encoded as HTML forms with UTF-8 character set as part of the page buyer views and transmitted with HTTP POST requests.

## 2.3 Security

Digital signatures are used to authenticate participating systems and to verify message integrity. Messages are signed with two different alternative algorithms to allow for a wide variety of technical platforms to be supported. The public key size is 1024.

### 2.3.1 Calculating Digital Signature from Form Parameters

Form parameter name value pairs are sorted by key according the following collation: "0123456789- \_abcdefghijklmnopqrstuvwxyz". The signed content is created from this value list according to the following format:

#### 2.3.1.1 *Format of the Signed Parameter Content*

Note: If ';' occurs in value it will be replaced with ';' in signature content string. This applies to both requests and responses.

```
<key1>=<value1>;<key2>=<value2>;...<keyN=valueN>;
```

#### 2.3.1.2 *Example of the Signed Parameter Content*

```
i-f-1-3_order-currency-code=978;...;
```

### 2.3.2 Digital Signature Types

Current supported types are as follows:

Signature Number	Algorithm	Query Parameter
1	RSA with SHA-1	s-t-256-256_signature-one
2	RSA with SHA-512	s-t-256-256_signature-two

There are two separate query parameters in all POSTs for the above signature types.

### 2.3.3 Example POST with signature

```
i-f-1-11_interface-version=3&i-f-1-3_order-currency-code=978&i-t-1-11_bi-unit-
count-0=1
&i-t-1-1_deferred-payment=0&i-t-1-1_recurring-payment=0&i-t-1-1_save-payment-
method=0
&i-t-1-1_skip-confirmation-page=0&i-t-1-3_delivery-address-country-code=246
&i-t-1-4_bi-discount-percentage-0=0&i-t-1-4_bi-vat-percentage-0=2300
&i-t-1-4_order-vat-percentage=2300&l-f-1-20_order-gross-amount=1230
&l-f-1-20_order-net-amount=1000&l-f-1-20_order-vat-amount=230
&l-t-1-20_bi-gross-amount-0=1230&l-t-1-20_bi-net-amount-0=1000
&l-t-1-20_bi-unit-cost-0=1000&l-t-1-20_saved-payment-method-id=
&locale-f-2-5_payment-locale=fi_FI
&s-f-1-100_buyer-email-address=foo.bar%40nordea.com
&s-f-1-10_software-version=1.0.1&s-f-1-30_buyer-first-name=John
&s-f-1-30_buyer-last-name=Smith&s-f-1-30_software=My+Web+Shop
&s-f-1-36_merchant-agreement-code=line-test-merchant-agreement-code
&s-f-1-36_order-number=1336741353584
&s-f-32-32_payment-token=4952A81A2BD143AA3FDDF6D8BB5EF432
&s-f-5-128_cancel-url=https%3A%2F%2Fdev-test-ecom%2Ftest-shop%2Fcancel
&s-f-5-128_error-url=https%3A%2F%2Fdev-test-ecom%2Ftest-shop%2Fcancel
&s-f-5-128_expired-url=https%3A%2F%2Fdev-test-ecom%2Ftest-shop%2Fcancel
&s-f-5-128_rejected-url=https%3A%2F%2Fdev-test-ecom%2Ftest-shop%2Fcancel
&s-f-5-128_success-url=https%3A%2F%2Fdev-test-ecom%2Ftest-shop%2Freceipt
&s-t-1-30_bi-name-0=test-basket-item-0
&s-t-1-30_buyer-phone-number=%2B358+40+163+9099
&s-t-1-30_delivery-address-city=City
&s-t-1-30_delivery-address-line-one=Street+Address+%231
&s-t-1-30_delivery-address-line-three=Street+Address+%233
&s-t-1-30_delivery-address-line-two=Street+Address+%232
&s-t-1-30_delivery-address-postal-code=00234&s-t-1-30_payment-method-code=&s-t-1-
30_style-code=
&s-t-1-36_order-note=x213
&s-t-256-256_signature-
one=13AE7CC1B32F385A487354FDD83E9EDADEF122A730766EF38CC3A0E64F72B0D40E16
E40C1072CD221F55A70E5594692C06B6A1BCAC0A48CE57E869D67585BFE206DADE823CD7FA03C3B6B
D13B9D42AEC83
86521890526EB476FE42F4591F52388775CE013120F4D2556CA0956C820241C03BAB5097CC3368611
82D5ED72DA09DE
&t-f-14-19_order-timestamp=2012-05-11+13%3A02%3A33
&t-f-14-19_payment-timestamp=2012-05-21+13%3A04%3A26
```

## 2.4 Reliability

### 2.4.1 Selecting Working Payment Node

When a Consumer has completed their shopping and is ready to pay, before they are sent to Nordea Connect Hosted Payment Page, the shop system must perform an availability check to the payment node. This is done with an HTTP Get to a payment node, if the payment node is working, it will respond with an HTTP 200 OK. Otherwise try another payment node.

### 2.4.2 Ensuring Transmission of Payment Result

The payment interface has two different feedback channels to signal payment result. First channel is the consumer returning with browser to web shop thus making a result form POST. Second channel is redundant programmatic posting of result form directly from the payment system to the shop system. This is done to guarantee sending of result form in case of premature closing of browser of the buyer. The redundant POST is sent to a static delayed result URL which is configured by the Merchant in Nordea Connect Merchant Portal under the eCommerce -> Merchant Settings tab. Please see Nordea connect Merchant Portal User Guide for more information.

Note that the URL for delayed success result must not be a redirect, only direct URLs are supported. The shop must reply with HTTP 200 status as other status codes will result in the payment system to retry sending the delayed result to the shop. Actual contents of the page are not checked by the payment system.

## 2.5 Page URLs

Name	Description	Posted Form
Nordea Connect E-Commerce Payment Node #1 Availability	The URL to payment node #1 availability check page.	
Nordea Connect E-Commerce Payment Node #2 Availability	The URL to payment node #2 availability check page.	
Nordea Connect E-Commerce Payment Node #1 Payment Page	The URL to payment node #1 payment page.	Payment Initiation Form
Nordea Connect E-Commerce Payment Node #2 Payment Page	The URL to payment node #2 payment page.	Payment Initiation Form
Web Shop Payment Success Page	The URL to payment success page of the web shop.	Payment Success Result Form
Web Shop Payment Rejected Page	The URL to payment rejected page of the web shop.	Payment Cancel Result Form
Web Shop Payment Canceled Page	The URL to payment canceled page of the web shop.	Payment Cancel Result Form
Web Shop Payment Expired Page	The URL to payment expired page of the web shop.	Payment Cancel Result Form
Web Shop Payment Error Page	The URL to payment error page of the web shop.	Payment Cancel Result Form



## 2.6 Messages

### 2.6.1 Availability Get

HTTP GET directed to one of the payment page URLs will result in a HTTP 200 (OK) and an empty response content if the node is available. Any HTTP error code or other content in the response or no response at all (timeout) indicates that the payment system node is not available.

### 2.6.2 Payment Initialization Post

Optional fields without values should to be omitted entirely from the HTTP POSTs.

#### 2.6.2.1 Payment Initialization Form Parameters

Name	Format	Opt	Example Value	Title	Version	Description
s-f-32-32_payment-token	String with 32 characters.	No	FA12...FF	Payment Token	3	SHA-256 hash of combination of merchant agreement code, order number and payment timestamp: SHA-256 s-f-1-36_merchant-agreement-code + ';' + s-f-1-36_order-number + ';' + t-f-14-19_payment-timestamp) converted to upper case hexadecimal string and truncated to 32 character string.
locale-f-2-5_payment-locale	String with length of 2-5 characters.	No	fi_FI	Locale	3	The language locale used by buyer. Supported locales are: fi_FI, sv_SE, no_NO, dk_DK, sv_FI and en_GB. Nonsupported languages are redirected to en_GB.
t-f-14-19_payment-timestamp	yyyy-MM-dd HH:mm:ss	No	2012-04-21 21:50:01	Payment Timestamp	3	UTC timestamp defining the payment start time from web shop point of view. If payment is retried then payment timestamp have to differ from first payment for same order.
s-f-1-36_merchant-agreement-code	String with length of 1-36 characters.	No	023423423345	Merchant Agreement Code	3	Textual code of the merchant agreement.
s-f-1-36_order-number	String with length of 1-36 characters.	No	123	Order Number	3	Textual order number assigned by shop system. Valid characters are a-z, A-Z, 0-9 and minus sign.
t-f-14-19_order-timestamp	yyyy-MM-dd HH:mm:ss	No	2010-01-01 01:01:32	Order Timestamp	3	UTC timestamp defining the orders time from web shop point of view.
s-t-1-36_order-note	String with length of 0 or 1-36 characters.	Yes	Example note.	Order Note	3	Custom parameter reserved for shop system to use.
i-f-1-3_order-currency-code	String with length of 1-3 numeric characters.	No	978	Currency Code	3	Numeric ISO 4217 currency code.
l-f-1-20_order-gross-amount	64 bit signed integer value formatted as a string with 1-20 numeric characters.	No	100	Gross Amount	3	Total amount including taxes and discount with two decimal precision. Example value corresponds to 1 EUR.
l-f-1-20_order-net-amount	64 bit signed integer value formatted as a string with 1-20 numeric characters.	No	100	Net Amount	3	Total amount with two decimal precision. Calculated by summing over basket item net amounts. Example value corresponds to 1 EUR.
l-f-1-20_order-vat-amount	64 bit signed integer value formatted as a string with 1-20 numeric characters.	No	100	VAT Amount	3	Value added tax amount with two decimal precision. Example value corresponds to 1 EUR.

i-t-1-4_order-vat-percentage	Integer formatted as string with 0,1-4 numeric characters	Yes	2250	VAT Percentage	3	Value added tax with two decimal precision. Example value corresponds to 22,5%. Can be empty if multiple VAT percentages are used in order.
s-t-1-2048_image-url	String with length of 1-2048 characters.	Yes	http://www.testshop.com/merchant_logo.png	Image URL	5	Order image URL, currently used in AfterPay payment method. Image can be seen on the invoice and next to installments in AfterPay portal. The merchant can provide a working url for a square or rectangled image. Size constraints: 100-1280px
s-f-1-30_buyer-first-name	String with length of 1-30 characters.	No	John	First Name	3	First name of the buyer.
s-f-1-30_buyer-last-name	String with length of 1-30 characters.	No	Smith	Last Name	3	Last name of the buyer.
s-t-1-30_buyer-phone-number	String with length of 0,1-30 characters.	Yes	+358 40 2342342	Phone Number	3	Phone number of the buyer.
s-f-1-100_buyer-email-address	String with length of 1-100 characters.	No	john.smith@gmail.com	Email Address	3	Email address of the buyer.
s-t-1-255_buyer-external-id	String with length of 1-255 characters.	Yes	213123123	Buyer External Identifier	3	Identifier of the buyer assigned by web shop. To be used only in such cases where a unique buyer identifier defined by web shop system is required.
s-t-1-30_delivery-address-line-one	String with length of 0,1-30 characters.	Yes	Street 31	Delivery Address Line #1	3	Line one of the delivery address.
s-t-1-30_delivery-address-line-two	String with length of 0,1-30 characters.	Yes	Apartment 2	Delivery Address Line #2	3	Line two of the delivery address.
s-t-1-30_delivery-address-line-three	String with length of 0,1-30 characters.	Yes	Room 3	Delivery Address Line #3	3	Line three of the delivery address.
s-t-1-30_delivery-address-city	String with length of 0,1-30 characters.	Yes	Helsinki	Delivery Address City	3	City of the delivery address.
s-t-1-30_delivery-address-postal-code	String with length of 0,1-30 characters.	Yes	00270	Delivery Address Postal Code	3	Postal code of the delivery address.
i-t-1-3_delivery-address-country-code	String with length of 0,1-3 characters.	Yes	246	Delivery Address Country Code	3	Numeric ISO 3166 country code of the delivery address.
s-t-1-30_payment-method-code	String with length of 1-30 characters.	Yes	visa	Payment Method Code	3	Code identifying the chosen payment method or empty string if payment method is not chosen. Value can be found in Appendix (please see the end of this document)
l-t-1-20_saved-payment-method-id	64 bit signed integer value formatted as a string with 1-20 numeric characters.	Yes	242	Payment Method ID	3	ID of the saved payment method.
s-t-1-30_style-code	String with length of 1-30 characters.	Yes	my-style	Style	3	Code identifying the style sheet used in payment page or empty string if default style sheet is used.

i-t-1-1_deferred-payment	Integer with value 0 or 1.	Yes	1	Deferred Payment	3	Integer defining that payment is deferred payment. 0) Not deferred payment. 1) Deferred payment.
i-t-1-1_web-terminal-payment	Integer with value 0 or 1	Yes	0	Web Terminal Payment	3	If set to 1 instructs the payment process to skip payer identification and make a MOTO transaction. 0) Normal payment. 1) Web terminal (MOTO) payment (e.g. order taken in by merchant help desk/phone sales).  Cannot be used without being agreed to with Nordea Connect first.
i-t-1-1_recurring-payment	Integer with value 0 or 1.	Yes	1	Recurring Payment	3	Integer defining that payment is recurring payment. If set to 1 then parameters s-t-1-30_recurring-payment-subscription-name, s-t-1-30_recurring-payment-subscription-code and i-t-1-3_recurring-payment-subscription-expected-period are also mandatory. The post that provides the first details. The following recurring payments are initiated via Server Interface. 0) Not recurring payment. 1) Recurring subscription should be created  When this is set to 1, only recurring subscription is created. If a recurring payment should be processed after subscription creation, it must be processed via Server Interface as Payment Interface creates only the subscription.  Cannot be used without being agreed to with Nordea Connect first.  NOTE: Either s-t-1-30_buyer-phone-number or s-t-1-255_buyer-external-id needs to be present for recurring payment to be saved.
s-t-1-30_recurring-payment-subscription-name	String with length 1-30 characters.	Yes	Merchant Magazine Order	Subscription Name	3	Human-readable name of the subscription that the payer can identify.
s-t-1-30_recurring-payment-subscription-code	String with length 1-30 characters.	Yes	MMOSubs123	Subscription Code	3	Subscription code that should be unique in the merchant's system.
i-t-1-3_recurring-payment-subscription-expected-period	Integer with value of 7-999	Yes	7	Subscription Period	3	Number of days expected between recurring payments. Safeguards payer from being billed multiple times in short period. The limits are to be agreed with Nordea Connect.
t-t-14-19_recurring-payment-subscription-end	yyyy-MM-dd HH:mm:ss	Yes	2012-06-13 14:38:11	Subscription End	3	Datetime when the subscription ends - no payments can be done after this. Can be left empty, which means that the recurring payment is valid and can be used until the payer's credit card expiry date. If payer's credit card expires, the payments will fail so submitting larger value than that has the same effect than leaving this empty.
i-t-1-1_save-payment-method	Integer with value 0 or 1 or 2 or 3.	Yes	1	Save Payment Method	3	0) <b>Normal payment.</b> If user chooses credit card, then s/he is given save payment yes/no radio button as part of card information page. In case of successful payment with radio button set as yes, the payment is saved into the system.

						<p>1) <b>Save payment method and pay.</b> Card information page will not contain "save payment" radio button. When payment is successful, the credit card is saved into the system</p> <p>If payment method is not given, only cards are offered to user.</p> <p>No texts are changed.</p> <p>NOTE: Payment Method Code can be supplied, but only credit card payments are accepted.</p> <p>2) <b>Save payment only.</b> UI texts will be changed, so that user is communicated that her credit card will be saved, but it will not be charged. Pay buttons will contain "Save card" and so on.</p> <p>Payment details page and Shopping baskets are not shown.</p> <p>Card information page does not contain save payment radio button.</p> <p>The card will be authorized with the given sum, but the authorized funds will not be captured. The funds used in authorization will be reversed immediately to buyer. Card will be saved to the system.</p> <p>Field i-t-1-1_skip-confirmation-page is assumed to be "1" even if 0 (or empty) is given.</p> <p>3) <b>Disable save payment UI.</b> Save payment options will be removed from UI. In this case credit card will not be saved in system.</p> <p>NOTE2: The payment sum <u>must be filled out</u>, the funds are authorized and the payment sum will be shown in 3D secure, if 3d secure is used. It is suggested to use smallest possible amount (such as 0.01 €) for the charge, even the funds are returned immediately to the end user.</p> <p>NOTE3: UI features "Payment details button disable" and "shopping basket disable" are present on templates and templates predating this feature, will show those features.</p> <p>NOTE4: Either s-t-1-30_buyer-phone-number or s-t-1-255_buyer-external-id needs to be present for saving to be allowed</p>
i-t-1-1_register-token	Integer with value 0 or 1	Yes	1	Register Token	3	When payment is successful, a token is registered for the card that the user has used.
i-t-1-1_token-extra-info	Integer with value 0 or 1	Yes	1	Request extra info on token	5	If token is successfully registered, masked pan will be returned in response.
i-t-1-1_token-scope	Integer with value 1,2,3	Yes	1	Token scope	5	<p>Value to indicate which scope token should belong to.</p> <ol style="list-style-type: none"> <li>1. Terminal group</li> <li>2. Company</li> <li>3. Company group</li> </ol>
s-t-1-36_service-code	String of max 36 chars	Yes	service_code	Register Token	5	The parameter will be used only if i-t-1-1_register-token is 1. If filled, the token will be associated to a specific VAS code and s-t-1-36_service-code will overrule i-t-1-1_token-

						scope (existing tokens are searched by service code only and not scope). It is also used for token distribution to acquirer.
i-t-1-1_skip-confirmation-page	Integer with value 0 or 1.	Yes	1	Skip Confirmation	3	Integer defining if confirmation page after successful payment should be skipped. 0) Include confirmation page to payment process. 1) Skip confirmation page in payment process.  If the page has payment progress indicator, the confirmation step will not be shown if it is set to be skipped (this is present on templates and templates predating this will show confirmation step, even if it is set to be skipped).
s-f-5-128_success-url	String with length of 5-128 characters.	No	<a href="https://e.com/success">https://e.com/success</a>	Success URL	3	URL of the web shop payment success page.  "Mandatory only If you use version 3 of the interface. If so, you must use this parameter but you must not use this parameter with versions 4 and later" to the first fields.
s-f-5-128_rejected-url	String with length of 5-128 characters.	No	<a href="https://e.com/cancel">https://e.com/cancel</a>	Rejected URL	3	URL of the web shop payment rejected page.  Mandatory only If you use version 3 of the interface. If so, you must use this parameter but you must not use this parameter with versions 4 and later to the first fields.
s-f-5-128_cancel-url	String with length of 5-128 characters.	No	<a href="https://e.com/cancel">https://e.com/cancel</a>	Cancel URL	3	URL of the web shop payment buyer canceled page.  Mandatory only If you use version 3 of the interface. If so, you must use this parameter but you must not use this parameter with versions 4 and later to the first fields.
s-f-5-128_expired-url	String with length of 5-128 characters.	No	<a href="https://e.com/cancel">https://e.com/cancel</a>	Expired URL	3	URL of the web shop payment expired page.  Mandatory only If you use version 3 of the interface. If so, you must use this parameter but you must not use this parameter with versions 4 and later to the first fields.
s-f-5-128_error-url	String with length of 5-128 characters.	No	<a href="https://e.com/cancel">https://e.com/cancel</a>	Error URL	3	URL of the web shop payment error page.  Mandatory only If you use version 3 of the interface. If so, you must use this parameter but you must not use this parameter with versions 4 and later to the first fields.
s-f-5-256_success-url	String with length of 5-256 characters.	No	<a href="https://e.com/success">https://e.com/success</a>	Success URL	4	URL of the web shop payment success page. Mandatory only if you use version 4 or higher of the interface. If so, you must use this parameter but you must not use this with version 3. to the latter fields as extra information.
s-f-5-256_rejected-url	String with length of 5-256 characters.	No	<a href="https://e.com/cancel">https://e.com/cancel</a>	Rejected URL	4	URL of the web shop payment rejected page.  Mandatory only if you use version 4 or higher of the interface. If so, you must use this parameter but you must not use this with version 3. to the latter fields as extra information.
s-f-5-256_cancel-url	String with length of 5-256 characters.	No	<a href="https://e.com/cancel">https://e.com/cancel</a>	Cancel URL	4	URL of the web shop payment buyer canceled page.  Mandatory only if you use version 4 or higher of the interface. If so, you must use this parameter but you must not use this with version 3. to the latter fields as extra information.
s-f-5-256_expired-url	String with length of 5-256 characters.	No	<a href="https://e.com/cancel">https://e.com/cancel</a>	Expired URL	4	URL of the web shop payment expired page.  Mandatory only if you use version 4 or higher of the interface. If so, you must use this parameter

						but you must not use this with version 3. to the latter fields as extra information.
s-f-5-256_error-url	String with length of 5-256 characters.	No	<a href="https://e.com/cancel">https://e.com/cancel</a>	Error URL	4	URL of the web shop payment error page.  Mandatory only if you use version 4 or higher of the interface. If so, you must use this parameter but you must not use this with version 3. to the latter fields as extra information.
s-t-5-256_change-server-to-server-success-url	String with length of 5-256 characters	Yes	<a href="https://shop.com/response">https://shop.com/response</a>	Delayed success URL	5	URL of the delayed success URL for the web shop.
s-t-1-32_type-of-payment	String with length of 1-32	Yes	card-payment	Type of payment	5	Type of payment limit: to limit the payment type to be shown, card-payment, electronic-payment or invoice-payment.
s-f-1-30_software	String with length of 1-30 characters.	No	My Shop Software	Software	3	Name of the web shop software.
s-f-1-10_software-version	String with length of 1-10 characters.	No	1.0.1	Software Version	3	Version of the web shop software.
i-f-1-11_interface-version	String with length of 1-11 numeric characters.	No	1	Interface Version	3	Version of the payment interface.
s-t-1-40_submit	String with length of 1-40 characters.	Yes	Submit	Submit Button	3	The submit button.
s-t-256-256_signature-one	String with length of 256 characters.	Yes	FA12...FF	Signature One	3	128 byte signature converted to upper case hexadecimal string.
s-t-256-256_signature-two	String with length of 256 characters.	Yes	FA12...FF	Signature Two	3	128 byte signature converted to upper case hexadecimal string.
i-t-1-1-skip-three-d-secure	Integer with value 0 or 1.	Yes	1	Skip 3DSecure	5	Integer defining whether 3DSecure to be skipped for this payment. 0) Do not skip 3DSecure. 1) Skip 3DSecure.  Cannot be used without being agreed to with Nordea Connect first.
s-t-1-30-delivery-address-first-name	String with length of 1-30 characters	Yes	John	First Name	5	First Name of the Ship To address
s-t-1-30-delivery-address-last-name	String with length of 1-30 characters	Yes	Smith	Last Name	5	Last Name of the Ship To address
s-t-1-30-delivery-address-state	String with length of 1-30 characters	Yes	Northern Savonia	State	5	State of the Ship To address
s-t-1-30-delivery-address-phone-number	String with length of 1-30 characters	Yes	+358 40 163 9099	Phone number	5	Phone number of the Ship To address
s-t-1-100-delivery-address-email	String with length of 1-100 characters	Yes	<a href="mailto:john.smith@gmail.com">john.smith@gmail.com</a>	Email	5	Email address of the Ship To address
s-t-1-1024_dynamic-feedback	String with length of 1-1024	Yes	s-t-1-6_authorization-number, i-f-1-20_dynamic-reference-number, s-t-1-30_card-type, s-t-1-6_card-expiry-date, s-t-1-4_error-code	Dynamic feedback	5	Comma separated list of optional parameters to be added to the response if available.

			i-t-1-2_card-3ds-auth-status i-t-1-1_card-3ds-enrollment-status s-t-1-1_3ds-charge-back i-t-1-3_customer-ip-country i-t-1-3_card-issued-country i-t-2-2_card-pan-last2 i-t-6-6_card-pan-first6 s-t-1-256_token-two-way s-t-1-8_card-product (applies only to specific issuer)			
s-t-0-11_social-security-number	String with length 0-11	Yes	071259-999M	Social security number	3	Social security number of the buyer. Used only by Consumer Finance.

### 2.6.2.2 Mandatory Transaction Information

The merchant needs to provide the following minimum mandatory information:

Mandatory Transaction Information	Description
l-f-1-20_order-gross-amount	1. <b>IF</b> save-payment-method equals to 2, <b>THEN</b> the amount value could equal or be greater than 0. 2. <b>IF</b> save-payment-method does not exist <b>OR</b> its value doesn't equal to 2, <b>THEN</b> the amount value could only be greater than 0.
l-f-1-20_order-net-amount	Mandatory
l-f-1-20_order-vat-amount	Mandatory
i-f-1-3_order-currency-code	Mandatory
s-f-1-36_order-number	Mandatory
s-f-1-100_buyer-email-address	Mandatory
s-f-1-30_buyer-first-name	Mandatory
s-f-1-30_buyer-last-name	Mandatory
t-f-14-19_order-timestamp	Mandatory
s-f-1-36_merchant-agreement-code	Mandatory
s-t-1-30_buyer-phone-number s-t-1-255_buyer-external-id	1. <b>IF</b> save-payment-method equals to 2, either buyer-phone-number or buyer-external-id are mandatory. Both can also be used. 2. Optional with save-payment-method values other than 2.

### 2.6.2.3 Initialization Form Example

```
<form id="integration-form" action="#" method="post">
<table>
<tbody><tr><td>i-f-1-11_interface-version</td><td><input type="text" name="i-f-1-
11_interface-version" value="2"></td></tr>
<tr><td>i-f-1-3_order-currency-code</td><td><input type="text" name="i-f-1-
3_order-currency-code" value="978"></td></tr>
<tr><td>i-t-1-11_bi-unit-count-0</td><td><input type="text" name="i-t-1-11_bi-
unit-count-0" value="1"></td></tr>
<tr><td>i-t-1-1_deferred-payment</td><td><input type="text" name="i-t-1-
1_deferred-payment" value="0"></td></tr>
<tr><td>i-t-1-1_recurring-payment</td><td><input type="text" name="i-t-1-
1_recurring-payment" value="0"></td></tr>
<tr><td>i-t-1-3_delivery-address-country-code</td><td><input type="text" name="i-
t-1-3_delivery-address-country-code" value="246"></td></tr>
<tr><td>i-t-1-4_bi-discount-percentage-0</td><td><input type="text" name="i-t-1-
4_bi-discount-percentage-0" value="0"></td></tr>
<tr><td>i-t-1-4_bi-vat-percentage-0</td><td><input type="text" name="i-t-1-4_bi-
vat-percentage-0" value="2300"></td></tr>
<tr><td>i-t-1-4_order-vat-percentage</td><td><input type="text" name="i-t-1-
4_order-vat-percentage" value="2300"></td></tr>
<tr><td>l-f-1-20_order-gross-amount</td><td><input type="text" name="l-f-1-
20_order-gross-amount" value="1230"></td></tr>
<tr><td>l-f-1-20_order-net-amount</td><td><input type="text" name="l-f-1-
20_order-net-amount" value="1000"></td></tr>
<tr><td>l-f-1-20_order-vat-amount</td><td><input type="text" name="l-f-1-
20_order-vat-amount" value="230"></td></tr>
<tr><td>l-t-1-20_bi-gross-amount-0</td><td><input type="text" name="l-t-1-20_bi-
gross-amount-0" value="100"></td></tr>
<tr><td>l-t-1-20_bi-net-amount-0</td><td><input type="text" name="l-t-1-20_bi-
net-amount-0" value="100"></td></tr>
<tr><td>l-t-1-20_bi-unit-cost-0</td><td><input type="text" name="l-t-1-20_bi-
unit-cost-0" value="100"></td></tr>
<tr><td>locale-f-2-5_payment-locale</td><td><input type="text" name="locale-f-2-
5_payment-locale" value="fi_FI"></td></tr>
<tr><td>s-f-1-10_software-version</td><td><input type="text" name="s-f-1-
10_software-version" value="1.0.1"></td></tr>
<tr><td>s-f-1-100_buyer-email-address</td><td><input type="text" name="s-f-1-
100_buyer-email-address" value="foo.bar@nordeaconnect.com"></td></tr>
<tr><td>s-f-1-30_buyer-first-name</td><td><input type="text" name="s-f-1-
30_buyer-first-name" value="John"></td></tr>
<tr><td>s-f-1-30_buyer-last-name</td><td><input type="text" name="s-f-1-30_buyer-
last-name" value="Smith"></td></tr>
<tr><td>s-f-1-30_software</td><td><input type="text" name="s-f-1-30_software"
value="My Web Shop"></td></tr>
<tr><td>s-f-1-36_merchant-agreement-code</td><td><input type="text" name="s-f-1-
36_merchant-agreement-code" value="line-test-merchant-agreement-code"></td></tr>
<tr><td>s-f-1-36_order-number</td><td><input type="text" name="s-f-1-36_order-
number" value="1325141018121"></td></tr>
<tr><td>s-f-5-128_cancel-url</td><td><input type="text" name="s-f-5-128_cancel-
url" value="http://127.0.0.1:8081/test-shop/cancel"></td></tr>
<tr><td>s-f-5-128_error-url</td><td><input type="text" name="s-f-5-128_error-url"
value="http://127.0.0.1:8081/test-shop/cancel"></td></tr>
<tr><td>s-f-5-128_expired-url</td><td><input type="text" name="s-f-5-128_expired-
url" value="http://127.0.0.1:8081/test-shop/cancel"></td></tr>
<tr><td>s-f-5-128_rejected-url</td><td><input type="text" name="s-f-5-
128_rejected-url" value="http://127.0.0.1:8081/test-shop/cancel"></td></tr>
<tr><td>s-f-5-128_success-url</td><td><input type="text" name="s-f-5-128_success-
url" value="http://127.0.0.1:8081/test-shop/receipt"></td></tr>
<tr><td>s-t-1-30_payment-method-code</td><td><input type="text" name="s-t-1-
30_payment-method-code" value=""></td></tr>
```



```

<tr><td>s-t-1-30_style-code</td><td><input type="text" name="s-t-1-30_style-code"
value=""></td></tr>
<tr><td>s-t-1-30_bi-name-0</td><td><input type="text" name="s-t-1-30_bi-name-0"
value="test-basket-item-0"></td></tr>
<tr><td>s-t-1-30_buyer-phone-number</td><td><input type="text" name="s-t-1-
30_buyer-phone-number" value="+358 40 163 9099"></td></tr>
<tr><td>s-t-1-30_delivery-address-city</td><td><input type="text" name="s-t-1-
30_delivery-address-city" value="City"></td></tr>
<tr><td>s-t-1-30_delivery-address-line-one</td><td><input type="text" name="s-t-
1-30_delivery-address-line-one" value="Street Address #1"></td></tr>
<tr><td>s-t-1-30_delivery-address-line-three</td><td><input type="text" name="s-
t-1-30_delivery-address-line-three" value="Street Address #3"></td></tr>
<tr><td>s-t-1-30_delivery-address-line-two</td><td><input type="text" name="s-t-
1-30_delivery-address-line-two" value="Street Address #2"></td></tr>
<tr><td>s-t-1-30_delivery-address-postal-code</td><td><input type="text" name="s-
t-1-30_delivery-address-postal-code" value="00234"></td></tr>
<tr><td>s-t-1-36_order-note</td><td><input type="text" name="s-t-1-36_order-note"
value="x213"></td></tr>
<tr><td>state</td><td><input type="text" name="state" value="sign-and-
forward"></td></tr>
<tr><td>t-f-14-19_order-timestamp</td><td><input type="text" name="t-f-14-
19_order-timestamp" value="2011-12-29 06:43:38"></td></tr>
<tr><td>t-f-14-19_payment-timestamp</td><td><input type="text" name="t-f-14-
19_payment-timestamp" value="2011-12-29 06:43:38"></td></tr>
</tbody></table>
</form>

```

#### 2.6.2.4 Initialization Post Response

On success payment system will respond with HTTP status 200 OK. Any other response code indicates availability problem in the payment system node.

## 2.6.3 Payment Success Result Post

### 2.6.3.1 Payment Success Result Form Parameters

Name	Format	Example Value	Supported in version	Title	Description
i-f-1-20_transaction-number	64 bit signed integer value formatted as a string with 1-20 numeric characters.	123	3	Transaction Number	Transaction number identifying the payment transaction. Assigned by payment system.
s-f-1-30_payment-method-code	String with length of 1-30 characters.	visa	3	Payment Method	String key identifying the payment method used. Value can be found in Appendix (please see the end of this document)
s-f-1-36_order-number	String with length of 1-36 characters.	123	3	Order Number	Textual order number assigned by shop system. Valid characters are a-z, A-Z, 0-9 and minus sign.
s-t-1-36_order-note	String with length of 0 or 1-36 characters.	Example note.	3	Order Note	Custom parameter reserved for shop system to use.
t-f-14-19_order-timestamp	yyyy-MM-dd HH:mm:ss	2010-01-01 01:01:32	3	Order Timestamp	UTC timestamp defining the orders time from web shop point of view.
i-f-1-3_order-currency-code	String with length of 1-3 numeric characters.	978	3	Currency Code	Numeric ISO 4217 currency code.
i-f-1-20_order-gross-amount	64 bit signed integer value formatted as a string with 1-20 numeric characters.	100	3	Gross Amount	Gross amount including tax with two decimal
s-f-1-10_software-version	String with length of 1-10 characters.	1.0.1	3	Version	Version of the payment system.
i-f-1-11_interface-version	String with length of 1-11 numeric characters.	1	3	Version	Version of the payment interface.
s-f-1-20_reference-number	String with length of 1-20 characters.	1230000045678	4	Reference Number	Nordea Connect Reference Number of electronic payment.
s-t-256-256_signature-one	String with length of 512 characters.	fa12...ff	3	Signature One	256 byte signature converted to lower case hexadecimal string. String length will be 512 characters but the parameter name includes 256 due to backwards compatibility issues.
s-t-256-256_signature-two	String with length of 512 characters.	fa12...ff	3	Signature Two	256 byte signature converted to lower case hexadecimal string. String length will be 512 characters but the parameter name includes 256 due to backwards compatibility issues.
s-t-1-256_token	String with length of 0 or 1-256 characters.	100	3	Token	Token that was registered for the card that was saved.
s-t-1-26_filing-code	String with length of 0 or 1-26 characters.	1234567890	3	Filing Code	Filing code of the transaction. Returned for card payments.
s-t-0-11_social-security-number	String with length of 0 to 11 characters.	110101-0000	3	Person ID	Person ID of the payer in invoice payments. Returned only for invoices and only when available and agreed to be returned.
s-f-1-100_buyer-email-address	String with length of 1 to 100 characters.	<a href="mailto:someone@nordeaconnect.com">someone@nordeaconnect.com</a>	3	Email address	Email address of the payer in invoice payments. Returned only for invoices and only when available. Note that the value is not necessarily the same as in payment request.
s-t-1-30_buyer-phone-number	String with length of 1 to 30 characters.	+358123456789	3	Phone Number	Phone number of the payer in invoice payments. Returned only for invoices and only when available. Note that the value is not necessarily the same as in payment request.

s-t-1-30_delivery-address-city	String with length of 1 to 30 characters.	Stockholm	3	Delivery Address City	City of invoice payer's address. Returned only for invoices and only when available. Note that the value is not necessarily the same as in payment request.
s-t-1-30_delivery-address-line-one	String with length of 1 to 30 characters.	Lindhagen 112	3	Delivery Address Line One	First line of invoice payer's address. Returned only for invoices and only when available. Note that the value is not necessarily the same as in payment request.
s-t-1-30_delivery-address-line-two	String with length of 1 to 30 characters.	C/O Nordea Inc.	3	Delivery Address Line Two	Second line of invoice payer's address. Returned only for invoices and only when available. Note that the value is not necessarily the same as in payment request.
s-t-1-30_delivery-address-postal-code	String with length of 1 to 30 characters.	001670	3	Delivery Address Postal Code	Postal code of invoice payer's address. Returned only for invoices and only when available. Note that the value is not necessarily the same as in payment request.
i-t-1-3_delivery-address-country-code	Number with length of 1 to 3 digits.	246	3	Delivery Address Country Code	Numeric ISO 3166 country code of the invoice payer's delivery address. Returned only for invoices and only when available. Note that the value is not necessarily the same as in payment request.
s-t-1-6_card-expected-validity	Date formatted as MMyyyy.	122012	4	Expiration date	Card expiration dates. Returned when i-t-1-1_save-payment-method = 1 2 via payment interface or list-saved-payment-methods is used via server interface.
s-t-10-10_token-expiration-date	Date formatted as yyyy-MM-dd.	2010-01-01	5	Token expiration date	Token expiration date.
s-t-1-36_token-masked-pan	String with length of 0 or 1-36 characters.	123456*****0000	5	Masked pan	Masked pan used to generate token. Returned if token extra info is requested.

Parameters present in the response if they were requested with s-t-1-1024\_dynamic-feedback parameter and were available at the time of providing the response.

s-t-1-6_authorization-number	String with length of 1 to 6 characters.	123456	5	Authorization id.	A reference provided by the authorizing institution. Only required in response messages and will only be present where the transaction is approved.
l-f-1-20_dynamic-reference-number	Integer value formatted as string with 1-20 numeric characters.	23452345	5	Dynamic reference number	Dynamic reference number.
s-t-1-30_card-type	String with length of 1 to 30.	visa	5	Card type	Card type.
s-t-1-6_card-expiry-date	String with length of 1 to 6.	042015	5	Expiry date	Expiry date of the card in format MMDDYY.
s-t-1-4_error-code	String with length of 1 to 4.	H002	5	Error code	Error code generated by Sales Connector (Hxxx) or received from acquirer (Bxxx).
i-t-2-2_card-3ds-auth-status	String with length of 2.	03	5	3DS authorization status	Status of 3DS authorization.
i-t-1-1_card-3ds-enrollment-status	String with length of 1.	1	5	3DS enrollment status	Electronic Commerce Indicator (ECI) value is returned by Directory Server to indicate the authentication results of your customer's credit card payment on 3D Secure.
s-t-1-1_3ds-charge-back	String with length of 1.	N	5	3DS charge back	3DS charge-back (J= 3DS, N=CVV after attempt to 3DS, P=only CVV).
i-t-1-3_customer-ip-country	String with length of 1 to 3.	233	5	Estonia	Country code of the customer (resolved from customer ip address).
i-t-1-3_card-issued-country	String with length of 1 to 3.	40	5	Austria	Code of country of the card issuer.

i-t-2-2_card-pan-last2	String of digits with length of 2.	11	5	Last two digits on the card	Last 2 digits of the card used to make the payment.
i-t-6-6_card-pan-first6	String of digits with length of 6.	453288	5	First six digits on the card	First 6 digits of the cars used to make the payment.
s-t-1-256_token-two-way	String with length of 1 to 256.	100	5	Token	Token that was registered for the saved card.
s-t-1-8_card-product	String with length of 1 to 8.	debit	5	Card product	Card product type (applied only to specific issuer).

### 2.6.3.2 Payment Success Result Form Example

```

<form id="integration-form" action="http://127.0.0.1:8081/test-shop/receipt"
method="post">
<input type="hidden" readonly="" name="i-f-1-11_interface-version" value="2">
<input type="hidden" readonly="" name="i-f-1-3_order-currency-code" value="978">
<input type="hidden" readonly="" name="s-t-1-26_filing-code" value="1234567890">
<input type="hidden" readonly="" name="s-f-1-20_reference-number"
value="1230000045678">
<input type="hidden" readonly="" name="l-f-1-20_order-gross-amount" value="1230">
<input type="hidden" readonly="" name="s-f-1-10_software-version"
value="1.0.1467">
<input type="hidden" readonly="" name="l-f-1-20_transaction-number"
value="5120103424">
<input type="hidden" readonly="" name="s-f-1-36_order-number"
value="1325141401745">
<input type="hidden" readonly="" name="s-f-1-30_payment-method-code"
value="nordea-e-payment">
<input type="hidden" readonly="" name="s-t-1-36_order-note" value="x213">
<input type="hidden" readonly="" name="s-t-256-256_signature-one"
value="27F6C1B8EFDD6B10F33D8D09FE1565B79C1937CEF128D972E01162BDA200727E5CE21BA1B3
BE46143763BE31EE372F7D71AE91153703B04BCBCF9396BBC9681EB3862B31B29D21CCC0F552E0871
018EC03793AC2BFD0EC1BE9325E9A3E3BC2B4BDC89BCD222593BC7B78B0C80A3A9254CBDCBF3B7D07
B059910B968189FC5AD5">
<input type="hidden" readonly="" name="s-t-256-256_signature-two"
value="295601A35A4117AE6F2FABE35ED24CA4E2569CF59E87CBB759465E8E89A86E7F57B223FC9C
33F5B6856734A77E450BCD599D51118C5F9408B66C3B0E32EC6088414E76B43F2912549D26FC3FE1F
8DD6C7A13CFCC75A44BECD00CC1290B8147A9929DD1094C9558062F7CA9533E5E92B76B233C8DB6B7
D4BC057A82E671C5667F">
<input type="hidden" readonly="" name="t-f-14-19_order-timestamp" value="2011-12-
29 06:50:01">
<input class="forward-button" type="submit" name="s-t-1-40_shop-receipt__phase"
value="Siirry kuittisivulle">
</form>

```

### 2.6.3.3 *Checking Payment Success Result*

It is important to do the following checks on the success result:

1. l-f-1-20\_transaction-number must be present in the response.
2. s-t-256-256\_signature-one or/and s-t-256-256\_signature-two are valid.
3. s-f-1-36\_order-number and t-f-14-19\_order-timestamp matches to the payment request. All shop systems should save order number and order time stamp before sending the payment request and check that the values in response matches to the values in the request.
4. l-f-1-20\_order-gross-amount and i-f-1-3\_order-currency-code matches to the payment request. All shop systems should save amount and currency before sending the payment request and check that the values in the response match the values in the request.

The above checks are necessary to check that the response is done by Nordea Connect and that the response really is a Payment Success Result. It is strongly advisable to actually check that all of the following parameters are present in the Payment Success Result Post:

- i-f-1-11\_interface-version
- i-f-1-3\_order-currency-code
- l-f-1-20\_order-gross-amount
- s-f-1-10\_software-version
- l-f-1-20\_transaction-number
- s-f-1-30\_payment-method-code
- s-t-1-36\_order-note (if it was provided in request)
- t-f-14-19\_order-timestamp
- s-t-1-256\_token (if registration of token was requested)

Web Shops should also implement the replacement ";" with ";;" in the parameter values in signature validation for responses (similarly than in requests).

**Note:** s-t-1-40\_shop-receipt\_\_phase, s-t-1-40\_shop-order\_\_phase and s-t-1-40\_submit that may be in the response are not used in signature calculation by Nordea Connect and should be excluded from the signature verification process.

### 2.6.3.4 *Payment Success Result Post Response*

On successful processing of the post shop system will respond with HTTP status 200 OK. Any other response code indicates availability problem in the shop system.

## 2.6.4 Payment Cancel Result Post

### 2.6.4.1 Payment Cancel Result Form Parameters

Name	Format	Example Value	Title	Description
s-f-1-36_order-number	String with length of 1-36 characters.	123	Order Number	Textual order number assigned by shop system. Valid characters are a-z, A-Z, 0-9 and minus sign.
s-t-1-30_cancel-reason	String with length of 1-30 characters.	cancel-payment-rejected	Cancel Reason	The reason of payment cancellation. See Payment Cancellation Scenarios below.
s-f-1-10_software-version	String with length of 1-10 characters.	1.0.1	Version	Version of the payment system.
i-f-1-11_interface-version	String with length of 1-11 numeric characters.	1	Version	Version of the payment interface.
s-t-256-256_signature-one	String with length of 512 characters.	fa12...ff	Signature One	256 byte signature converted to lower case hexadecimal string. String length will be 512 characters but the parameter name includes 256 due to backwards compatibility issues
s-t-256-256_signature-two	String with length of 512 characters.	fa12...ff	Signature Two	256 byte signature converted to lower case hexadecimal string. String length will be 512 characters but the parameter name includes 256 due to backwards compatibility issues

### 2.6.4.2 Payment Cancellation Scenarios

Payment process has four main cancel scenarios as listed below:

One of the following message values is passed in cancel result posts (using parameter s-t-1-30\_cancel-reason).

Reason	Message Value	Description
Error	cancel-system-error	The payment process has failed due to error in the payment system or payment acquirer system.
Error	cancel-inv-payment-params	The payment process has failed due to invalid payment parameters from merchant, which has led to situation that could not be fulfilled, such as an attempt to make recurring bank payment (recurring payments are supported by payment cards only). Failure to enter required parameters or if they don't meet basic validity, (such as lengths etc.) <b>do not</b> lead to this situation, but to a blank page.
Error	cancel-external-system-error	The payment has failed due to external system giving invalid message authentication code.
Buyer Canceled	cancel-paym-rej-not-enrolled	Attempt to pay with non 3d secure enrolled card, exceeding the maximum limit for that card type set by the acquirer agreement of the merchant. (Example: Customer is trying to buy 30€ payment with business Visa that does not support 3ds, but the merchant has set a 20 € limit for non 3d enrolled cards in VISA acquirer agreement.)
Buyer Canceled	cancel-too-many-sms-passwords	User tried to enter wrong SMS password too many times.
Buyer Canceled	cancel-too-many-input-retries	Page has been reloaded for too many times. Browsers have been instructed not to reload payment web pages, so in this scenario, the payment web assumed that the request is not from the browser or browser is reloading page infinitely.
Buyer Canceled	cancel-user-canceled	Buyer canceled the payment process.
Rejected	cancel-save-rej-not-enrolled	Attempt to save a non 3d secure enrolled card, when this is not supported by acquirer agreement for this type of card.
Rejected	cancel-ext-address-mismatch	External system has a different address than given one.
Rejected	cancel-bank_axess_error	Payment rejected because of a BankAxess error code has been returned. (Example: J1: Bank does not support BankAxess).
Rejected	cancel-payment-rejected	Payment is rejected by payment acquirer due to restrictions placed on payment method or lack of funds in the corresponding account.
Expired	cancel-payment-expired	The payment process has expired due to timeout or usage of browser navigation buttons.

#### 2.6.4.3 Payment Cancel Result Form Example

```
<form action="http://127.0.0.1:8081/test-shop/cancel" method="post">
<input type="hidden" readonly="" name="i-f-1-11_interface-version" value="2">
<input type="hidden" readonly="" name="s-f-1-10_software-version"
value="1.0.1467">
<input type="hidden" readonly="" name="s-f-1-36_order-number"
value="1325141018121">
<input type="hidden" readonly="" name="s-t-1-30_cancel-reason" value="cancel-
payment-expired">
<input type="hidden" readonly="" name="s-t-256-256_signature-one"
value="46D30C64DF91453F2B026222DDFDB78425B1FDFC7636F355D881674DCABBF95EDE2100A959
71AB823C9B52CFADB595895C8818664B9E4BA2C2F958B61C19EB283DCB4CC7EF0C8D91B93B0A5D3E5
D95B1C10FF6F5D37DC134B3E215EEE6974DFF7AD7010C24C731BBC3863BDBC3B57C4A104D5DEB4639
8A834AC1073624D3075A">
<input type="hidden" readonly="" name="s-t-256-256_signature-two"
value="5B498C3BAB60351A03CF5DF90AEE441F85E3F64EC6E091207A7FC9C023341F8F8D2D18D390
08516F54FBC7DC78DA65D323AD463F74E82081D5676762C83B903E9499FC8758806D5061A2D2A5423
D585AE8FE6914C5AD442F2CA9951264748E039D7B5C8C41DAAEB5504F0275FB074EC9E128F5EA90DA
946404AF1F77D70594CE">
<input class="backward-button" type="submit" name="s-t-1-40_shop-order__phase"
value="Takaisin tilaussivulle">
</div>
</form>
```

#### 2.6.4.4 Payment Cancel Result Post Response

On successful processing of the post shop system will respond with HTTP status 200 OK. Any other response code indicates availability problem in the shop system.

## 3 Implementation

### 3.1 Exchanging Keys

Merchants need to generate a 1024 bit long RSA private – public key pair and configure the public key on Nordea Connect Merchant Portal. The key pair can be generated with Nordea Connect Key Generator available at <https://www.nordeaconnect.com/#for-developers> or any key pair generator of own choice.

The public key has to be configured in Nordea Connect Merchant Portal under eCommerce -> Merchant Settings, please see Nordea Connect Merchant Portal User Guide for instructions. The Nordea Connect Public Key is also available under the eCommerce -> Merchant Settings tab.

### 3.2 Testing

The Merchant will receive their test credentials in an email when they are setup in Nordea Connect Test Environment, it is recommended for Merchants to test their integration in Nordea Connect Test Environment before going to production.

Nordea Connect Test Environment is available in the following URLs:

Test Merchant Portal: <https://test.nordeaconnect.com/merchant-portal>

Payment Node: <https://test.nordeaconnect.com/pw/payment>

Note that test environment is located behind a firewall, and access requires whitelisting of any IP addresses testing is to be done from. IP whitelisting is not required for production environment.

### 3.3 Production

Production environment URLs are:

Payment Node 1: <https://pay1.nordeaconnect.com/pw/payment>

Payment Node 2: <https://pay2.nordeaconnect.com/pw/payment>



## 4 Customer Support

Customer can contact Nordea Connect for support through following channels:

### 4.1 Sweden

Email: [support@nordeconnect.com](mailto:support@nordeconnect.com)

Phone: +46 (0)772 280 888

Service Hours:

Monday – Friday: 07:00 – 20:00

Saturday: 08:00 – 17:00

Sunday: 11:00 – 17:00

### 4.2 Finland

Email: [support@nordeconnect.com](mailto:support@nordeconnect.com)

Phone: +358 (0)100 5010

Service Hours:

Monday – Friday: 08:00 – 21:00

Saturday: 09:00 – 18:00

Sunday: 12:00 – 18:00

## 5 Appendix

### 5.1 Payment Initialization Appendix

#### 5.1.1.1 Payment Initialization Form Shopping Basket Extension Parameters

1-50 basket items (indexes 0-49) are supported and they viewed to user as reminder of what the order contains.

Even though these parameters are not mandatory as set, if they are filled, then they have to be filled for all items included in the delivery.

Basket items have to be filled with index numbers starting from 0 and have no gaps it between them.

Shopping basket is mandatory for all Invoice Payment methods.

If you have one parameter set for an item you must have all the other parameters set for that item as well, except only one of **Item Unit Cost** and **Item Unit Gross Cost** must be filled. Both must not be filled.

Example:

If you have item 3, you must fill all fields of item 3, except you have to fill in only **l-t-1-20\_bi-unit-cost-3** OR **l-t-1-20\_bi-unit-gross-cost-3**, but not both.

s-t-1-30_bi-name-<N>	String with length of 1-30 characters.	Yes	Red Apple	Item Name	Item name of the Nth basket item.  NOTE: Only alphanumeric characters, space and dash should be used in basket item names.
l-t-1-20_bi-unit-cost-<N>	64 bit signed integer value formatted as a string with 1-20 numeric characters.  Must be filled if unit gross cost is not filled. <b>Must not be filled if it is.</b>	Yes	100	Item Unit Cost	Unit cost with two decimal precision but without discount and tax. Example value corresponds to 1 EUR.  NOTE: usage of unit cost instead of unit gross cost can create rounding errors, when refunding individual items.  If you for example have gross cost of 89.00 EUR, there is no corresponding gross cost with discount 0% and GST 24%. 71.77 EUR and 24% GST is 88.99 EUR, but 71.78 EUR lead to gross cost of 89.01 EUR.  Thus if consumer buys 2 items with gross cost of 89.00 and returns only one he will be returned 88.99 EUR. (If he returns both then the entire row will be refunded and no problem exists.)  The solution to this problem is either to use unit gross cost, or calculate unit gross cost in the first place from unit costs, and not the other way around, because if done this way, there will be rounding errors, since EURO and currencies in general are finitely dividable.
l-t-1-20_bi-unit-gross-cost-<N>	64 bit signed integer value formatted as a string with 1-20 numeric characters.  Must be filled if unit cost is not filled. <b>Must not be filled if it is.</b>	yes	124	Item Unit Gross Cost	Unit cost with two decimal precision, with discount and tax. Example value corresponds to 1 EUR, 24% vat and 0% discount.
i-t-1-11_bi-unit-count-<N>	Integer value formatted as string with 1-11 numeric characters.	Yes	1	Item Unit Count	Number of units in the item.

i-t-1-20_bi-gross-amount-<N>	64 bit signed integer value formatted as a string with 1-20 numeric characters.	Yes	100	Item Gross Amount	Item gross amount including tax and discount with two decimal precision. Example value corresponds to 1 EUR.
i-t-1-20_bi-net-amount-<N>	64 bit signed integer value formatted as a string with 1-20 numeric characters.	Yes	100	Item Net Amount	Item net amount calculated from unit cost times unit count with two decimal precision. Example value corresponds to 1 EUR.
i-t-1-4_bi-vat-percentage-<N>	Integer formatted as string with 0,1-4 numeric characters	Yes	2250	Item VAT Percentage	Item value added tax percentage with two decimal precision. Example value corresponds to 22,5%. Can be empty if multiple VAT percentages are used in order.  Currently cannot be an empty string or missing.
i-t-1-4_bi-discount-percentage-<N>	Integer formatted as string with 0,1-4 numeric characters	Yes	550	Item Discount Percentage	Item discount percentage tax with two decimal precision. Example value corresponds to 5,5%. Currently, cannot be an empty string or missing
s-t-1-2048_bi-image-url-<N>	String with length of 1-2048 characters.	Yes	http://www.testshop.com/product_image.png	Item Image URL	Item image URL, currently used in AfterPay payment method. Image can be seen on the invoice and next to installments in AfterPay portal. The merchant can provide a working url for a square or rectangled image. Size constraints: 100-1280px

#### 5.1.1.2 Channel payments

On top of the basket item parameters, channel payments are enabled by using below parameters. All of them must have values to enable channel payments or NULL to disable channel payments. If channel payment is used, merchant agreement needs to be set to allow this type of payment and sub-merchants need to exist.

**Note:** Channel payments feature is only for special cases and use of it must be agreed with Nordea Connect in advance. This parameter must not and cannot be used otherwise.

s-t-1-36_bi-merchant-agreement-code-<N>	String with length of 1-36 characters.	Yes, (if all are set to NULL). Otherwise, No.	NULL	Item Merchant Code	Channel-mode merchant code. Contains child merchant number for report transactions
s-t-1-36_bi-product-number-<N>	String with length of 1-36 characters.	Yes, (if all are set to NULL). Otherwise, No.	NULL	Item Product Number	Channel-mode product number. Contains product number for particular merchant
i-t-1-4_bi-commission-percentage-<N>	Integer formatted as string with 0,1-4 numeric characters.	Yes, (if all are set to NULL). Otherwise, No.	NULL	Item Commission percentage	Channel-mode commission percentage.
i-t-1-20_bi-fee-amount-<N>	64 bit signed integer value formatted as a string with 1-20 numeric characters.	Yes, (if all are set to NULL). Otherwise, No.	NULL	Item channel fee	Channel-mode fee amount.

#### 5.1.1.3 Anonymous payment

Any merchant wishing to use anonymous payment must communicate this to Nordea Connect before doing so. There is however no technical blocker in Nordea Connect service, so any merchant is technically able to use it (as merchant is able to fill in bogus names).

It is possible to issue anonymous payment by setting both first name and last name to [?]. Email may be set to [?] as well, but may also be present, in which case it is saved by the system. External id may not be given. Anonymous payments cannot be recurring.

## 5.2 Payment Method Enumeration

Payment method code (s-t-1-30_payment-method-code / s-f-1-30_payment-method-code )	Payment method type (s-t-1-30_payment-method-type)	Type of payment	Notes
visa	VISA	CARD	
master-card	MASTER_CARD	CARD	
s-pankki-verkkomaksu	S_PANKKI_VERKKOMAKSU	BANK	S-Pankki interface doesn't support refunds.
aktia-maksu	AKTIA_MAKSU	BANK	
op-pohjola-verkkomaksu	OP_POHJOLA_VERKKOMAKSU	BANK	
nordea-e-payment	NORDEA_E_PAYMENT	BANK	
sampo-web-payment	SAMPO_WEB_PAYMENT	BANK	Danske Bank Finland.
handelsbanken-e-payment	HANDELSBANKEN_E_PAYMENT	BANK	
alandsbanken-e-payment	ALANDSBANKEN_E_PAYMENT	BANK	Ålandsbanken interface doesn't support refunds.
amex	AMEX	CARD	
diners	DINERS	CARD	
pop-pankin-verkkomaksu	POP_PANKIN_VERKKOMAKSU	BANK	
saastopankin-verkkomaksu	SAASTOPANKIN_VERKKOMAKSU	BANK	
visa-electron	VISA_ELECTRON	CARD	Bin table must be installed, in order to use this payment method.
master-card-maestro	MASTER_CARD_MAESTRO	CARD	bin table must be installed, in order to use this payment method.
swish	SWISH	ELECTRONIC	
siirto	SIIRTO	ELECTRONIC	
afterpay-invoice	AFTERPAY_INVOICE	INVOICE PAYMENT	AfterPay Requires Shopping Cart Basket Items to be added in the Payment Initiation call.