Saferpay – Secure Card Data

Specification

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1 INTRODUCTION

This document describes the technical features and the interface of the "Saferpay Card Data" service.

1.1 SUMMARY

For security reasons the merchant system or application should never process, transmit or store credit or debit card numbers. Otherwise a merchant might be engaged to complete a security certification like Visa's "Account Information Security" (AIS) or Master-Card's "Site Data Proctection" (SDP) or the newly setup "Payment Card Industry Data Security Standard" (PCI) program.

The "Saferpay Card Data" service helps you to fullfill the security requirements: The service will store sensitive card information at the secure saferpay database. The merchant application itself will never touch the card data any more. However the merchant application could execute further payments by using a card reference identifier instead of the original credit or debit card number.

Any other information like credit card expiration dates or cardholder names mustn't be secured and could be stored at the merchant application or database.

1.2 PROCESS

At first a new card number must be registered at the "Saferpay Card Data" service. Normally this will be done during the common registration process of a new customer on the merchant site.

1. The merchant application creates a card registration form and shows it to the cardholder. Also, the merchant application has created a new "card reference number" and stores this value at its new customer record.

2. The cardholder fills in his card details and submits the form data. Instead of sending the card details back to the merchant application, they will be transferred directly to the "Saferpay Card Data" service.

3. The "Saferpay Card Data" service registers the new card details at the secure saferpay database by the given "card reference number".

4. Immediatelly the customer browser is forwarded to the merchant web application to proceed with its process, e.g. showing a "successful registration" page.

Next, depending on the merchant application or use case, a payment could be executed:

1. Instead of performing the authorization by using the original card number, the merchant application uses it's own "card reference number".

2. Saferpay receives the "card reference number" and gets the original card number out of its own secure database.

3. The authorization will be executed with the original card number and all other received payment attributes.

4. The merchant application receives the result of the online authorization.

1.3   REQUIREMENTS

The "Saferpay Application Component" is required for the use of this API.

The "Saferpay Card Data" service must be activated for your saferpay account.

The "Saferpay Card Data" service cooperates with the following saferpay products:

- Saferpay Card Authorization Interface
- Saferpay Merchant Plug-In
- Saferpay Backoffice

1.4   COMBINATION WITH OTHER SAFERPAY SERVICES

Saferpay Secure Card Data could be combined with other Saferpay services and products.

1.4.1   SAFERPAY VIRTUAL TERMINAL WINDOW (PAYMENT PAGE)

Please look at chapter "5 Saferpay Virtual Terminal Window" for a detailed description.

1.4.2   SAFERPAY FILE IMPORT

The Saferpay File Import service is used to upload batch files for payment processing. The answer file could be downloaded after the successful processing.

It is very easy to use the Saferpay File Import together with Saferpay Secure Card Data: Instead of inserting the original credit card number into the "CardNumber" field, insert the prefix string "CARDREFID:" followed by the assigned card reference number.

More details could be found at the Saferpay File Import manual.

2   CARD REGISTRATION

The registration of card details – especially the card number – is an interactive part between cardholder, merchant and saferpay.

The registration of a new card number is secured by digital signatures and SSL connections.

2.1   OVERVIEW

The following diagram illustrates the registration process of a new card number at the "Saferpay Card Data".
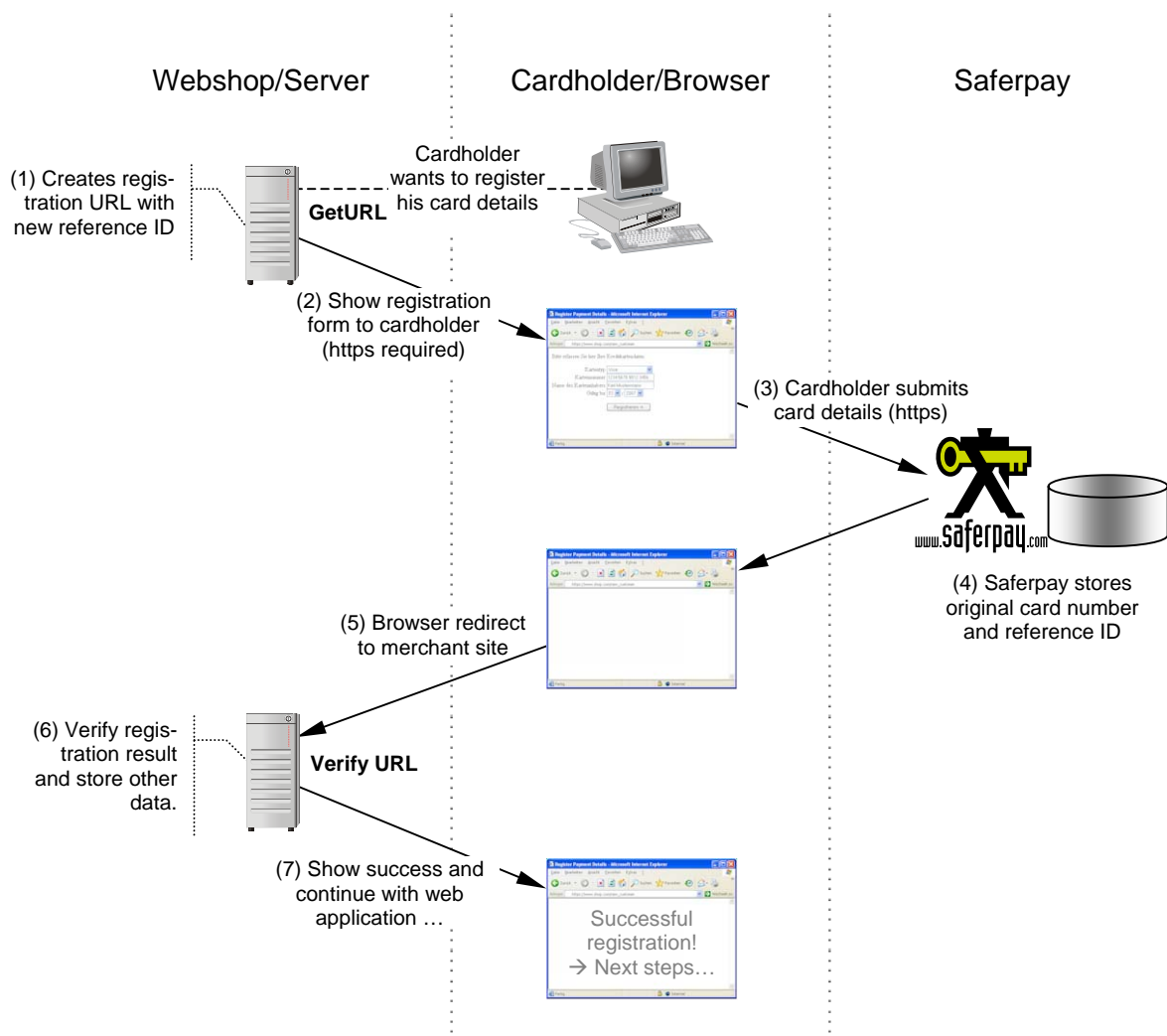
Let's say a new customer wants to order some goods. First he has to register himself (address, email, telephone, etc.) at the merchant shop site. Also, he should register his preferred payment method and card details.

1. The merchant application creates a new card reference identifier and a corresponding registration URL. It stores the card reference id in it's own database.

2. Now the merchant application sends a card registration form to the customer.

3. The cardholder enters his card details and submits the form data. Instead of sending the card details back to the merchant application, they will be transferred directly to the "Saferpay Card Data" service.

4. The "Saferpay Card Data" service registers the new card details together with the "card reference number" at the secure saferpay database.

5. Immediatelly after the registration the customer browser is redirected to the merchant web application.

6. The merchant application retrieves the successful card registration and additional card data – except the original card number. It will check the registration result and it's digital signature.

7. If everything is okay the merchant application could proceed with it's own process. Maybe it will show a "registration successful" information to the customer.

2.2   CARD REFERENCE IDENTIFIER

Each time a card number should be registered the merchant application has to create a new card reference identifier. **It is not possible to register a card number once again with an already existing card reference identifier.** If a card number must be updated the merchant application has to create a new card reference identifier.

The card reference identifier is stored together with other card details at the saferpay database. The card reference identifier is only available for payments with the saferpay merchant account. Other saferpay merchants cannot use the card reference identifier for payments.

2.3   CREATING THE REGISTRATION URL (STEP 1)

For the registration of a new card number a saferpay registration URL is needed. The URL is made up by the Saferpay Application Component's GetURL() method and must contain the following attributes:

Attribute	Description
Saferpay Account Information	
ACCOUNTID	The saferpay account identifier to use for the registration. The account id is made up by the merchant's customer id (first part) and the saferpay terminal id, e.g. 99867-94913159 = test account id
Redirect Information	
SUCCESSLINK	After a successful registration the customer browser is redirected to this URL.
FAILLINK	If the registration process failed the customer browser is redirected to this URL.
Registration Reference	
CARDREFID	A <u>unique</u> "Card Reference Identifier" defined by the merchant application (up to 40 characters). It will be used for later payments to reference the original card number.*
Optional Settings	
LIFETIME	Optional: This numeric value defines how many days the card reference will exist in the database after registration or the last usage (default value = 1.000 days).
LANGID	Optional: Specifies the language of the error description. Must contain one of the following 2-letter language codes (default "en"):

Attribute	Description
	"de", "en", "fr" or "it"
REDIRECTMESSAGE	Optional: This plain text message will be shown to the customer during the browser redirect. If the automatical redirect fails the customer could click this message to follow the SUCCESSLINK or FAILLINK.

*Note: The CARDREFID attribute must contain a unique value. If it's value is already registered at the saferpay database the registration will be declined.

2.4   SHOW CARD REGISTRATION FORM (STEP 2)

After creating the registration URL the web server shows the customer a card registration form. The form must contain the following form attributes and form fields:

Form Field	Description
Form method	We use the "POST" method for sending the form field values.
Form action	Must contain the created registration URL.
Submit	A submit button is needed to send the form data.
Credit Card Details	
sfpCardNumber	The credit card number
sfpCardExpiryMonth	Optional: The month of the card expiry date. Numeric values from 1 to 12 ("01" is also possible)
sfpCardExpiryYear	Optional: The year of the card expiry date. Numeric values from 0 to 99 or the 4-digit year, e.g. 2005
Direct Debit Details (German ELV only)	
sfpCardBLZ	8 digit value of bank identification code ("Bankleitzahl")
sfpCardKonto	Up to 10 digits bank account number ("Kontonummer")

The "Saferpay Secure Card Data" service will check the card expiration date if posted. If the credit card is expired the user will be forwarded to the FAILLINK.

Here is a simple example of a credit card registration form:

```
<form method="POST" action="https://www.saferpay.com/vt/pay...">
  Card Number   <input type="text" name="sfpCardNumber">
  Card Validity <input type="text" name="sfpCardExpiryMonth"> /
                <input type="text" name="sfpCardExpiryYear">
                <input type="submit" value="Register">
</form>
```

Alternatively input values could be made up by option fields like the expiry month:

```
<select name="sfpCardExpiryMonth" size="1">
  <option value="1">01</option>  <option value="2">02</option>
  <option value="3">03</option>  <option value="4">04</option>
  <option value="5">05</option>  <option value="6">06</option>
  <option value="7">07</option>  <option value="8">08</option>
  <option value="9">09</option>  <option value="10">10</option>
  <option value="11">11</option> <option value="12">12</option>
</select>
```

2.5   CARDHOLDER SUMBITS CARD DETAILS (STEP 3)

Saferpay receives the registration information and validates it's contents. If a field, it's value or something else is wrong or missed the customer browser will be redirected to the FAILLINK.

2.6   SAFERPAY STORES CARD DETAILS (STEP 4)

Saferpay stores the card details together with the card reference identifier in it's database. If the card reference identifier already exists the customer browser will be redirected to the FAILLINK.

Otherwise saferpay redirects the customer browser to the SUCCESSLINK and adds a saferpay "RegistrationResponse" message.

If the https register request contained additional fields (e.g. session id) they will be sent to the merchant application by using the GET method.

2.7   BROWSER REDIRECT (STEP 5)

The customer browser will be immediately redirected to the SUCCESSLINK or FAILLINK. If the browser does not support the redirect feature a Java Script will be executed. If this should fail too a short description is shown as a link to the customer (value of registration form field "sfpRedirectMessage").

2.8   RECEIVE THE REGISTRATION RESPONSE (STEP 6)

2.8.1   REGISTRATION SUCCESSFUL

After a successful registration the merchant application receives DATA and SIGNATURE values at the SUCCESSLINK. To avoid manipulation the merchant application should verify the contents of DATA and SIGNATURE by using the VerifyPayConfirm() method of the "Saferpay Application Component".

DATA (or the corresponding saferpay response object) contains the following attributes:

Attribute	Description
Message	
MSGTYPE	Must contain the fixed value "InsertCardResponse"
Result	
RESULT	The result code of the registration process, must be always "0"
DESCRIPTION	Optional: A short message about the processed operation: "Request was processed successfully"
Saferpay Account Information	
ACCOUNTID	The saferpay account identifier of the registration request.
Registration Reference	
CARDREFID	The assigned card reference identifier.
Card Information	
CARDMASK	Masked credit or debit card number, for example: XXXX XXXX XXXX 1234
CARDBRAND	Name of the card brand, e.g. "Visa" or "MasterCard"
CARDTYPE	Card type identifier, numeric value: 19265 = American Express 19268 = Diners Club 19269 = MasterCard 19274 = J.C.B. 19286 = Visa 99072 = Saferpay Test Card

Attribute	Description
LIFETIME	The life time of the card in days as numeric value.
EXPIRYMONTH	Optional: The expiry month of the card, format MM Only available if submitted by form-post.
EXPIRYYEAR	Optional: The expiry year of the card, format YY Only available if submitted by form-post.
CCCOUNTRY	Optional: 2-letter country code of the card issuing bank. Only available if the "Saferpay Risk Management" service is active and the country could be identified. Otherwise this attribute will be empty or not assigned. For example: "DE" = Germany, "CH" = Switzerland, "AT" = Austria

2.8.2 REGISTRATION FAILED

If the registration process has failed, the FAILLINK url of the merchant site will be opened. Normally, the merchant application receives DATA and SIGNATURE values. If so the merchant application should verify the contents of DATA and SIGNATURE by using the VerifyPayConfirm() method of the "Saferpay Application Component".

For some error reasons the custumer will be forwarded to FAILLINK without DATA and SIGNATURE parameters. So, DATA and SIGNATURE should be handled by the merchant application as optional values.

The reason for the erroneous registration is stored at the RESULT attribute of the FAILLINK. DATA (or the corresponding saferpay response object) contains the following attributes:

Attribute	Description
Message	
MSGTYPE	Must contain the fixed value "InsertCardResponse"
Result	
RESULT	The result code of the erroneous registration process: 7000 Internal error, check DESCRIPTION text for futher details 7001 Request could not be processed completely 7002 Unknown card 7003 Request malformed or wrong field content 7004 Card reference not found (only for authorization) 7005 Missing attribute in request 7006 Card reference already exists
DESCRIPTION	Optional: A short description of the error reason
Optional Values (see SUCCESSLINK for details)	
ACCOUNTID	Optional: The saferpay account identifier.
CARDREFID	Optional: The assigned card reference identifier.
CARDMASK	Optional: Masked credit or debit card number
CARDBRAND	Optional: Name of the card brand
CARDTYPE	Optional: Card type identifier
EXPIRYMONTH	Optional: The expiry month of the card
EXPIRYYEAR	Optional: The expiry year of the card
LIFETIME	Optional: The life time of the card in days
CCCOUNTRY	Optional: 2-letter country code of the card issuing bank

2.8.3 OTHER PARAMETERS

Saferpay collects any other parameter which has been sent together with the registration URL (GET and POST). The collected parameters are appended to the SUCCESSLINK or FAILLINK. The merchant application will receive the parameters as GET values.

3   AUTHENTICATION AND PAYMENT

Once a card number is registered at the "Saferpay Card Data" service an authentication or payment transaction could be executed by using the "card reference identifier".

3.1   SAFERPAY CARD AUTHORIZATION INTERFACE

Instead of the PAN or TRACK2 attribute the CARDREFID could be used for online authorizations. The expiration date of the credit card must be set anyway.

3.2   SAFERPAY MERCHANT PLUG-IN

Instead of the PAN attribute the CARDREFID could be used for "Verify Enrollment Request".

3.3   SAFERPAY BACKOFFICE

The new service "Saferpay Secure Card Data" will be shown at the saferpay backoffice website. You can use the saferpay backoffice to check existing card reference identifiers.

4   IMPLEMENTATION EXAMPLES

4.1   ASP & VISUAL BASIC

4.1.1   CREATING THE REGISTRATION URL (STEP 1)

Here we are creating a registration url for card reference id "ABC123":

```
Set mf = CreateObject("Saferpay.MessageFactory")
Set req = mf.CreatePayInit

Call req.SetAttribute("ACCOUNTID",   "99867-94913159")
Call req.SetAttribute("CARDREFID",   "ABC123")
Call req.SetAttribute("SUCCESSLINK", "http://www.shop.de/ok")
Call req.SetAttribute("FAILLINK",    "http://www.shop.de/failed")

RegisterURL = req.GetURL()
```

Sample of generated registration url:

```
https://www.saferpay.com/vt/Pay.asp?DATA=%3cIDP%20MSGTYPE%3d%22PayInit
%22%20KEYID%3d%220%2d99867%2d1e3ce6efcd5445df9b6a60b57454b961%22%20TOK
EN%3d%225bb1e10f44d440a98cee25ff872fe67d%22%20ACCOUNTID%3d%2299867%2d9
4913159%22%20SUCCESSLINK%3d%22http%3a%2f%2fwww%2eshop%2ede%2freg%2fsuc
cess%2easp%22%20FAILLINK%3d%22http%3a%2f%2fwww%2eshop%2ede%2freg%2fFai
led%2easp%22%20CARDREFID%3d%2220050420%5f153245%22%20LIFETIME%3d%22200
0%22%2f%3e&SIGNATURE=1cb4a3088d7556f6f34bcc7cd2c8f1e4fed17b4d1e220793e
15d4b5e957aa97c08c183af18b503def9b7ae9d8a88b1ca4963a48b2dc64892467f66d
28825a21f
```

4.1.2   SHOW CARD REGISTRATION FORM (STEP 2)

Let's show the customer the registration form:

```
<html><body>
 <form method="POST" action="<% = RegisterURL %>">
   Name Card Holder
      <input type="text" name="CardHolder" size="20"><br>
   Card Number
      <input type="text" name="sfpCardNumber" size="16"><br>
   Card Valid
      <input type="text" name="sfpCardExpiryMonth" size="2"> /
      <input type="text" name="sfpCardExpiryYear"  size="2"><br>

      <input type="submit" name="submit" value="Register">
      <input type="hidden" name="sessionid" value="AghJ325gJ1za86==">
 </form>
</body></html>
```

In this example there are two additional fields: The text input field named "CardHolder" and a hidden field named "sessionid". Both fields and their contents will be transmitted to saferpay and from there they will be mirrored back to the merchant web server.

Now the customer clicks the [Register] button to proceed with the registration. The browser post the form parameters to the action url and saferpay performs the registration process. Immediately after that saferpay redirects the browser to the SUCCESSLINK or FAILLINK.

4.1.3   RECEIVE REGISTRATION RESPONSE (STEP 6)

The merchant application receives the SUCCESSLINK parameters. First it has to check DATA and its digital signature than it will show the returned values:

```
<html><body>
<%
DATA      = Request("DATA")
SIGNATURE = Request("SIGNATURE")

On Error Resume Next
Set mf = CreateObject("Saferpay.MessageFactory")
Set res = mf.VerifyPayConfirm(DATA, SIGNATURE)
If Err <> 0 then
%>
  Registration failed, possible manipulation!
<%
Else ' successful registration
%>
 Saferpay AccountID   <% = res.getAttribute("ACCOUNTID")  %> <br>
 Saferpay Card RefID  <% = res.getAttribute("CARDREFID")  %> <br>
 Saferpay Card Mask   <% = res.getAttribute("CARDMASK")   %> <br>
 Saferpay Card Expiry <% = res.getAttribute("EXPIRYMONTH")%>/
                      <% = res.getAttribute("EXPIRYYEAR") %> <br>
 Saferpay Card Brand  <% = res.getAttribute("CARDBRAND")  %> <br>
 Saferpay Card Type   <% = res.getAttribute("CARDTYPE")   %> <br>
 Saferpay Card Country<% = res.getAttribute("CCCOUNTRY")  %> <br>
 Name Card Holder     <% = Request("CardHolder")          %>
<%
End If
%>
</body></html>
```

The additional parameter "CardHolder" comes from the Request object and not from the saferpay res object.

4.1.4   AUTHORIZATION

The payment is executed with the card reference identifier instead of the original card number:

```
Set mf = CreateObject("Saferpay.MessageFactory")
Set req = mf.CreateRequest("Authorization")

Call req.SetAttribute("CARDREFID", "ABC123")
Call req.SetAttribute("EXP", "1206")      ' card expiry MMYY
Call req.SetAttribute("AMOUNT", "1295")   ' 1.00 EUR
Call req.SetAttribute("CURRENCY", "EUR")
Call req.SetAttribute("ACCOUNTID", "99867-94913159")

Set res = req.Execute

RESULT = res.GetAttribute("RESULT")

if RESULT = "0" then
    ID = res.GetAttribute("ID")
    ... Successful authorization
else
    ... Error handling
end if
```

4.2   HOSTING

4.2.1   CREATING THE REGISTRATION URL (STEP 1)

Here we are creating a registration url for the card reference id "TEST14092005092556" by sending an http(s) request to the hosting gateway:

```
https://www.saferpay.com/hosting/CreatePayInit.asp?ACCOUNTID=99867-
94913159&CARDREFID=TEST14092005092556&SUCCESSLINK=http%3a%2f%2fwww%2es
hop%2ede%2freg%2fsuccess%2easp&FAILLINK=http%3a%2f%2fwww%2eshop%2ede%2
freg%2ffailed%2easp&LIFETIME=1000
```

Please note SUCCESSLINK and FAILLINK must be url-encoded to support additional parameters.

The generated registration url will be returned immediately as plain text:

```
https://www.saferpay.com/vt/Pay.asp?DATA=%3cIDP%20MSGTYPE%3d%22PayInit
%22%20KEYID%3d%220%2d99867%2d1e3ce6efcd5445df9b6a60b57454b961%22%20TOK
EN%3d%225bb1e10f44d440a98cee25ff872fe67d%22%20ACCOUNTID%3d%2299867%2d9
4913159%22%20SUCCESSLINK%3d%22http%3a%2f%2fwww%2eshop%2ede%2freg%2fsuc
cess%2easp%22%20FAILLINK%3d%22http%3a%2f%2fwww%2eshop%2ede%2freg%2ffai
led%2easp%22%20CARDREFID%3d%22TEST14092005092556%22%20LIFETIME%3d%2220
00%22%2f%3e&SIGNATURE=1cb4a3088d7556f6f34bcc7cd2c8f1e4fed17b4d1e220793
e15d4b5e957aa97c08c183af18b503def9b7ae9d8a88b1ca4963a48b2dc64892467f66
d28825a21f
```

4.2.2   SHOW CARD REGISTRATION FORM (STEP 2)

Let's show the customer the registration form. The form action must contain the registration url:

```
<html><body>
 <form method="POST"
      action="https://www.saferpay.com/vt/Pay.asp?DATA=%3cIDP%20...">
   Name Card Holder
     <input type="text" name="CardHolder" size="20"><br>
   Card Number
     <input type="text" name="sfpCardNumber" size="16"><br>
   Card Valid
     <input type="text" name="sfpCardExpiryMonth" size="2"> /
     <input type="text" name="sfpCardExpiryYear"  size="2"><br>

     <input type="submit" name="submit" value="Register">
     <input type="hidden" name="sessionid" value="AghJ325gJ1za86==">
 </form>
</body></html>
```

In this example there are two additional fields: The text input field named "CardHolder" and a hidden field named "sessionid". Both fields and their contents will be transmitted to saferpay and from there they will be mirrored back to the merchant web server.

Now the customer clicks the [Register] button to proceed with the registration. The browser post the form parameters to the action url and saferpay performs the registration process. Immediatelly after that saferpay redirects the browser to the SUCCESSLINK or FAILLINK.

4.2.3   RECEIVE REGISTRATION RESPONSE (STEP 6)

The merchant application receives the SUCCESSLINK parameters. First it has to check DATA and its digital signature than it will show the returned values.

In this example at first we make a remote function call to the hosting gateway to verify the contents of DATA and SIGNATURE. The status of the verification is returned as OK or ERROR plain text.

Let's assume the successlink's url parameters DATA and SIGNATURE have the following contents:

```
DATA=%3CIDP+MSGTYPE%3D%22InsertCardResponse%22+KEYID%3D%221%2D0%22+RES
ULT%3D%220%22+DESCRIPTION%3D%22Request+was+processed+successfully%22+C
ARDREFID%3D%22TEST14092005092556%22+EXPIRYMONTH%3D%229%22+EXPIRYYEAR%3
D%2205%22+CARDBRAND%3D%22Saferpay+Test+Card%22+CARDTYPE%3D%2299072%22+
CARDMASK%3D%22xxxx+xxxx+xxxx+0004%22+CCCOUNTRY%3D%22XX%22+LIFETIME%3D%
221%22+ACCOUNTID%3D%2299867%2D94913159%22%2F%3E&SIGNATURE=a1963b0fd00c
aaac8d574087546fe8495bb56e1eb10c8de375c560f65941dd11d706cd4912f858755c
fec9a37cda74602d8a55c707e781a268fd7e5aa4f05450
```

DATA and SIGNATURE must be sent as http(s) request to the hosting gateway:

```
http://support.saferpay.de/scripts/VerifyPayConfirm.asp?DATA=%3CIDP+MS
GTYPE%3D%22InsertCardResponse%22+KEYID%3D%221%2D0%22+RESULT%3D%220%22+
DESCRIPTION%3D%22Request+was+processed+successfully%22+CARDREFID%3D%22
TEST14092005092556%22+EXPIRYMONTH%3D%229%22+EXPIRYYEAR%3D%2205%22+CARD
BRAND%3D%22Visa%22+CARDTYPE%3D%2299072%22+CARDMASK%3D%22xxxx+xxxx+xxxx
+0004%22+CCCOUNTRY%3D%22XX%22+LIFETIME%3D%221%22+ACCOUNTID%3D%2299867%
2D94913159%22%2F%3E&SIGNATURE=a1963b0fd00caaac8d574087546fe8495bb56e1e
b10c8de375c560f65941dd11d706cd4912f858755cfec9a37cda74602d8a55c707e781
a268fd7e5aa4f05450
```

The following response is returned as plain text (ID and TOKEN left empty):

```
OK:ID=&TOKEN=
```

The OK tells us the signature has been successfully verified against the contents of DATA. Otherwise an error message would show a possible manipulation, e.g. "ERROR: Possible manipulation".

DATA contains the XML response message and attributes:

```
DATA = <IDP MSGTYPE="InsertCardRequest" KEYID="1-0" RESULT="0"
DESCRIPTION="Request was processed successfully"
CARDREFID="TEST14092005092556" EXPIRYMONTH="9" EXPIRYYEAR="05"
CARDBRAND="Visa" CARDTYPE="99072"
```

4.2.4 AUTHORIZATION

The payment is executed with the card reference identifier instead of the original card number:

```
Set mf = CreateObject("Saferpay.MessageFactory")
Set req = mf.CreateRequest("Authorization")

Call req.SetAttribute("CARDREFID", "ABC123")
Call req.SetAttribute("EXP", "1206")      ' card expiry MMYY
Call req.SetAttribute("AMOUNT", "1295")  ' 1.00 EUR
Call req.SetAttribute("CURRENCY", "EUR")
Call req.SetAttribute("ACCOUNTID", "99867-94913159")

Set res = req.Execute
RESULT = res.GetAttribute("RESULT")

if RESULT = "0" then
    ID = res.GetAttribute("ID")
    ... Successful authorization
else
    ... Error handling
end if
```

5   SAFERPAY VIRTUAL TERMINAL WINDOW

The Saferpay VT (Virtual Terminal) is a browser based payment window and is typically used as a popup window. Usually the VT is used for online authorizations. Now it is possible to use the VT together with the Saferpay Secure Card Data service as well. This combination allows to authorize a payment and register a credit card number.

5.1   COMBINATION WITH SECURE CARD DATA

The following rules are important for combining the Saferpay VT window (online payments) and the Saferpay Secure Card Data service for (automatically) registration of credit card numbers:

- Saferpay controls whether a card registration should be performed or not by sending the CARDREFID parameter. If the registration identifier CARDREFID is set within the PayInit URL a registration will be performed if possible.

- A card number will be registered only after a successful credit card authorization. Otherwise the payment will be declined and no registration would take place.

- If CARDREFID contains a wrong or empty value the payment will be declined.

- If CARDREFID is set Saferpay will check if the registration identifier does not exist in the database. If it already exists Saferpay declines the payment process.

- If CARDREFID contains "new" then Saferpay assigns automatically a new registration identifier. Saferpay takes the highest used numeric value of the registration identifier and increments it by one. If the credit card number has already been registered the existing registration identifier will be returned.

- Before an automatic registration could be performed at least one registration must be executed successfully. The first registration id must be a numeric value. It will be incremented by 1 for each futher automatic registration.

- The PayInit request could contain the optional attribute LIFETIME (life time of an registration identifier in days, default value is 1000).

- After an successful authorization the response will be sent to the SUCCESSLINK. The response contains the optional registration attributes SCDRESULT, SCDDESCRIPTION, CARDREFID, CARDMASK, CARDBRAND, CARDTYPE, LIFETIME, EXPIRYMONTH, EXPIRYYEAR and CCCOUNTRY. The registration attributes are contained only if the payment method was a credit card. Other payment methods are not supported for registration.

- If the registration process was successfully SCDRESULT contains "0". If the registration process has failed SCDRESULT contains the error code and SCDDESCRIPTION the error description.

5.2   EXAMPLE (ASP)

5.2.1   CREATE PAYMENT URL FOR AUTOMATICAL REGISTRATION

An online payment of 12,95 EUR should be executed. If a credit card is used it's number should be registered automatically:

```
Set mf = CreateObject("Saferpay.MessageFactory")
Set req = mf.CreatePayInit

Call req.SetAttribute("ACCOUNTID",   "99867-94913159")
Call req.SetAttribute("AMOUNT",      "1295") ' 12.95 EUR
Call req.SetAttribute("CURRENCY",    "EUR")
Call req.SetAttribute("DESCRIPTION", "Online Purchase")
Call req.SetAttribute("CARDREFID",   "new") ' set id automatically
Call req.SetAttribute("SUCCESSLINK", "http://www.shop.de/ok")
Call req.SetAttribute("BACKLINK",    "http://www.shop.de/basket")
Call req.SetAttribute("FAILLINK",    "http://www.shop.de/failed")
Call req.SetAttribute("ALLOWCOLLECT","no")
Call req.SetAttribute("DELIVERY",    "no")

PayInitURL = req.GetURL()
```

The created payment URL looks like:

```
https://www.saferpay.com/vt/Pay.asp?DATA=%3cIDP+MSGTYPE%3d%22PayInit%2
2+KEYID%3d%220-99867-ff505dc5990349818be0f14cf090ad91%22+TOKEN%3d%22d7
133a63824c4e4aaedb734bd3a17a82%22+ALLOWCOLLECT%3d%22no%22+DELIVERY%3d%
22no%22+EXPIRATION%3d%2220051119+11%3a03%3a58%22+ACCOUNTID%3d%2299867-
94913159%22+AMOUNT%3d%221295%22+CURRENCY%3d%22EUR%22+SUCCESSLINK%3d%22
http%3a%2f%2fwww.shop.de%2fok%22+BACKLINK%3d%22http%3a%2f%2fwww.shop.d
e%2fbasket%22+FAILLINK%3d%22http%3a%2f%2fwww.shop.de%2ffailed%22+CARDR
EFID%3d%22new%22+DESCRIPTION%3d%22Online+Purchase%22+CCCVC%3d%22yes%22
+%2f%3e&SIGNATURE=4840e1aae8aa60d1a7845184442df520461570b7f9e2084f76e2
971450f87f511335f7cfb86c652e6b45de87cf8857d1aa3cdf8d8b64bfdd63faff0563
629eb3
```

5.2.2   RECEIVE REGISTRATION RESPONSE (SUCCESSLINK)

The merchant application receives the SUCCESSLINK parameters DATA and SIGNATURE:

```
DATA=%3CIDP+MSGTYPE%3D%22PayConfirm%22+KEYID%3D%221%2D0%22+ID%3D%2247S
tCtbhpv6GUAA0MvY8A612Mv9A%22+TOKEN%3D%22%28unused%29%22+VTVERIFY%3D%22
%28obsolete%29%22+AMOUNT%3D%221295%22+CURRENCY%3D%22EUR%22+PROVIDERID%
3D%2290%22+PROVIDERNAME%3D%22Saferpay+Test+Card%22+ACCOUNTID%3D%229986
7%2D94913159%22+ECI%3D%222%22+EXPIRYMONTH%3D%2209%22+EXPIRYYEAR%3D%2205
%22+CARDREFID%3D%221002342342%22+CARDBRAND%3D%22Saferpay+Test+Card%22+
CARDTYPE%3D%2299072%22+CARDMASK%3D%22xxxx+xxxx+xxxx+0004%22+CCCOUNTRY%
3D%22XX%22+LIFETIME%3D%221%22+SCDRESULT%3D%220%22+%2F%3E&SIGNATURE=859
f2e1bd2d796059730f63b516c06eaf20f29a78c5eca8a7a7889a7156266579864c79b9
cffc2ef4b90814aa9b7ad88a70de8f73286dc2577ee34325279f59e
```

First it has to check DATA and its digital signature than it will show the returned values:

```
<html><body><%
DATA      = Request("DATA")
SIGNATURE = Request("SIGNATURE")

On Error Resume Next
Set mf = CreateObject("Saferpay.MessageFactory")
Set res = mf.VerifyPayConfirm(DATA, SIGNATURE)
If Err = 0 then ' successful authorization
  If res.getAttribute("SCDRESULT") = "0" then ' success registration
  %>
  Saferpay AccountID  <% = res.getAttribute("ACCOUNTID")  %> <br>
  Saferpay Card RefID  <% = res.getAttribute("CARDREFID")  %> <br>
  Saferpay Card Mask   <% = res.getAttribute("CARDMASK")   %> <br>
  Saferpay Card Expiry <% = res.getAttribute("EXPIRYMONTH")%>/
                       <% = res.getAttribute("EXPIRYYEAR") %> <br>
  Saferpay Card Brand  <% = res.getAttribute("CARDBRAND")  %> <br>
  Saferpay Card Type   <% = res.getAttribute("CARDTYPE")   %> <br>
  Saferpay Card Country<% = res.getAttribute("CCCOUNTRY")  %> <br>
  <%
  End If
End If
%></body></html>
```

6   APPENDIX

6.1   VERSION HISTORY

Version	Date	Description
0.1	07.01.2005	Document created.
0.2	01.02.2005	Messages and examples added
0.3	09.02.2005	CCOUNTRY added to response message
0.5	20.04.2005	Details and implementation changes added.
0.6	22.04.2005	FAILLINK without DATA and SIGNATURE possible ACCOUNTID and DESCRIPTION are optional attributes
0.7	06.06.2005	Error correction in samples
1.0.0	22.06.2005	Error correction in samples (CreatePayInit)
1.0.1	28.06.2005	Error correction in samples
1.0.2	14.09.2005	New hosting samples
1.0.3	30.10.2005	SCD in combination with VT
1.0.4	01.12.2005	Additional rules for SCD/VT combination
1.0.5	16.01.2006	Update of rules for SCD/VT combination
1.0.6	16.08.2006	Additional parameters for German ELV
1.0.7	02.07.2007	SCD in combination with Saferpay File Import