



*Secure Instant Deposit (SID)
Implementation Guide*

Copyright and Trademark

© 2010 Setcom (Pty) Ltd. All Rights Reserved. Setcom and the Setcom logo are registered trademarks of Setcom (Pty) Ltd. Designated trademarks and brands are the property of their respective owners.

Notice of Liability

The information in this pack is distributed in an “as is” basis. All information provided in this document is provided with good will. The authors and publishers of this manual are not responsible for loss, or purported loss due to any contents of this publication.

Summary of Revisions

Version	Date	Changed By	Changes Made
1.0.0	30 Nov 2008	H van Staden - Setcom	Original document created.
1.0.1	30 Dec 2008	D Liu - Setcom	Added SID Logo and Style Guide.
1.0.2	09 Jan 2009	D Liu - Setcom	Added Order Query Web Services.
1.0.3	12 Jan 2009	D Liu - Setcom	Added Table of Content Fixed and added SID_STATUS in redirect variables. Added receiptno and tnxid fields in XML response for Order Query Web Services.
1.0.4	17 Jan 2009	D Liu - Setcom	Updated Payment Flow chart. Changed seller to merchant and buyer to customer.
1.0.5	23 Feb 2009	D Liu - Setcom	Addition of HTTP notification.
1.0.6	08 May 2009	D Liu - Setcom	Addition of SID Consistent Field sample code.
1.0.7	25 Jun 2009	D Liu - Setcom	Correction on Cold Fusion sample code. Addition of Demo bank login details.
1.0.8	15 Jul 2009	D Liu - Setcom	Correction on Cold Fusion and PHP sample codes. Added consistent field concatenation order.
1.0.9	10 Aug 2009	D Liu - Setcom	Addition of Appendix D & E. Limitation of reference field to 12 char
1.1.0	21 Aug 2009	D Liu - Setcom	Change to VB.NET & C# sample code.
1.1.1	25 Aug 2009	D Liu - Setcom	Added C# .Net sample code for Order Query Web Service.
1.1.2	25 Jan 2010	D Liu & K Rozendo - Setcom	Edited Receiving the Transaction Result section and removed sample codes and place into a zip file.
1.1.3	16 Feb 2010	D Liu - Setcom	Changed the description in the style guide.
1.1.4	15 Mar 2010	K. Rozendo - Setcom	Addition of SID_DEFAULT_REFERENCE field.
1.1.5	03 May 2010	D Liu & K Rozendo - Setcom	Added clarity to the Order Query Web Service descriptions.
2.0.0	08 Jun 2010	K. Rozendo - Setcom	New URL for SIDv2
2.0.1	21 Jun 2010	D Liu - Setcom	Added Implementation Error Code

Table of Content

SUMMARY OF REVISIONS.....	3
TABLE OF CONTENT.....	4
OVERVIEW	5
PAYMENT FLOW.....	5
SUBMITTING THE TRANSACTION USING SID BUY BUTTON	6
SID LOGO AND STYLE GUIDE.....	7
BUY BUTTON CONSISTENT FIELD.....	8
RECEIVING THE TRANSACTION RESULT	9
METHOD 1: REDIRECT NOTIFICATION.....	9
METHOD 2: HTTP NOTIFICATION	10
METHOD 3: ORDER QUERY WEB SERVICE.....	11
NOTES IN REGARDS TO SECURITY	15
APPENDIX A: CURRENCY CODES.....	16
APPENDIX B: COUNTRY CODES	16
APPENDIX C: DEMO BANK LOGIN DETAILS.....	16
APPENDIX D: SYSTEM REQUIREMENT FOR THE CLIENT (SHOPPER)	16
APPENDIX E: TIMEOUT & FAILURE SCENARIOS AND SOLUTIONS	17
APPENDIX F: SID CONSISTENT FIELD SAMPLE CODE	18
APPENDIX G: ORDER QUERY WEB SERVICE SAMPLE CODE	18
APPENDIX H: IMPLEMENTATION ERROR CODE	18
ADDITIONAL INFORMATION.....	20

Overview

Secure Instant Deposit (SID) makes it possible for customers without credit cards to pay merchants using their Internet Banking.

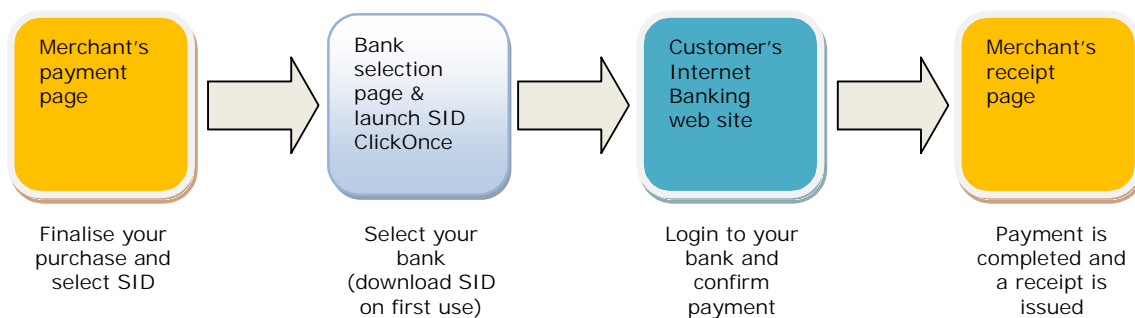
The merchant implementation explained in this guide is very simple and requires a developer that can:

1. Build a simple HTML form, also known as the buy button.
2. Receive and parse URL variables back from SID.

Payment Flow

The steps below outline the payment flow when the customer uses SID:

1. The customer populates the shopping cart on the merchant's website and clicks on the Checkout button.
2. On the Checkout Page, the customer is presented with SID as a payment option which the customer selects.
3. The customer is directed to the SID Bank Selection Page where the customer needs to select the bank he/she banks with.
4. The customer clicks on the Pay Button and SID is initialised.
5. If this is the first time the customer is using SID, a small ClickOnce application will be installed.
6. SID will open as a navigation bar at top of the customer's window.
7. SID will open a browser window and prompt the customer to navigate to his Internet banking homepage.
8. Once on the bank's home page, the customer will be prompted by SID to login to the Internet banking site.
9. Once logged in, SID will navigate the customer to the bank's once-off/single payment page and populate the merchant's bank account details (beneficiary).
10. The customer clicks on pay and SID prompts the customer to confirm the transactions.
11. After the payment is successfully processed the bank will present the receipt page, SID prompts the customer to print the receipt and log out of Internet banking.
12. The customer is navigated back to the merchant's website. SID will include the payment details in the redirect message to the merchant.



Submitting the Transaction using SID Buy Button

The SID buy button is a simple HTML buy button. It needs to contain the following fields:

Field Name	Required	Description
SID_MERCHANT	Yes	Set this field to the Merchant Identifier as issued to you by SID when your account was created.
SID_CURRENCY	Yes	Contains the currency code of this transaction and determines what banks are available for payment to the customer. See Appendix A: Currency Codes for a list of available and supported currency codes. The merchant requires a bank account in the currency specified here.
SID_COUNTRY	Yes	Contains the country code of this transaction and determines what banks are available for payment to the customer. See Appendix B: Country Codes for a list of available and supported country codes. The merchant requires a bank account in the country specified here.
SID_REFERENCE	Yes	Set this field to the merchant pass-through reference. This field should ideally be unique per transaction. This field will appear on all reports and will be passed back to the merchant when the customer is redirected back to the merchant's website. Use this field to reconcile to your system. Only Alphanumeric values and – (dash) and / (single slash) can be used. Limited to 12 characters.
SID_DEFAULT_REFERENCE	No	Set this field to allow a default reference to be entered into the customer's internet banking when the bank requires adding a beneficiary. This default reference will be used if the customer makes a manual payment without using SID. We suggest that the customer's account or phone number be used. Making use of this field will help you in tracking and solving queries more effectively. Only Alphanumeric values and – (dash) and / (single slash) can be used. Limited to 12 characters.
SID_AMOUNT	Yes	Set this field to the amount of the transaction in normal decimal format, excluding any currency symbols, e.g. 129.99 or 9200.00
SID_CONSISTENT	Yes	The merchant can use this field to prevent tampering of the buy button values. Please see the section entitled SID Buy Button Consistent Field below on guidelines on generating this field.
SID_CUSTOM_01	No	Can contain any custom data the merchant wants to pass through with the transaction. This field will appear on all reports and will be passed back to the merchant on the redirect.
SID_CUSTOM_02	No	Can contain any custom data the merchant wants to pass through with the transaction. This field will appear on all reports and will be passed back to the merchant on the redirect.
SID_CUSTOM_03	No	Can contain any custom data the merchant wants to pass through with the transaction. This field will appear on all reports and will be passed back to the merchant on the redirect.
SID_CUSTOM_04	No	Can contain any custom data the merchant wants to pass through with the transaction. This field will appear on all reports and will be passed back to the merchant on the redirect.

SID_CUSTOM_05	No	Can contain any custom data the merchant wants to pass through with the transaction. This field will appear on all reports and will be passed back to the merchant on the redirect.
---------------	----	---

All fields with the exception of the SID_CONSISTENT and SID_CUSTOM field are required. We strongly recommend all merchants to implement the SID_CONSISTENT field to increase security and stop tampering of the buy button values.

This is code for a sample buy button:

```
<FORM METHOD="POST" ACTION="https://www.sidpayment.com/paySID/">
  <INPUT TYPE="HIDDEN" NAME="SID_MERCHANT" VALUE="PHONEWAREHOUSE" />
  <INPUT TYPE="HIDDEN" NAME="SID_CURRENCY" VALUE="ZAR" />
  <INPUT TYPE="HIDDEN" NAME="SID_COUNTRY" VALUE="ZA" />
  <INPUT TYPE="HIDDEN" NAME="SID_REFERENCE" VALUE="REE-384-DJHFG777" />
  <INPUT TYPE="HIDDEN" NAME="SID_AMOUNT" VALUE="129.00" />
  <INPUT TYPE="HIDDEN" NAME="SID_CONSISTENT" VALUE="DFIHFRUGTOSTERG" />
  <INPUT TYPE="submit" NAME="PaySID" VALUE="Pay using your Internet Banking" />
</FORM>
```

SID Logo and Style Guide

The SID Payment Method should be presented on the merchant's checkout/payment page. The following graphic illustrates how SID is to be displayed on the page where the user can select SID as their payment method.

Example 1: Displayed Horizontally



Instant Bank Payment

Pay Now

Example 2: Displayed Vertically



Instant Bank Payment


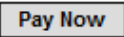
Pay Now

Example 3: Displayed in a select box

Payment Options

Pay by Internet Banking - SID ▾	Pay Now
Pay by Internet Banking - SID	
Pay by Credit Card	
Pay by Direct Deposit	

The merchant will need to display the following elements when the page loads:

Elements	Description	Style
	The SID logo (Product branding)	Format: GIF Size: 160 x 65 pixels Alt Text: Secure Instant Deposit Hyperlink: The logo should be hyperlinked to http://www.sidpayment.com
Description	The description for SID Options: Instant Bank Payment Pay using your Internet Banking Pay by Internet Banking	Font: arial, verdana, helvetica, sans-serif Must be in <i>Italic</i>
	Pay Now button or graphic button	Merchants can use their own pay button or graphic that is consistent with their existing web site. However the pay button/graphic must be positioned beneath or to the right of the SID logo and description.

Merchants may wish to display more information about SID on other pages within their web site. In this case the following information should be used:

Full Description
<p>What is SID?</p> <p>SID is an instant bank payment that allows you to make payment directly to {merchant name here} using your existing Internet banking facility.</p> <p>If you have never used SID before, you will be asked to run the application. You will then be directed to your chosen bank site where you can login to make the payment. The merchant's banking details will be pre-populated on the payments page. Once you have completed the payment and received the receipt, your order will be fulfilled straight away without having to fax the confirmation to the merchant.</p> <p>A credit card is not required!</p>

Buy Button Consistent Field

By using the SID consistent field, the merchant can build a checksum to stop tampering of the buy button variables.

SID and the merchant needs to agree on a secret key. To generate the consistent value, all the values in the buy button need to be concatenated together and combined with the secret key. The result is then hashed using the SHA512 algorithm. This value is included in the buy button and sent to SID in the request.

Once SID receives the request, SID will follow the same procedure and use the values in the buy button and the agreed secret key to generate their own version of the consistent field. We will compare our version of the consistent field with that received in the buy button and only allow the transaction to continue should the two values match.

The order in which the fields need to be concatenated are:

1. SID_MERCHANT
2. SID_CURRENCY
3. SID_COUNTRY
4. SID_REFERENCE
5. SID_AMOUNT
6. SID_DEFAULT_REFERENCE (if applicable)
7. SID_CUSTOM_01 (if applicable)
8. SID_CUSTOM_02 (if applicable)
9. SID_CUSTOM_03 (if applicable)
10. SID_CUSTOM_04 (if applicable)
11. SID_CUSTOM_05 (if applicable)
12. SID_SECRET_KEY

Always remember to hash the values in the same case as that you sent them to SID, as this will make a difference to the outcome. SID uses UTF-8 encoding on the SID_CONSISTENT field. The SID_CONSISTENT field will always be an uppercase value.

Sample codes can be downloaded from the Getting Started page on our website.

Receiving the Transaction Result

All transaction should be considered as CANCELLED / DECLINED until such time that you receive the COMPLETED notification

The following 3 methods are provided for receiving both Completed and Cancelled transaction results from SID. We strongly recommend that all 3 methods be implemented:

1. Redirect Notification
2. HTTP Notification
3. Order Query Web Service

Please note: All the return variables in the URL are URL encoded. Please decode the variables before generating the consistent key.

Method 1: Redirect Notification

Once the payment has been completed or cancelled, the customer will be redirected back to the merchant's website. A receipt/confirmation page should be displayed that is consistent with their existing web site's look and feel.

This service will run on the SID Receipt page and will run only **once** and does not attempt to retry the redirect, if it fails initially.

The URL where the customer is redirected to is locked in the SID system for security reasons and can only be changed by authorised SID staff. To change this, please get the account holder to send the request in writing to support@sidpayment.com.

The following variables are sent to the merchant when the customer is redirected back to the merchant's website.

Field Name	Description
SID_STATUS	The result of the transaction. Possible returned values are: COMPLETED CANCELLED CREATED READY See STATUS CODE EXPLAINED under XML Explained section for detailed explanation.
SID_MERCHANT	Contains the merchant code as assigned to the merchant by SID when the account was created.
SID_COUNTRY	The country code of this transaction. See Appendix B: Country Codes for a list of available and supported country codes.
SID_CURRENCY	The currency code of this transaction. See Appendix A: Currency Codes for a list of available and supported currency codes.
SID_REFERENCE	Contains the reference number as passed to SID in the buy button.
SID_AMOUNT	The amount of the transaction as captured on the Internet banking receipt page.
SID_BANK	The bank name of the bank that the customer paid from.
SID_DATE	The date and time when the transaction was completed. All dates are given in the local date and time of the merchant.
SID_RECEIPTNO	The bank receipt number as issued and appearing on the internet banking receipt page.
SID_TNXID	Contains the unique SID System Transaction ID for this transaction.
SID_CUSTOM_01	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_01 field. We recommend passing the customer's email address.
SID_CUSTOM_02	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_02 field.
SID_CUSTOM_03	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_03 field.
SID_CUSTOM_04	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_04 field.
SID_CUSTOM_05	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_05 field.
SID_CONSISTENT	Security field that should be used by the merchant to determine the authenticity of this message. To generate the consistent field concatenate all the above fields in the same order with the secret key and SHA512 hash the data (Note this is not the same as the Buy Button Consistent Field).

Method 2: HTTP Notification

Once the payment has been completed or cancelled, SID can post a HTTP notification to a pre-defined URL on the merchant's server.

This service will try to run for a maximum of 3 times with a waiting period between each retry.

We strongly recommend that the HTTP Notification be implemented in addition to the Return Notification. This will reduce the number of client queries when the Redirect Notification fails. Another nicety would be to confirm that the status and transactional information is identical between the HTTP Notification and the Return Notification for extra security.

The URL where the notification is posted to is locked in the SID system for security reasons and can only be changed by authorised SID staff. To change this, please get the account holder to send the request in writing to support@sidpayment.com.

The following variables are sent to the merchant as a Post in the HTTP Notification.

Field Name	Description
SID_STATUS	The result of the transaction. Possible returned values are: COMPLETED CANCELLED CREATED READY See STATUS CODE EXPLAINED under XML Explained section for detailed explanation.
SID_MERCHANT	Contains the merchant code as assigned to the merchant by SID when the account was created.
SID_COUNTRY	The country code of this transaction. See Appendix B: Country Codes for a list of available and supported country codes.
SID_CURRENCY	The currency code of this transaction. See Appendix A: Currency Codes for a list of available and supported currency codes.
SID_REFERENCE	Contains the reference number as passed to SID in the buy button.
SID_AMOUNT	The amount of the transaction as captured on the Internet banking receipt page.
SID_BANK	The bank name of the bank that the customer paid from.
SID_DATE	The date and time when the transaction was completed. All dates are given in the local date and time of the merchant.
SID_RECEIPTNO	The bank receipt number as issued and appearing on the internet banking receipt page.
SID_TNXID	Contains the unique SID System Transaction ID for this transaction.
SID_CUSTOM_01	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_01 field. We recommend passing the customer's email address.
SID_CUSTOM_02	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_02 field.
SID_CUSTOM_03	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_03 field.
SID_CUSTOM_04	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_04 field.
SID_CUSTOM_05	Contains any custom data the merchant sent through in the buy button in the SID_CUSTOM_05 field.
SID_CONSISTENT	Security field that should be used by the merchant to determine the authenticity of this message. To generate the consistent field concatenate all the above fields in the same order with the secret key and SHA512 hash the data (Note this is not the same as the Buy Button Consistent Field).

Method 3: Order Query Web Service

The Order Query Web Service allows you to query the status of any transaction during or after the transaction. This is useful to keep the merchant's system in sync with SID.

Implementation can be done in 2 ways, you can check for individual transaction's status and information or you can query numerous transactions in a single call.

We strongly recommend that the Order Query Web Service be implemented in addition to the Return Notification. This will reduce the number of client queries when the Redirect Notification fails. Another nicety would be to confirm that the status and transactional information is identical between the Order Query Web Service and the Return Notification for extra security.

To retrieve the information, the merchant would have to connect to the SID Web Service interface. The Web Service and method details are attached below.

Web Service WSDL File: <http://www.setcom.com/sidserver/sidapi.cfc?wsdl>
Method Name: sid_order_query

The method accepts one XML string as argument, named "sid_order_query_request". The method returns a XML string as output.

Please refer to the XML examples below for sample request and response strings.

The XSD (XML Schema Definition) files for the request and response data can be found at the below URLs.

https://www.setcom.com/sidserver/includes/schemas/sid_order_query_request.xsd

https://www.setcom.com/sidserver/includes/schemas/sid_order_query_response.xsd

Sample request string:

```
<?xml version="1.0" encoding="UTF-8"?>
<sid_order_query_request>
  <merchant>
    <code>PHONE</code>
    <uname>sid@phonewarehouse.co.za</uname>
    <pwd>112233</pwd>
  </merchant>
  <orders>
    <transaction>
      <country>ZA</country>
      <currency>ZAR</currency>
      <amount>10.00</amount>
      <reference>SID001001</reference>
    </transaction>
    <transaction>
      <country>ZA</country>
      <currency>ZAR</currency>
      <amount>20.00</amount>
      <reference>SID001002</reference>
    </transaction>
  </orders>
</sid_order_query_request>
```

Sample ERROR response string:

```
<?xml version="1.0" encoding="UTF-8"?>
<sid_order_query_response>
  <data>
    <outcome>
      <error_code>10</error_code>
      <error_desc>The merchant code is invalid</error_desc>
      <error_solution>Please ensure that the XML element
/sid_order_query_request/merchant/code contains a valid value.</error_solution>
    </outcome>
  </data>

  <signature>mAZ8sYyovXLO TgNct0Fd4/O68AIz32Sii5wpX9o3iHQzZ49tk5MCSDDWI3o1i01dn
VeKRu/60x6krPnH5d2ubqTG9QD22gpLySWtyPW3NHkWyDjhXfg858ltmFGIw/XLJllmmvVwpr1bH
9PVQqAqi7NzDvoE0tBePPp/hmfq4r0=</signature>
</sid_order_query_response>
```

Sample SUCCESSFUL response string:

```
<?xml version="1.0" encoding="UTF-8"?>
<sid_order_query_response>
  <data>
    <outcome>
```

```

        <error_code>0</error_code>
        <error_desc/>
        <error_solution/>
    </outcome>
    <merchant>
        <code>PHONE</code>
    </merchant>
    <orders>
        <transaction>
            <status>CANCELLED</status>
            <country>
                <code>ZA</code>
                <name>South Africa</name>
            </country>
            <currency>
                <code>ZAR</code>
                <name>South African Rand</name>
                <symbol>R</symbol>
            </currency>
            <bank>
                <name>ABSA</name>
            </bank>
            <amount>10.00</amount>
            <reference>SID001001</reference>
            <receiptno>ABSA001033</receiptno>
            <txid >SID9001003</txid >
            <date_created>2008/01/04 12:45:57 PM</date_created>
            <date_ready>2008/01/04 12:45:50 PM</date_ready>
            <date_completed>2008/01/04 12:49:10 PM</date_completed>
        </transaction>
        <transaction>
            <status>CREATED</status>
            <country>
                <code>ZA</code>
                <name>South Africa</name>
            </country>
            <currency>
                <code>ZAR</code>
                <name>South African Rand</name>
                <symbol>R</symbol>
            </currency>
            <bank>
                <name>First National Bank</name>
            </bank>
            <amount>20.00</amount>
            <reference>SID001002</reference>
            <receiptno>FNB001002</receiptno>
            <txid >SID9001005</txid >
            <date_created>2008/01/04 12:45:57 PM</date_created>
            <date_ready>2008/01/04 12:45:50 PM</date_ready>
            <date_completed>2008/01/04 12:49:10 PM</date_completed>
        </transaction>
    </orders>
</data>

<signature>mAZ8sYyovXLOTgNct0Fd4/O68AIZ32Sii5wpX9o3iHQzZ49tk5MCSDDWI3o1i01dn
VeKRu/60x6krPnH5d2ubqTG9QD22gpLySWtyPW3NHkWyYdjhXfg858ltmFGlw/XLJllmmvVwpr1bH
9PVQqAqi7NzDvoE0tBePPP/hmfq4r0=</signature>
</sid_order_query_response>

```

XML Explained:**sid_order_query_request:**

The sid_order_query_request XML string contains the merchant information (and login details). The string also needs to contain the order information of the transaction (or transactions) being queried. The merchant would have to supply the same data as used in the buy button when the transaction was initially created.

sid_order_query_response:

The sid_order_query_response string contains the request outcome in the /sid_order_query_response/data/outcome/error_code XML element. Only responses where the error code is equal to 0 (zero) can be seen as successful responses. For any other code the /sid_order_query_response/data/outcome/error_desc and /sid_order_query_response/data/outcome/error_solution XML elements must be consulted and the request treated as failed.

The response XML on a successful request will contain the following:

- Error details and solution
- Merchant identifier
- Transaction status
- Country
- Currency
- Bank information
- Transaction amount
- Merchant's reference
- Bank receipt number/reference
- SID transaction number
- transaction ready date
- transaction created date
- transaction completed date

STATUS CODE EXPLAINED:

Status Codes	Description
COMPLETED	Orders with a status of COMPLETED was successfully paid and the merchant will receive the funds in their bank account within 2 to 3 business days
CANCELLED	The order was cancelled. The merchant should NOT credit the customer.
CREATED	The customer is still busy making the payment. The payment process has started; SID ClickOnce is starting up and verifying itself. The browser window has not yet opened.
READY	The customer is still busy making the payment. The payment process has started, SID ClickOnce has launched and verified itself, and the browser window has opened.

Any other status code should be treated as CANCELLED and the customer should NOT be credited.

TRANSACTION DATE EXPLAINED:

The response XML contains 3 date fields for every order. This will help the merchant track when the transaction steps occurred.

Field Name	Description
date_ready	This is the date and time when the customer clicked on the Pay Now button on the SID Payment Page and SID ClickOnce started to launch and verify itself.
date_created	This is the date and time when the SID ClickOnce application opened the new browser window. SID ClickOnce has completed verifying itself for the first time at this stage.

date_completed	<p>This is the date and time when the transaction was either "completed" for successful transactions or "cancelled" for cancelled transactions.</p> <p>For example:</p> <ol style="list-style-type: none"> 1. If the customer clicked on the "Log out" button in his internet banking we will send a cancel request to our database. This field will thus contain the date and time we received the cancellation request. 2. If the customer turns off the power to his PC, this field will be blank. We never received any request confirming or cancelling this transaction. 3. If the customer completes the transaction, SID ClickOnce will update the SID database with the completed transaction details. This field will contain the date and time SID database received the request to complete the transaction.
----------------	---

When using the Order Query Web Service, SID will return transactions based on a reference number.

There may be multiple cancelled transactions before a successful transaction is completed. An example would be, if the user selects an incorrect bank, or their connection drops which will result in multiple transactions not in a COMPLETED status. Therefore you may receive multiple XML nodes returned for the same reference number.

In order to overcome this, one should firstly look for a COMPLETED transaction and then use this as the status of the transaction; however if there is not a node with a COMPLETED status, a CANCELLED status should then be looked for.

A safe guard that must be put in place is to validate the date of the transaction to make sure that the same reference number has not been reused by transactions on multiple days.

Notes in regards to Security

1. In regard to the Return and Notification URLs, it is crucial to also validate the consistent key (which we pass back in the SID_CONSISTENT field), as it provides security to the notifications by using a SHA512 hash and your private key.
2. There cannot be a COMPLETED transaction without the receipt number being populated (passed back as SID_RECEIPTNO).
3. All information passed back that was initially sent through to us, such as the merchant code, country and currency should be validated to make sure nothing has changed.
4. Between the different notifications methods, validate that the status field (passed back as SID_STATUS) are all the same.

Appendix A: Currency Codes

Currency	Short Code	Accepted Countries
South African Rand	ZAR	South Africa

Appendix B: Country Codes

Country	Short Code	Accepted Currencies
South African	ZA	South African Rand

Appendix C: Demo Bank Login Details

	Account Number	Online PIN	Account Holder Name
1	1111	1111	Mr John Deer
2	2222	2222	Mr James Samuels
3	3333	3333	Mr Derick Marks
4	4444	4444	Mr Rudy Smith
5	5555	5555	Mr Joe Jones
6	6666	6666	Mr Rodney Buffalo
7	7777	7777	Miss Oprah Jones
8	8888	8888	Mr Dave Black
9	9999	9999	Mr Smiley Green
10	AAAA	AAAA	Mr Freddy Faffoor
11	BBBB	BBBB	Mr Ursh Hask
12	CCCC	CCCC	Mr Shane Victory
13	DDDD	DDDD	Mrs Veronica Sanders
14	EEEE	EEEE	Mr Shaun Flame
15	FFFF	FFFF	Mr Albert Flock
16	GGGG	GGGG	Mr Chris Times
17	HHHH	HHHH	Mr Porky Lama
18	JJJJ	JJJJ	Miss Reddy Green
19	KKKK	KKKK	Mrs Susan Orfer
20	LLLL	LLLL	Miss Jane Greely

Appendix D: System Requirement for the Client (Shopper)

- Operating System: Microsoft Windows (XP SP2+, Vista)
- Web Browser: Internet Explorer 6.0 and above (Javascript must be enabled)
- Other Requirements: Microsoft .NET Framework 2.0 or above

Appendix E: Timeout & Failure Scenarios and Solutions

	Possible Failures	Solution
1	Notification timed out between SID's server and the Merchant's server	<p>Payment was successful but SID failed to notify the merchant.</p> <p>Causes that result in these timeouts are:</p> <ol style="list-style-type: none"> 1. SID's internet connection or bandwidth dropped 2. The merchant's internet connection or bandwidth dropped 3. SID's website or server encounters problems 4. The merchant's website or server encounters problems <p><u>Solution:</u> Merchant should query SID using the Order Query Web Service for any timeout transactions. We recommend every 15 minutes for 4 times.</p>
2	Browser/Client timed out <u>without</u> the funds being debited from the client's bank account	<p>The client's payment was unsuccessful.</p> <p>Causes that result in these timeouts are:</p> <ol style="list-style-type: none"> 1. Client's internet connection or bandwidth dropped 2. Client's internet bandwidth is too slow to complete the transaction 3. The bank's internet connection or bandwidth dropped 4. The bank's website or server encounters problems <p><u>Solution:</u> The client should retry the payment.</p>
3	Browser/Client timed out <u>with</u> the funds being debited from the client's bank account	<p>The client's payment was successfully debited from their bank account.</p> <p>Causes that result in these timeouts are:</p> <ol style="list-style-type: none"> 1. Client's internet connection or bandwidth dropped after the payment was submitted to the bank 2. The bank's website or server encountered a problem generating the receipt 3. SID's website or server encounters problems <p><u>Solution:</u> The merchant will receive extra payment in their bank account which is not listed in the SID report. The merchant should credit the client and deliver on the order.</p>

4	Client manually completes a payment using a previous reference number (without using SID)	<p>We've noticed that ABSA bank stores the beneficiary details and reference number used in once-off payments. If the client manually logs into their internet banking and make a second payment to the same merchant, after first using SID. The first reference number is used in the second payment. The result is that you will receive 2 payments with the same reference number.</p> <p><u>Solution:</u> We recommend the merchant search for duplicated transactions from the same client and advise the client of the corrective action.</p>
---	---	--

Appendix F: SID Consistent Field Sample Code

PHP, VB.NET, Cold Fusion, C# and ASP Sample Code can be downloaded from our website (www.sidpayment.com).

Appendix G: Order Query Web Service Sample Code

C# Sample Code can be downloaded from our website (www.sidpayment.com).

Appendix H: Implementation Error Code

These could be common errors whilst implementing SID.

Error Code	Cause	Solution
PAYSID0001	SID_MERCHANT is blank or invalid.	Ensure this field has a value and it is correct.
PAYSID0002	SID_COUNTRY is blank or invalid.	Ensure this field has a value and it is correct.
PAYSID0003	SID_CURRENCY is blank or invalid.	Ensure this field has a value and it is correct.
PAYSID0004	SID_AMOUNT is blank or invalid.	Ensure this field has a legitimate value.
PAYSID0005	5 Transaction amount too low.	Confirm seller limits with Setcom support.
PAYSID0006	Transaction amount too high.	Confirm seller limits with Setcom support.
PAYSID0007	SID_REFERENCE is blank	Ensure this field has a value and is a maximum of 12 characters. If a reference is greater than 12 characters, the transaction will poll indefinitely after selecting a bank.
PAYSID0008	Merchant has no terminals loaded.	Confirm that your merchant has terminals loaded with Setcom support.
PAYSID0009	SID_CONSISTENT does not match.	Ensure that your consistent key is being built in the correct order and is uppercased once it is SHA512 hashed. Please ensure that the plus symbol ('+') is not used in any of the SID fields, as this will cause HTML Encoding hash not match the hash we generate, therefore failing validation.

PAYSID0014	.NET Framework 2.0 is not detected.	If you have .NET 2.0, please click "Continue", otherwise it must be installed. The SID Payment page provides a link to download .NET 2.0. If you clicked "Continue" and you do not have .NET 2.0 installed, you can simply clear your cookies and you will be presented with the option again.
PAYSID0025	Conversion to number failed on SID_AMOUNT.	Ensure that a decimal is being passed to the SID payment page.

Additional Information

For detailed information on each product offering please contact SID's Sales Department.

Tel:	United Kingdom	+44 (0)20 3051 6320
	United States of America	+1 (408) 850 6530
	South Africa	+27 (83) 913 0000
Fax:	United Kingdom	+44 (20) 7681 3303
	United States of America	+1 408 351 8057
	South Africa	(086) 615 1486
Email	sales@sidpayment.com	
Web	www.sidpayment.com	
Postal	P.O. Box 5803 Rivonia 2128 South Africa	