

DTS-ESB

GPS Online Proxy Service

System Interface Specification

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| --- | --- |
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|  |  |
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# Introduction

## Background

To improve the current credit card payment architecture to provide more flexibility, a new system called Generic Payment Service (GPS) is created. GPS is designed to make credit card payment related systems and processes independent from the credit card payment processor’s specificities. It has the capability for seamless use of more than one credit card payment processor at a time and it limits the future impact of change of credit card payment processors.

A new service called DTS-ESB GPS Online Proxy Service (GPSTransCC service) is added to existing DTS-ESB platform in order to de-tokenize and forward the requests from GPS to the target payment processor gateway.

## Purpose

This document describes the interface specifications for the new DTS-ESB GPS Online Proxy Service (GPS TransCC Service) that will have GPS as the consumer, DTS and the Processor (Moneris) as the providers.

The new service introduced by the project Avalanche as part of the DTS-ESB platform is as follows:

* DTS-ESB: GPS TransCC Service

This service will be exposed as an XML based Web interface and will leverage the SOAP protocol.

## Audience

The intended audience for this document include the following teams to understand the detailed design for the external interfaces:

* Bell IT
* GPS
* Moneris (Processor)
* DTS

## References

The following are the referenced documents:

|  |  |
| --- | --- |
| GPS\_SRS\_V1.1\_INTERNAL\_Final.doc | System Requirements Specifications |
| eSELECTplus\_XML\_DTD\_Field\_Definition.pdf | Merchant Integration Guide Transaction DTD v.1.1.7 |
| eSELECTplus\_Java\_IG.pdf | Merchant Integration Guide Java API v 1.2.3 |

# Security

The DTS-ESB GPS Online Proxy Service is secured by a process of authentication as described in the sections below.

## Authentication using 2-way SSL

DTS-ESB GPS Online Proxy Web Service is secured by using 2-way ssl certificate based authentication requiring an Entrust Advantage Certificate installed on GPS application servers.

GPS must use 2-way SSL authentication. This requires both GPS and DTS-ESB to have a SSL Certificate. DTS-ESB uses the information contained in the certificate to authenticate and authorize GPS.

### Certificate Requirements

* Certificate Type Required – Entrust Advantage certificate
* GPS to purchase 1 certificate and propagate this to all servers – 1 certificate is required per application per environment (UAT, PROD…)
* Certificate expiry should be set to 4 years.

# Interface Specifications

The specifications are presented in the subsections corresponding to requests to and responses from DTS-ESB. The specifications include the element names, size, field types, repetition, required/optional fields and validation requirements.

## GPS Online Proxy Service

|  |  |
| --- | --- |
| **Service** | Proxy service to process Credit card transactions between GPS and the Processor, with ability to de-tokenize credit card information if necessary |
| **Backend service triggered** | * DTS web service * Moneris XML / HTTPS POST Service |
| **Accessed by** | * GPS |
| **Functionalities** | * Invoke DTS Web Service to de-tokenize credit card token input (if provided) * Invoke Moneris Business Service for the Credit Card Transactions |

### ForwardCCTrans Operation - Request Specifications

#### TransCC Request Structure

#### 

The following table describes the input request:

| XML Element | Description | Type | Max Length | Multiple | Comments |
| --- | --- | --- | --- | --- | --- |
| TransCCRequest | The header of the GPS Request | NA | NA | [1..1] |  |
| HeaderRequest | The request Header | NA | NA | [1..1] |  |
| BSSID | System identification . Examples: VIRGIN, ONEBILL, …) | Alphanumeric | 50 | [1..1] |  |
| BSSTransID | BSS Transaction ID that identifies a transaction from tracabilitity perspective.from end to end. It will be generated from BSS end and must be unique | Alphanumeric | 30 | [1..1] |  |
| ApplicationID | Application (GPS) which is sending the request | String | NA | [1..1] |  |
| ProcessorInfo | The Header Tag for Processor Info | NA | NA | [1..1] |  |
| ProcessorID | Processor to which the request has to be sent. E.g: Moneris, PayPal etc. | String | 30 | [1..1] |  |
| TransType | Transaction Type. Allowed Values are:  PURC. (Purchase)  PAUT (PreAuthorization)  COMP (Completion, Capture)  VOID  RFND (REFUND)  FPST (ForcePost)  INDR (Independent Refund) | Alphanumeric | NA | [1..1] |  |
| ProcessorRequest | The Processor request information which is received as a string. The credit card pan from this is de-tokenized before sending to the Processor | String | NA | [1..1] |  |
| AdditionalParametersRequest | Any other parameters for future use | NA | NA | [0..1] |  |
| Parameter | Parameter Tag | NA | NA | [1..n] |  |
| Name | Name of the parameter | String | 50 | [1..1] |  |
| Value | Value of the Parameter | String | 50 | [1..1] |  |

#### TransCC – Sample Request

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:mes="http://ESB.int.bell.ca/GPS/messages" xmlns:typ="http://ESB.int.bell.ca/GPS/types">

<soapenv:Header/>

<soapenv:Body>

<mes:TransCCRequest>

<mes:HeaderRequest>

<typ:BSSID>Virgin</typ:BSSID>

<typ:BSSTransID>1234567890</typ:BSSTransID>

<typ:ApplicationID>GPS</typ:ApplicationID>

</mes:HeaderRequest>

<mes:ProcessorInfo>

<typ:ProcessorID>Moneris</typ:ProcessorID>

<typ:TransType>PURC</typ:TransType>

<typ:ProcessorRequest><![CDATA[<?xml version="1.0" encoding="UTF-8"?><request>

<store\_id>your\_store\_id</store\_id>

<api\_token>your\_api\_token</api\_token> // MerchantID

<purchase>

<order\_id>unique\_order\_id</order\_id>

<cust\_id>cust\_info\_1</cust\_id>

<amount>1.00</amount>

<pan>8499146650704242</pan>

<expdate>1412</expdate>

<crypt\_type>7</crypt\_type>

<avs\_info>

<avs\_street\_name>Main St</avs\_street\_name>

<avs\_zipcode>M1M1M1</avs\_zipcode></avs\_info>

<cvd\_info>

<cvd\_indicator>1</cvd\_indicator>

<cvd\_value>123</cvd\_value>

</cvd\_info>

</purchase>

</request>]]></typ:ProcessorRequest>

</mes:ProcessorInfo>

<mes:AdditionalParametersRequest>

<!--1 or more repetitions:-->

<typ:Parameter>

<typ:Name>Test</typ:Name>

<typ:Value>1234</typ:Value>

</typ:Parameter>

</mes:AdditionalParametersRequest>

</mes:TransCCRequest>

</soapenv:Body>

</soapenv:Envelope>

### ForwardTransCC Operation - Response Specification

#### TransCC Response Structure

#### 

The following table describes the response structure:

| XML Element | Description | Type | Max Length | Multiple | Comments |
| --- | --- | --- | --- | --- | --- |
| TransCCResponse | The header of the GPS Response | NA | NA | [1..1] |  |
| HeaderResponse | The response Header | NA | NA | [1..1] |  |
| SystemCode | This field describes the state of the response. Valid values currently defined are:   * 0 = Success. Transaction was a success. If the transaction to the Processor returns any response (including errors), ESB will map this as 0. * 1 = Business Error. Business exception is encountered (one or more). For future use. * 2 = System Error. System exception is encountered (one or more). These include any unexpected runtime exceptions. | Integer | NA | [1..1] |  |
| SystemMessageType | This field will be a fixed text message associate to the System Code field. Valid values currently defined are:   * Success (0) * Business Error (1) * System Error (2) | String | NA | [1..1] |  |
| ErrorMessages | Error Messages header | NA | NA | [0..1] |  |
| ErrorMessage | Error Message with multiple occurrence. This returns ESB and DTS error messages. | NA | NA | [1..n] |  |
| ErrorMessageCode | The code for the ESB/DTS error if there are any errors generated by ESB/DTS. Refer to the Error Messages table below for ESB error messages (section [3.1.2.6](#_Error_Messages_1)) | String | NA | [1..1] |  |
| ErrorMessageText | The message that explains what the error is. | String | NA | [1..1] |  |
| ErrorMessageTextFr | The message that explains what the error is in French. | String | NA | [0..1] | This is just a place holder and not mapped. |
| DTSRTSTimeResponse | The elapsed time taken by DTS to return the response (in milliseconds) | Integer | NA | [0..1] |  |
| ProcessorInfo | The Header Tag for Processor Info | NA | NA | [0..1] |  |
| ProcessorID | Processor to which the request was sent and processed. E.g: Moneris, PayPal etc. | String | 30 | [1..1] |  |
| ProcessorTimeResponse | The elapsed time taken by the processor to return the response (in milliseconds) | Integer | NA | [1..1] |  |
| ProcessorResponse | The Processor response information which is received as a string. | String | NA | [1..1] |  |
| AdditionalParametersResponse | Any other parameters for future use | NA | NA | [0..1] |  |
| Parameter | Parameter Tag | NA | NA | [1..n] |  |
| Name | Name of the parameter | String | 50 | [1..1] |  |
| Value | Value of the Parameter | String | 50 | [1..1] |  |

#### 

#### TransCC – Sample Success Response

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:mes="http://ESB.int.bell.ca/GPS/messages" xmlns:typ="http://ESB.int.bell.ca/GPS/types">

<soapenv:Header/>

<soapenv:Body>

<mes:TransCCResponse>

<mes:HeaderResponse>

<typ:SystemCode>0</typ:SystemCode>

<typ:SystemMessageType>Success</typ:SystemMessageType>

<typ: DTSRTSTimeResponse>250</typ: DTSRTSTimeResponse>

</mes:HeaderResponse>

<!--Optional:-->

<mes:ProcessorInfo>

<typ:ProcessorID>Moneris</typ:ProcessorID>

<typ:ProcessorTimeResponse>250</typ:ProcessorTimeResponse>

<typ:ProcessorResponse><![CDATA[<?xml version="1.0" encoding="UTF-8"?><response>

<receipt>

<ReceiptId>999111000</ReceiptId>

<ReferenceNum>660110910011128200</ReferenceNum>

<ResponseCode>027</ResponseCode>

<ISO>01</ISO>

<AuthCode>945380</AuthCode>

<TransTime>12:43:29</TransTime>

<TransDate>2013-10-11</TransDate>

<TransType>00</TransType>

<Complete>true</Complete>

<Message>APPROVED \* =</Message>

<TransAmount>1.00</TransAmount>

<CardType>V</CardType>

<TransID>208514-0\_9</TransID>

<TimedOut>false</TimedOut>

<BankTotals>null</BankTotals>

<Ticket>null</Ticket>

<CorporateCard>false</CorporateCard>

<IsVisaDebit>false</IsVisaDebit>

</receipt>

</response>

]]></typ:ProcessorResponse>

</mes:ProcessorInfo>

</mes:TransCCResponse>

</soapenv:Body>

</soapenv:Envelope>

#### TransCC – Sample Error Response – Error generated at ESB

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:mes="http://ESB.int.bell.ca/GPS/messages" xmlns:typ="http://ESB.int.bell.ca/GPS/types">

<soapenv:Header/>

<soapenv:Body>

<mes:TransCCResponse>

<mes:HeaderResponse>

<typ:SystemCode>2</typ:SystemCode>

<typ:SystemMessageType>System Error</typ:SystemMessageType>

<typ:ErrorMessages>

<typ:ErrorMessage>

<typ:ErrorMessageCode>ESB001</typ:ErrorMessageCode>

<typ:ErrorMessageText>Invalid Request - Schema Validation failed</typ:ErrorMessageText>

<typ:ErrorMessage>

</typ:ErrorMessages>

</mes:HeaderResponse>

</mes:TransCCResponse>

</soapenv:Body>

</soapenv:Envelope>

#### TransCC – Sample Error Response – Error returned by DTS

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:mes="http://ESB.int.bell.ca/GPS/messages" xmlns:typ="http://ESB.int.bell.ca/GPS/types">

<soapenv:Header/>

<soapenv:Body>

<mes:TransCCResponse>

<mes:HeaderResponse>

<typ:SystemCode>2</typ:SystemCode>

<typ:SystemMessageType>System Error</typ:SystemMessageType>

<typ:ErrorMessages>

<typ:ErrorMessage>

<typ:ErrorMessageCode>ESB006</typ:ErrorMessageCode>

<typ:ErrorMessageText>Backend service has returned an unexpected error - DTS::DTS001</typ:ErrorMessageText>

</typ:ErrorMessage>

</typ:ErrorMessages>

</mes:HeaderResponse>

</mes:TransCCResponse>

</soapenv:Body>

</soapenv:Envelope>

#### TransCC – Sample Error Response – Error returned by the Processor

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:mes="http://ESB.int.bell.ca/GPS/messages" xmlns:typ="http://ESB.int.bell.ca/GPS/types">

<soapenv:Header/>

<soapenv:Body>

<mes:TransCCResponse>

<mes:HeaderResponse>

<typ:SystemCode>0</typ:SystemCode>

<typ:SystemMessageType>Success</typ:SystemMessageType>

<typ: DTSRTSTimeResponse>250</typ: DTSRTSTimeResponse>

</mes:HeaderResponse>

<!--Optional:-->

<mes:ProcessorInfo>

<typ:ProcessorID>Moneris</typ:ProcessorID>

<typ:ProcessorTimeResponse>250</typ:ProcessorTimeResponse>

<typ:ProcessorResponse><![CDATA[<?xml version="1.0" encoding="UTF-8"?><response>

<receipt>

<ReceiptId>999111000</ReceiptId>

<ResponseCode>NULL</ResponseCode>

<Message>System Error</Message>

</receipt>

</response>

]]></typ:ProcessorResponse>

</mes:ProcessorInfo>

</mes:TransCCResponse>

</soapenv:Body>

</soapenv:Envelope>

#### Error Messages

The following table summarizes the current error messages defined for DTS-ESB GPS TransCC:

|  | **System Code** | **System Message Text** | **Error Message Code** | **Error Message Text** | **Scenario / Conditions** |
| --- | --- | --- | --- | --- | --- |
| 1 | 0 | Success | - | - | The transaction has been treated successfully. |
| 2 | 2 | System Error | ESB001 | Invalid Request-Schema validation failed. | Client is trying to access the service with invalid request. Schema validation failed. |
| 3 | 2 | System Error | ESB002 | Backend Service Unavailable - <System Name> Service :: <message> | Moneris Service is down or unreachable  The message text will be appended with the System name (Moneris) and fault information resulting from the failed connection (timeout or connection rejection) |
| 4 | 2 | System Error | ESB003 | Error processing back end response – <System Name> Service | DTS returns a response that does not conform to its schema definition |
| 5 | 2 | System Error | ESB004 | Proxy service unexpected error : <message> | Unknown, unexpected error occurred within the ESB internal processing |
| 6 | 2 | System Error | ESB005 | Proxy service invalid data: Request contains invalid token | If proxy service contains invalid data and request cannot be forwarded to provider (i.e. Invalid Token. Request does not contain Credit card information within Payment or the token number does not start with 7, 8 or 9). |
| 7 | 2 | System Error | ESB006 | Backend service has returned an unexpected error - <System Name>Service - <code>::<message> | Backend Service has returned an unexpected error  The message text will be appended with the name of the backend service and the error code/message coming back from the backend. |
| 8 | 2 | System Error | ESB007 | Backend Service Unavailable – DTS-RTS Service - <code>::<message> | DTS service is down or unreachable  The message text will be appended with the fault information resulting from the failed connection (timeout or connection rejection) |
| 9 | 2 | System Error | ESB009 | Processor ID is not recognized - <ProcessorID> | Incoming request has a processor ID that is not recognized. |

**Note**: Any Error returned from Moneris will be returned as it is to the Calling System.

### 

# GPS and DTS-ESB Integration

When GPS has to integrate with DTS-ESB, the following steps has to be followed:

* Bell to provide to DTS-ESB the common name (CN) of the Entrust Advantage Certificate purchased for authentication mechanism.
* DTS-ESB to provide to GPS the URLs for Test and Prod environments.

# Appendix A — DTS-ESB Online Proxy Service WSDL URL

The following table contains the URLs for the Tests and Production environments.

| **Environment** | **URL** |
| --- | --- |
| **UAT** |  |
| **PROD** |  |

# Appendix B — BSS Client Certificate Management

It belongs to the GPS Key Custodians to manage the SSL client side Key Pairs and Certificate. GPS needs to Create Key Pairs and SSL Certificate when one of the following events occurs:

1. Key Pairs and Certificates are created for the first time
2. Existing Certificate is about to expire;
3. Existing Key Pairs or Certificate has been compromised / revoked.

It is expected that the GPS Key custodians manage the process of creation and issuance of certificates as follows:

1. Monitor the Expiry date and Issue renewed Certificate on time with original common name (CN) value
2. Create Key Pair and Certificate request;
3. Obtain a valid certificate from Entrust as per Bell Canada’s Legal & Regulatory Group outlined in the section below.

For guidance related to Certificate Acquisition, refer to Bell Internal procedures.