



Payment Express IVR Integration Requirements

Version 1.7

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98 Anzac Avenue
PO Box 8400
Auckland, 1150
New Zealand
www.paymentexpress.com

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1 INTRODUCTION

1.1 BACKGROUND AND OVERVIEW

The Payment Express IVR provides the ability for a merchant to take phone based payments inside of a Payment Express PCI compliant environment. The call scripts used are configurable and may be varied on a per customer basis. The purpose of this document is to show the default call script and to provide a starting point for merchants to design their own call scripts. Merchants wishing to customise their call script will need to consult their allocated Implementation Consultant at Payment Express to verify their requirements are able to be met.

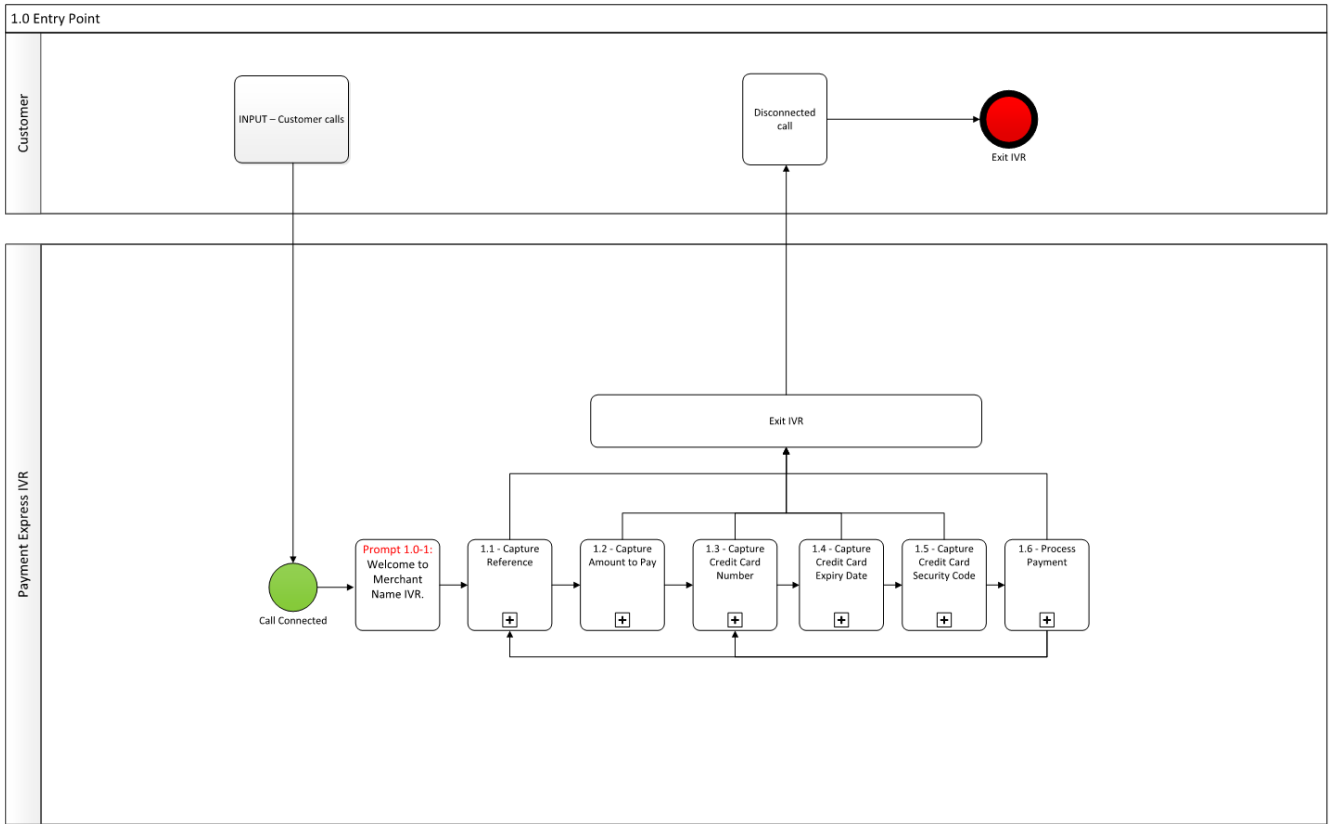
1.2 ASSUMPTIONS

Ref	Assumption	Reason
A01	When transferring a call to the Payment Express IVR the merchants system will fully de-trombone the call.	Failure to do so will mean DTMF tones pass through the merchants system and therefore leave them in scope for PCI requirements
A02	It is preferred that DTMF tones will be received by the Payment Express system out of band.	Out of band DTMF tones are preferred as this removes risk of voice data being misinterpreted as DTMF tones, however we can work with in band DTMF tones if required.

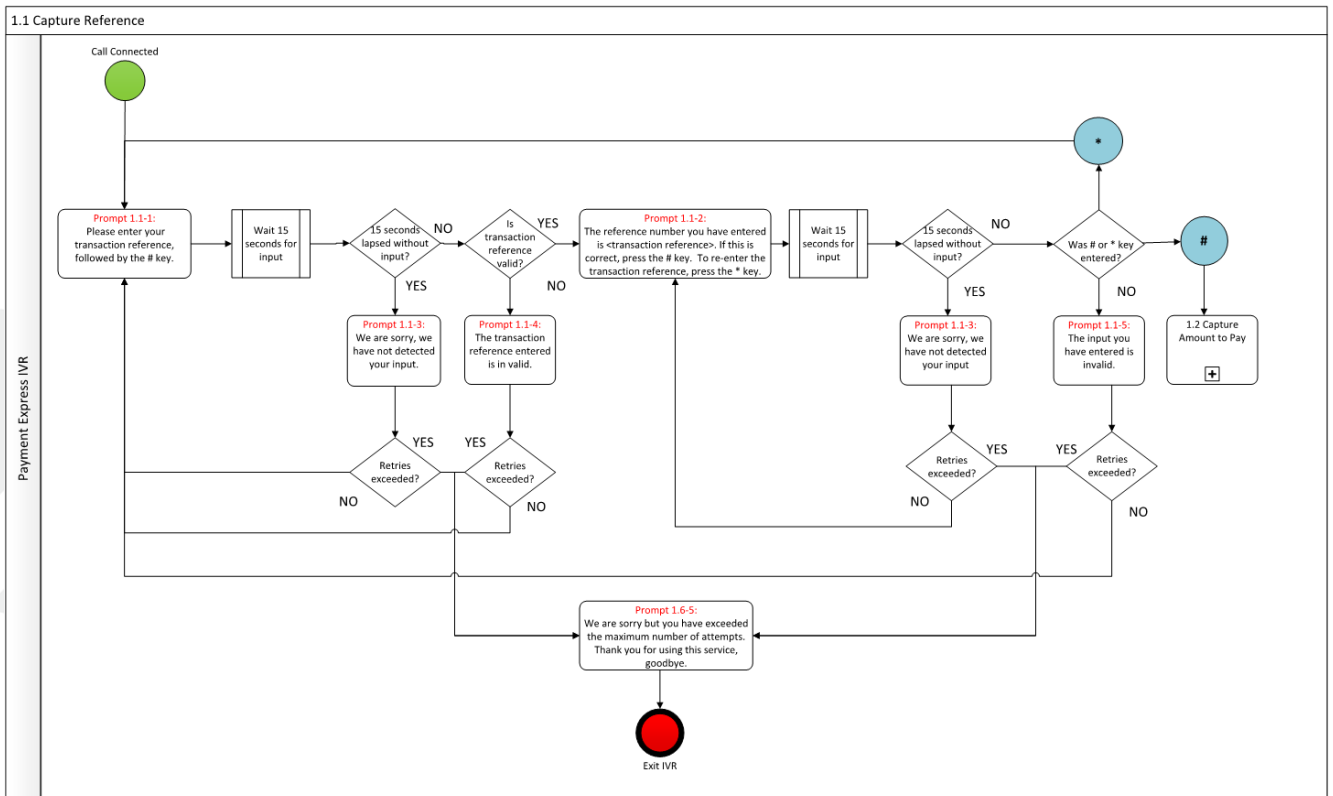
2 CALL SCRIPT PROCESS FLOW

This section documents the Call script process flow of the standard (off the shelf Payment Express IVR)

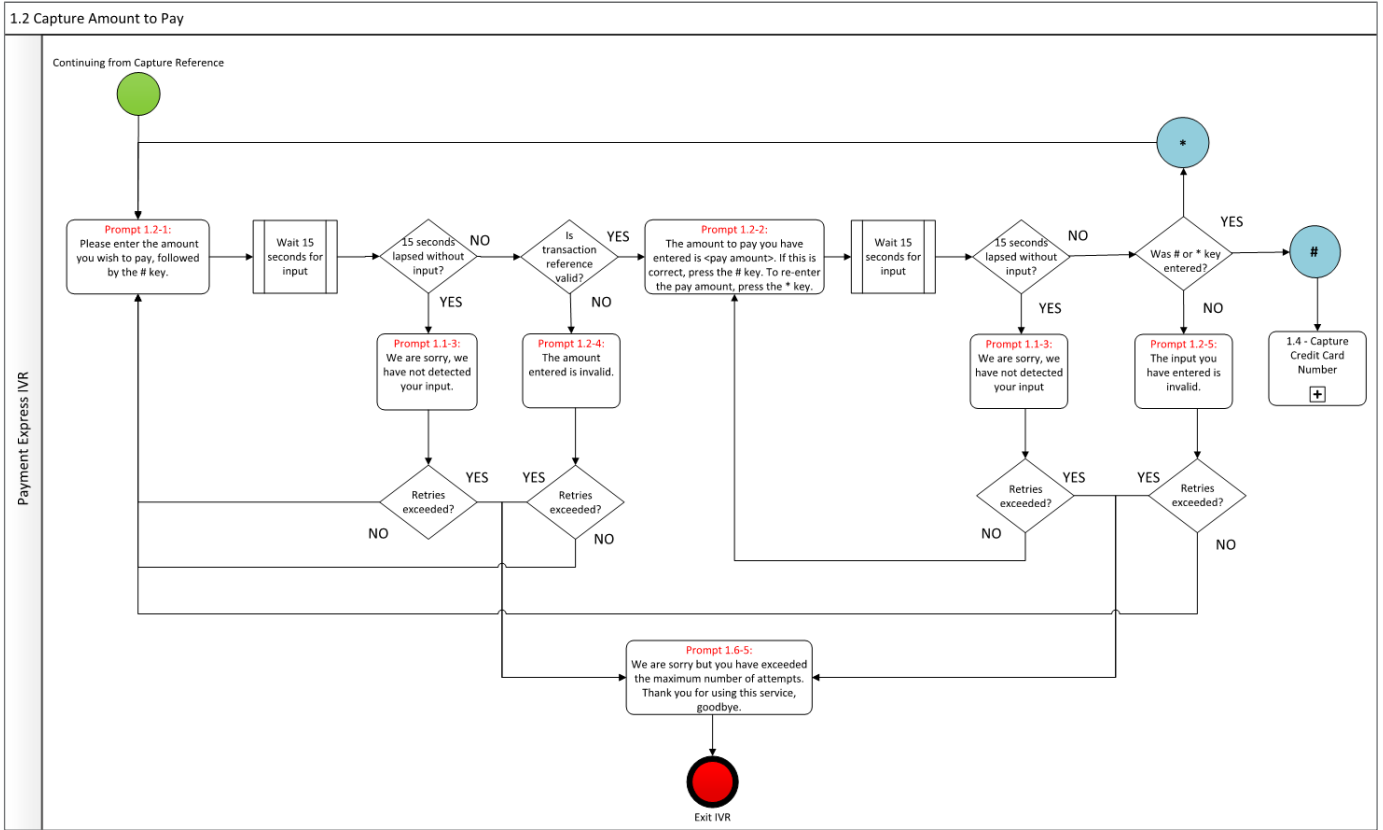
High level with Entry point



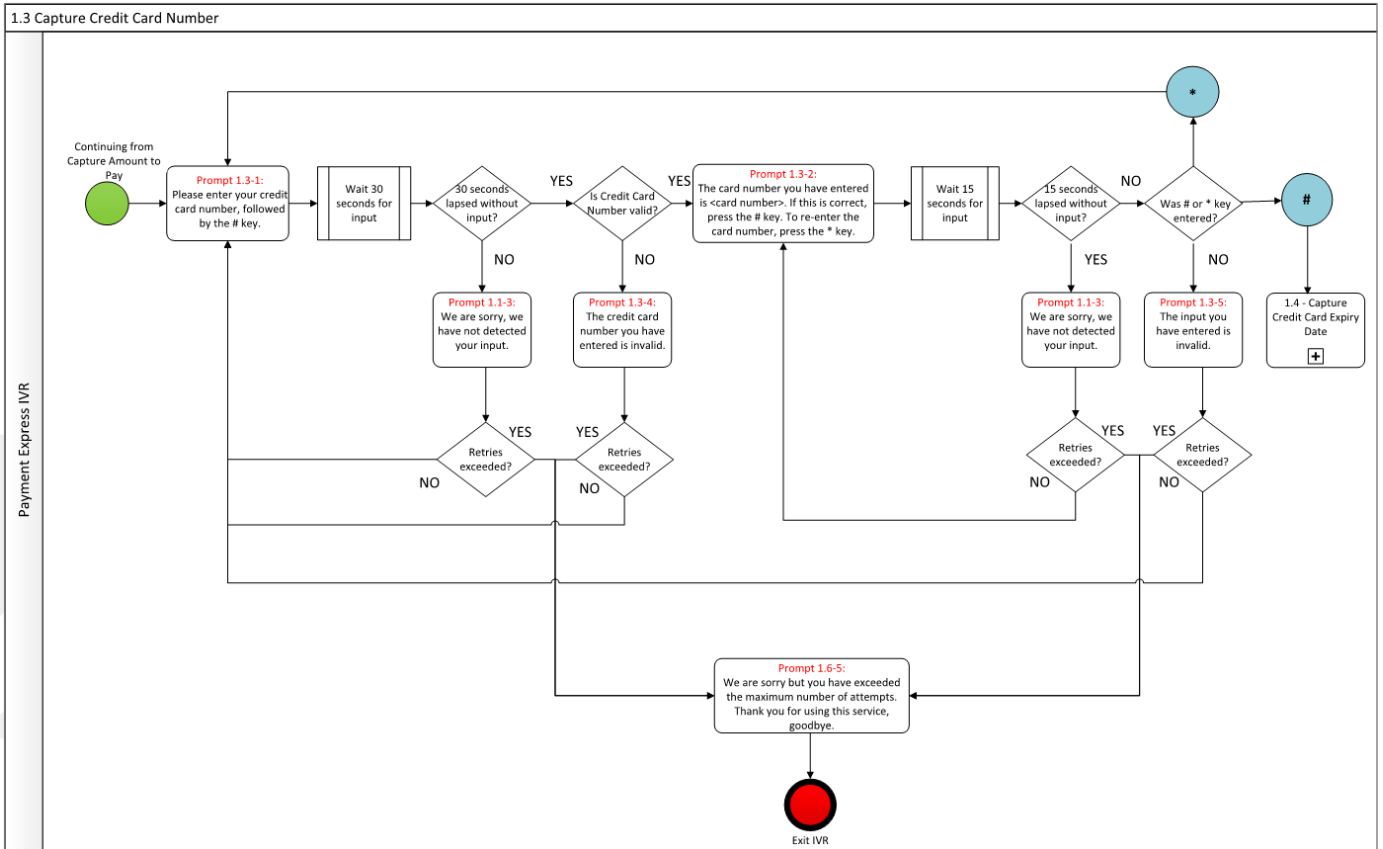
Capturing the Transaction Reference



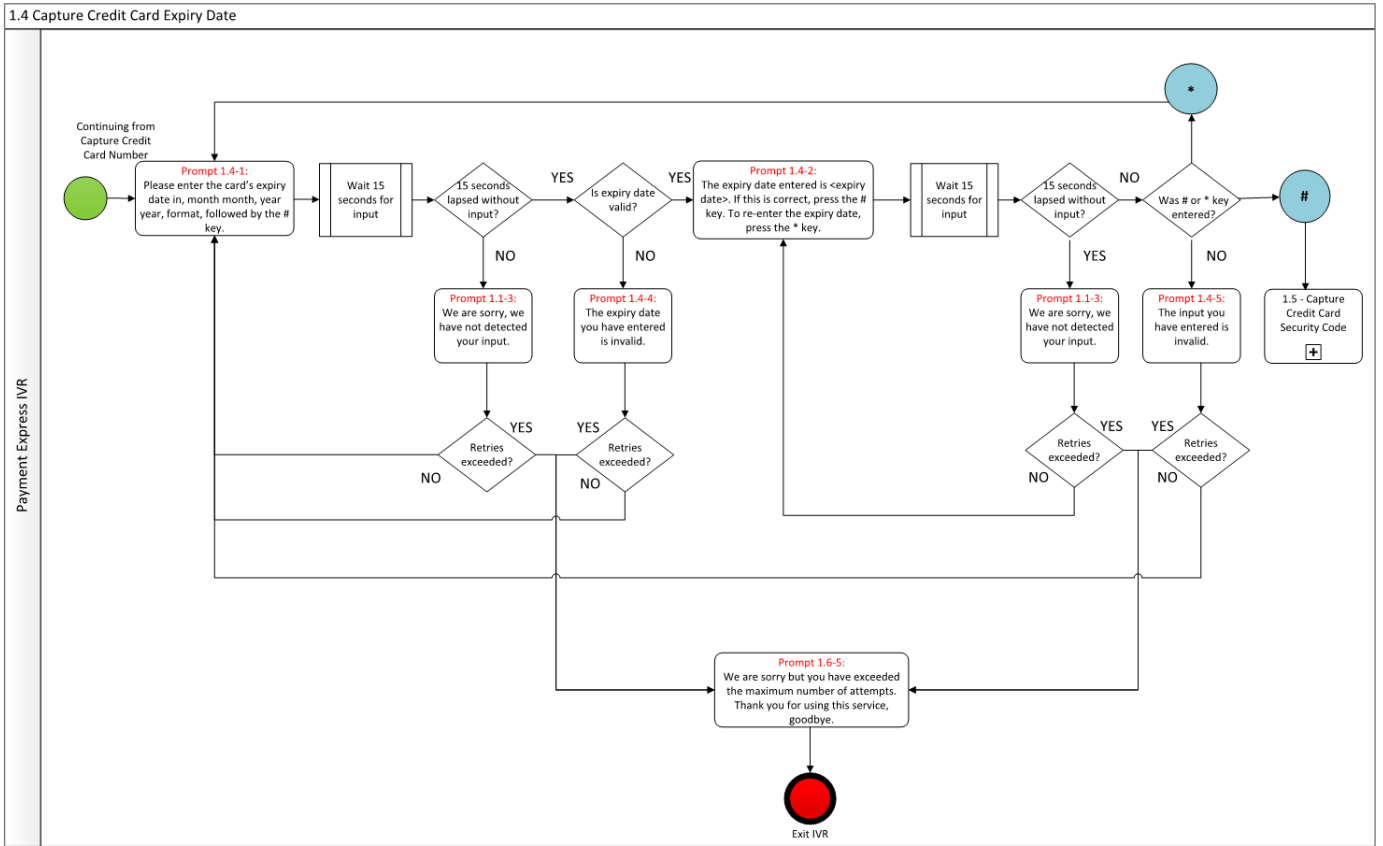
Capturing the Transaction Amount



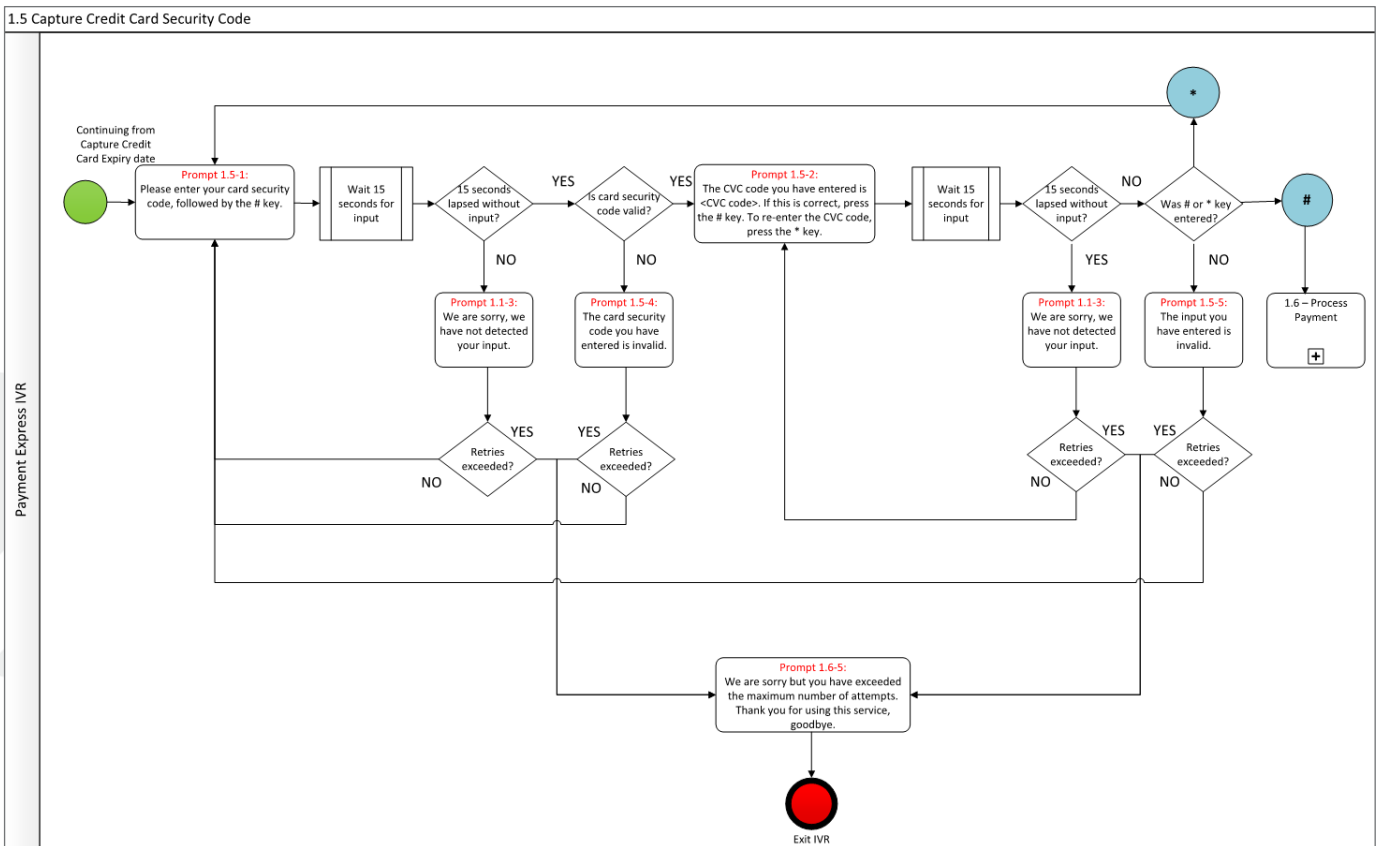
Capturing the Credit card number



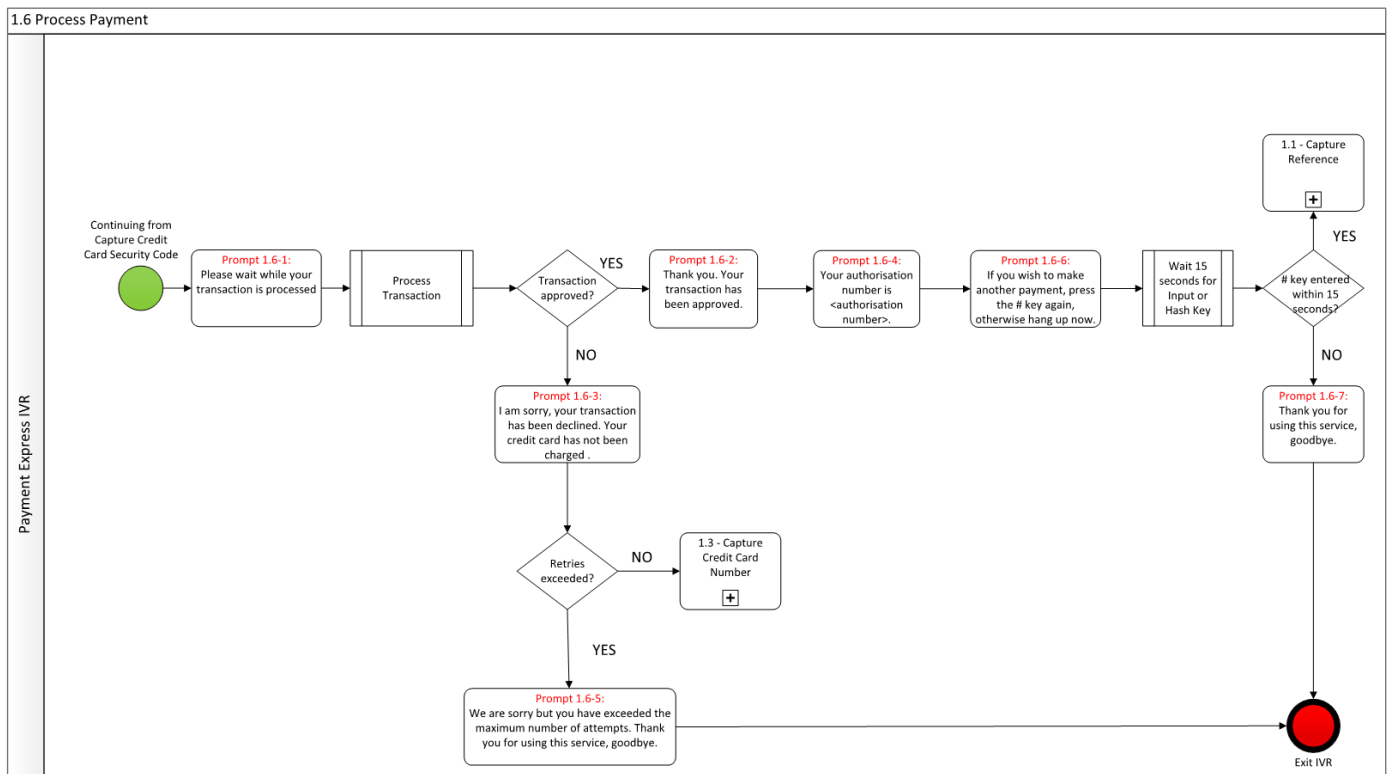
Capturing the Card Expiry Date



Capturing the Card Verification or Security Code (CVC or CSC)



Processing the Payment



2.1 CUSTOMISATION OF THE STANDARD CALL SCRIPT

Alterations to the call script may be made as necessary; however any such alterations will impact the development timeframes. It is expected that in most cases merchants will require a way of matching or importing a transaction into their system. This may be achieved by providing additional references for a transaction that is returned in the transaction result. This could be a customer Id or perhaps an invoice number. Or the call flow option to save the card. In this scenario we recommend altering '1.0 Entry Point' to give a general overview of the process flow and insert a new call flow similar to the flow '1.1 Capture Reference' shown above.

Another common requirement is to have a merchant-provided unique identifier for a transaction. The call script can be structured at the 1.0 Entry Point to have the numeric data, as DTMF tones, passed in by the merchants system before transferring the call thus making this step invisible to the cardholder entering their card details. Alternatively a prompt may be added to ask the cardholder to provide the reference (such as an invoice Id). The timeout duration and retry counts can also be configured per call flow.

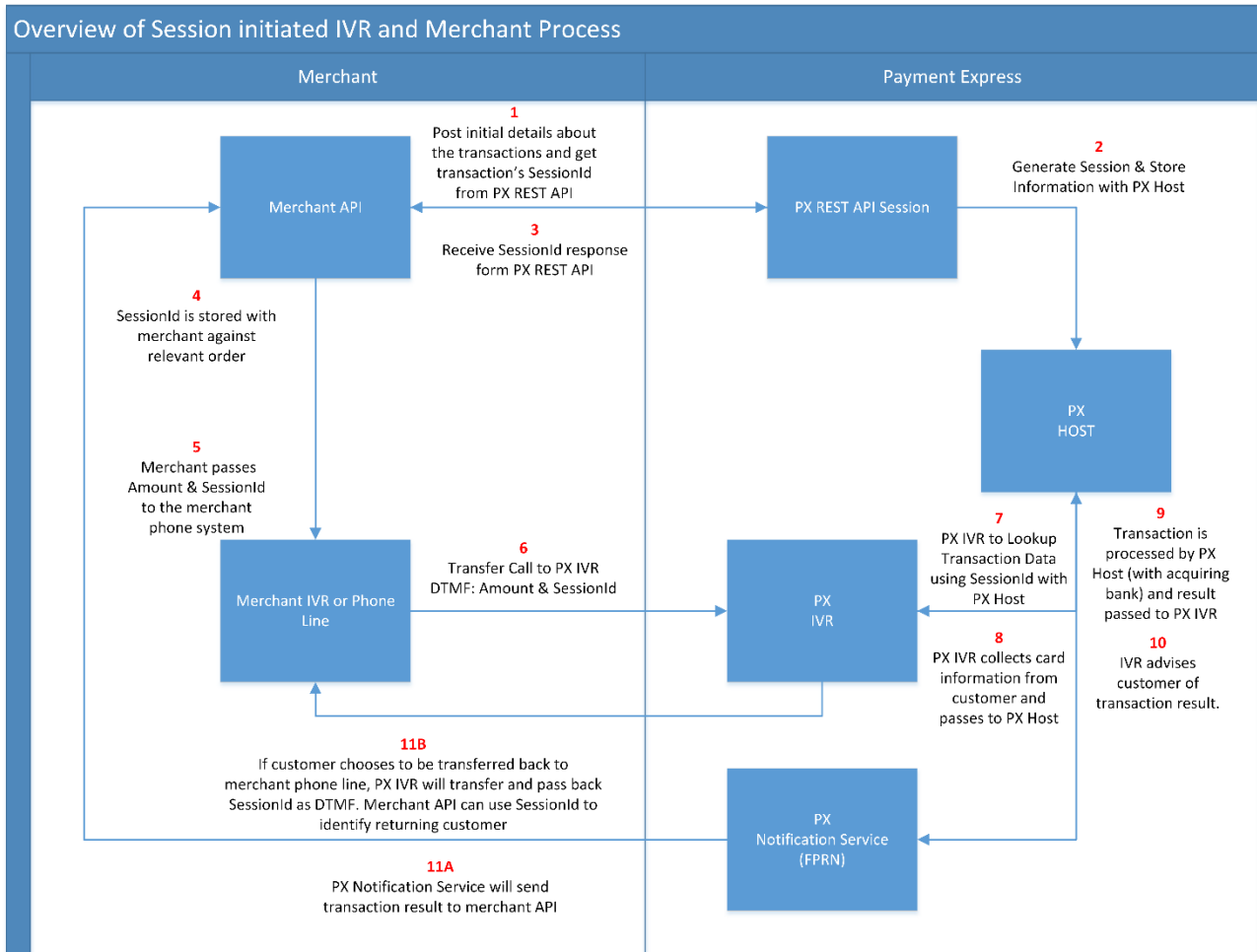
So the functionality of the IVR call flows can be customised to suit the merchant's needs on a case by case basis. Additional charges may apply, please contact one of our Sales representatives (sales@paymentexpress.com) for more information. Preferably the low level prompts shown in the call flows above would not need to be changed but the need may arise to obtain additional input parameters from the cardholder. It is suggested that any additional prompts appear before the prompts to capture card information.

If this is required please document the changes to process flow as above and supply revised diagrams with details to your Payment Express Implementation Consultant (once available and project has been initiated) for verification. This will also ensure the custom IVR solution can be efficiently implemented by the Payment Express Development team.

2.2 SESSION INITIATED IVR

Instead of initiating the IVR transaction when the call to our IVR is connected, alternatively the merchant's system can send an API request with the transaction details such as merchant references and amount. The API response to the merchant's system will contain a Payment Express generated session ID for the transaction to occur via IVR. The merchant's system will dial the Payment Express IVR and transmit the session ID as DTMF tones to the connected IVR call. The IVR call flows proceeds where the customer is prompted to enter the card details for the payment to be processed on the session ID.

This allows the call flows to capture the reference and amount to be skipped as those transaction request details are already associated with the session ID.

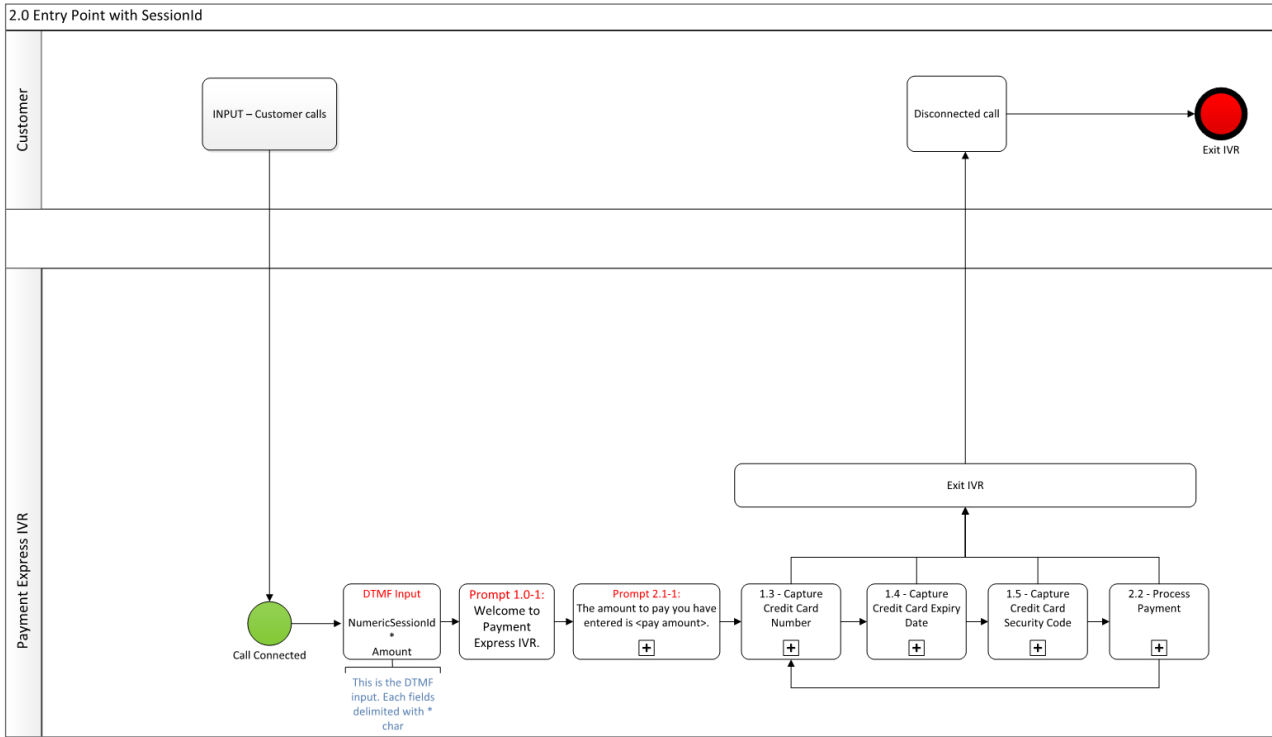


1. The merchant's system sends a create session request with the transaction details (such as amount, transaction reference, merchant's notification URL, etc) using the Payment Express API. The API documentation will be provided on request.
The API credentials for testing and live usage will be provided by our Support team on request.
2. The valid create session API request will return the session Id for the merchant to capture.
3. The merchant's system extracts the last 16 characters of the session ID and converts the last 16 characters to decimal numbers (in base-10).
4. The merchant's system dials the Payment Express IVR phone number, when the call is connected, merchant's system passes the decimal numbers of the session ID as DTMF tones.
5. After the merchant's system transfers the call to the customer, the customizable call flows (shown above) contains various steps to prompt the card details.

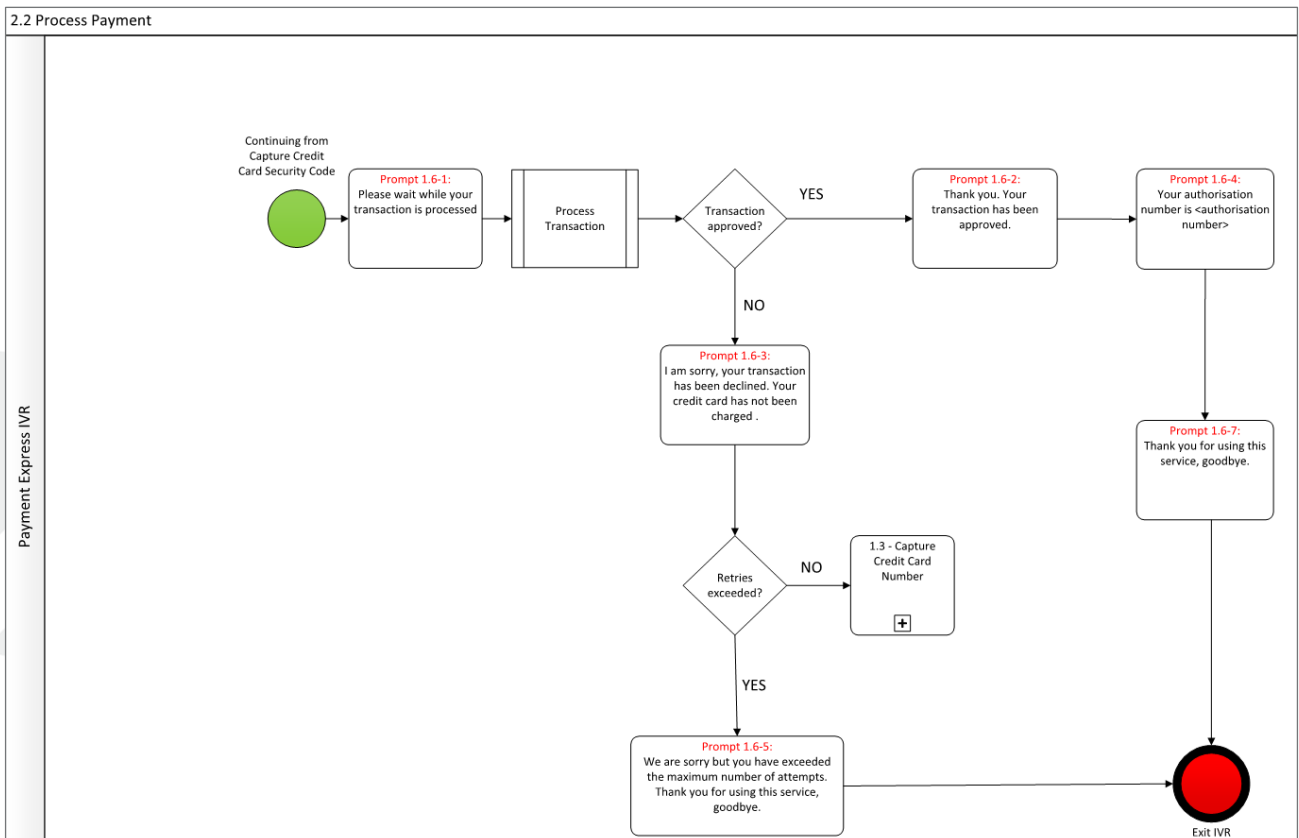
- Once the transaction is processed, the merchant's system receives a notification to the URL specified in step 1 above. The notification received to the merchant system contains the transaction outcome. Alternatively on receiving a notification the merchant system can also query the full original session ID using the Payment Express API query session request.

The standard call flows for the session initiated IVR are below. The Capture Card details call flow remain the same as per call flow diagrams numbered 1.3 to 1.5.

Entry Point with SessionId



Process Payment for the Session Initiated IVR



3 AUDIO FILE REQUIREMENTS

Each of the Prompts in the call script will require one or more audio files to be played. It is expected that the Payment Express customer requesting the IVR will supply similar files named accordingly. The Call script prompts below are a guide and the customer may choose to alter the prompt's wording for a given file provided the change does not influence the expected behaviour of the cardholder at the given prompt. Alternatively, a text to speech option is available for customers not wishing to provide their own custom voice files. It is recommended that files have consistent quiet space at beginning and end so that when numbers are being played back to cardholders the speech pattern is consistent.

The audio file format and metadata should be exactly 16-kHz LPCM @ 16-bits/sample.

Call Script Prompts		
Prompt	File Name	Call Script
1.0-1	1.0-1.wav	Welcome to Merchant Name IVR.
1.1-1	1.1-1.wav	Please enter your transaction reference, followed by the # key.
1.1-2	1.1-2.wav	The reference number you have entered is <transaction reference>. If this is correct, press the # key. To re-enter the transaction reference, press the * key.
1.1-3	1.1-3.wav	We are sorry, we have not detected your input.
1.1-4	1.1-4.wav	The transaction reference entered is invalid.
1.1-5	1.1-5.wav	The input you have entered is invalid.
1.2-1	1.2-1.wav	Please enter the amount you wish to pay followed by the # key.
1.2-2	1.2-2.wav	The amount to pay you have entered is <pay amount>. If this is correct, press the # key. To re-enter the pay amount, press the * key.
1.2-4	1.2-4.wav	The amount entered is invalid.
1.3-1	1.3-1.wav	Please enter your credit card number, followed by the # key.
1.3-2	1.3-2.wav	The card number you have entered is <card number>. If this is correct, press the # key. To re-enter the card number, press the * key.
1.3-4	1.3-4.wav	The credit card number you have entered is invalid.
1.4-1	1.4-1.wav	Please enter the card's expiry date in month month, year year format followed by the # key.
1.4-2	1.4-2.wav	The expiry date entered is <expiry date>. If this is correct, press the # key. To re-enter the expiry date, press the * key.
1.4-4	1.4-4.wav	The expiry date you have entered is invalid.
1.5-1	1.5-1.wav	Please enter your card security code followed by the # key. This is usually located on the back of your card.
1.5-2	1.5-2.wav	The CVC code you have entered is <CVC code>. If this is correct, press the # key. To re-enter the CVC code, press the * key.
1.5-4	1.5-4.wav	The card security code you have entered is invalid.
1.6-1	1.6-1.wav	Please wait while your transaction is processed.
1.6-2	1.6-2.wav	Thank you. Your transaction has been approved.
1.6-3	1.6-3.wav	I am sorry, your transaction has been declined. Your credit card has not been charged.
1.6-4	1.6-4.wav	Your authorisation number is <authorisation number>.
1.6-5	1.6-5.wav	We are sorry but you have exceeded the maximum number of attempts. Thank you for using this service, goodbye.
1.6-6	1.6-6.wav	If you wish to make another payment, press the # key again, otherwise hang up now.
1.6-7	1.6-7.wav	Thank you for using this service, goodbye.
2.1-1	2.1-1.wav	The amount to pay you have entered is <pay amount>.

Playback Prompts

Prompt	File Name	Call Script
0	Zero.wav	0
1	One.wav	1
2	Two.wav	2
3	Three.wav	3
4	Four.wav	4
5	Five.wav	5
6	Six.wav	6
7	Seven.wav	7
8	Eight.wav	8
9	Nine.wav	9
10	Ten.wav	10
11	Eleven.wav	11
12	Twelve.wav	12
13	Thirteen.wav	13
14	Fourteen.wav	14
15	Fifteen.wav	15
16	Sixteen.wav	16
17	Seventeen.wav	17
18	Eighteen.wav	18
19	Nineteen.wav	19
20	Twenty.wav	20
30	Thirty.wav	30
40	Forty.wav	40
50	Fifty.wav	50
60	Sixty.wav	60
70	Seventy.wav	70
80	Eighty.wav	80
90	Ninety.wav	90
Hundred	Hundred.wav	Hundred
Thousand	Thousand.wav	Thousand
And	and.wav	And
Cent	cent.wav	Cent
Cents	cents.wav	Cents
Dollar	dollar.wav	Dollar
Dollars	dollars.wav	Dollars
January	January.wav	January
February	February.wav	February
March	March.wav	March
April	April.wav	April
May	May.wav	May
June	June.wav	June
July	July.wav	July
August	August.wav	August
September	September.wav	September
November	November.wav	November
October	October.wav	October
December	December.wav	December
First	First.wav	First
Second	Second.wav	Second
Third	Third.wav	Third
Fourth	Fourth.wav	Fourth
Fifth	Fifth.wav	Fifth
Sixth	Sixth.wav	Sixth
Seventh	Seventh.wav	Seventh
Eighth	Eighth.wav	Eighth

Ninth	Ninth.wav	Ninth
Tenth	Tenth.wav	Tenth
Eleventh	Eleventh.wav	Eleventh
Twelfth	Twelfth.wav	Twelfth
Thirtieth	Thirtieth.wav	Thirtieth
Fourteenth	Fourteenth.wav	Fourteenth
Fifteenth	Fifteenth.wav	Fifteenth
Sixteenth	Sixteenth.wav	Sixteenth
Seventeenth	Seventeenth.wav	Seventeenth
Eighteenth	Eighteenth.wav	Eighteenth
Nineteenth	Nineteenth.wav	Nineteenth
Twentieth	Twentieth.wav	Twentieth
Twenty-first	Twenty-first.wav	Twenty-first
Twenty-second	Twenty-second.wav	Twenty-second
Twenty-third	Twenty-third.wav	Twenty-third
Twenty-fourth	Twenty-fourth.wav	Twenty-fourth
Twenty-fifth	Twenty-fifth.wav	Twenty-fifth
Twenty-sixth	Twenty-sixth.wav	Twenty-sixth
Twenty-seventh	Twenty-seventh.wav	Twenty-seventh
Twenty-eighth	Twenty-eighth.wav	Twenty-eighth
Twenty-ninth	Twenty-ninth.wav	Twenty-ninth
Thirtieth	Thirtieth.wav	Thirtieth
Thirty-first	Thirty-first.wav	Thirty-first

Notes:

* Should be read as “star”

should be read as “hash”

4 TRANSACTION OUTCOMES

IVR transactions take place on the Payment Express system; therefore the need arises to have mechanisms that will allow the Merchants system to become aware of transactions that have been processed. There are various options available to achieve this.

4.1 PAYLINE

A user account to log into the Payment Express Payment Manager portal to view the transaction details processed. Transaction Reports can also be generated and downloaded through the portal.

4.2 AUTO REPORTS

A Report that contains transactions processed on a merchant account may be generated and sent on a periodic basis (usually daily). The method of delivery is optional between SFTP and email. Please contact one of our Sales representatives (sales@paymentexpress.com) for more information.

4.3 REAL-TIME NOTIFICATION

A real-time notification response after the IVR transaction may be generated with the transaction details and sent to an API endpoint or web server hosted by the merchant. This option allows a merchant to update their system in real time with transaction outcomes. The notification with the transaction outcome details can be sent as HTTPS POST with the JSON payload. For the notification sent as a SOAP payload there is additional development and customisation task required by our Development team.

The **transaction outcome** information is within the notification payload. It is recommended to record these details your own system’s transaction outcome details.

Following are the common transaction outcome fields:

MerchantReference - this is a merchant generated reference for the transaction if one is required - if needed the reference would need to be passed via DTMF tones at the beginning of the call to the Payment Express (PX) IVR.

TxnRef - a Transaction Reference can be generated by the merchant - passed via DTMF tones. If not, then Payment Express will generate one, so there will always be a TxnRef.

Transaction Id or DpsTxnRef - always generated for every transaction on the Payment Express gateway. This is a unique identifier for the transaction on our system - this is the best way to identify an individual transaction when troubleshooting or resolving an issue so your application should include it in your system's transaction outcome details.

BillingId - a merchant generated token used for card tokenization - passed via DTMF tones at the beginning of the call to the PX IVR.

CardId or DpsBillingId - a PX generated token used for card tokenization that is always returned if tokenization is enabled.

CardNumber2 - A card token generated by Payment Express when saving or tokenizing a card for recurring billing. CardNumber2 is a 16 digit number which conforms to a Luhn 'mod 10' algorithm and has a 1-to-1 relationship with the actual card number used. Please contact Payment Express support if you would like to use this value.

ReCo - Response Code. A successful transaction will have '00' as the response code.

AuthCode - this is the reference passed from the Merchant's Bank confirming Authorisation of the transaction by the Card Issuing Bank.

TxnData1, TxnData2, TxnData3 - optional reference fields for a given transaction that the merchant can use if required - would be set by the merchant and passed via DTMF tones at the beginning of the call to the PX IVR.

5 LIMITATIONS

The IVR can accept / allow the cardholder to input buttons over the top of the audio files. However, only the last audio file in a prompt (that contains a sequence of audio files) may be skipped by user input.

6 TESTING

Once a test version of your IVR solution has been deployed in our UAT environment, you will need to test the IVR solution to confirm that it meets your requirements and expectations. It is recommended that this testing replicates as much as possible the expected behaviour in any of your systems that receive the IVR transaction outcomes.

A test IVR will be made available for the merchant to perform UAT validation that the IVR meets their agreed upon requirements. Once the Merchant has signed off the IVR requirements they may request the IVR scripts be deployed into the production environment. The environment will remain available for 5 working days following the production deployment. After which it may be taken down and made available to other merchants waiting for development testing.

7 APPENDIX

GENERAL GLOSSARY:

Term	Description
API	Application Programming Interface.
Assumption	A condition not certain to happen, outside the control of the project, and necessary for the project or solution to be successful.
DTMF	Dual-Tone Multi-Frequency. Dual-tone multi-frequency signalling is an in-band telecommunication signalling system using the voice-frequency band over telephone lines between telephone equipment and other communications devices and switching centres.
IVR	Interactive Voice Response.
PCI	PCI DSS is a comprehensive set of requirements created by the Payment Card Industry Security Standards Council for enhancing cardholder data security and to ensure the safe handling and storage of sensitive customer credit card information / data.
UAT	User Acceptance Testing.