Experian: Affordability Service

Integration Specification

Version: 1.2

Contents

1. Change Control

Version	Date	Status	Change Description
1.0	2015-11-30	Sign Off	Version signed off by Lloyd Schmidt
1.1	2016-09-01	Updated	Added version 2.0 for the doAffordability method
1.2	2016-09-01	Updated	Updated to the Teraco URL domain

2. Definitions

Term	Definition
XML	Extensible Markup Language (XML) is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable
json	JavaScript Object Notation, is an open standard format that uses human-readable text to transmit data objects consisting of attribute–value pairs
Gross Income	Gross Income is the income rand value earned without deductions from whatever source.
Net Income	The Gross Income less statutory deductions such as income tax, unemployment insurance fund contributions and maintenance payments (if available).
GMIP	Gross Monthly Income Predictor. The GMIP is a service offered by Experian that predicts the consumer's probable gross income amount based on their credit data. **Note:** This service is used when no income (Gross or Net) is provided. The service will return the consumers probable gross income amount, the confidence index of the consumer's deduced income and the income band in which the consumer is most likely to be earning.
Bureau Expenses	Bureau Expenses are calculated from all open trades held by the consumer with a credit provider where a monthly instalment is due.
Living Expenses	This is the monthly non-credit related expenses of the consumer.
Disposable Income	The disposable income is the rand value available to the consumer once all the bureau and living expenses have been deducted from the consumer's net income.

3. Introduction

The affordability service is a web service offered by Experian that uses the consumer's income (Gross and/or Net), calculates their Necessary Expenses (at a minimum, the minimum living expenses as required in terms of Regulation 23A (9) and (10) of the National Credit Act (Act 34 of 2005) ("NCA"), published on 13 March 2015 in Government Gazette No 38557; it evaluates the consumer's total monthly debt repayment obligations and returns the consumer's available income (Discretionary Income) which will indicate the consumer's ability to fund the proposed credit instalment in terms of a new credit agreement.

The Minimum Expense Norms is a guideline added to the NCA, which defines a consumer's minimum living expense amount (excluding monthly debt repayment obligations) when determining their affordability.

If the client already defined their monthly expenses in their credit application, this amount should be sent in the pLivingExpenses, which will be compared to the sum of the minimum living expense amount and the monthly debt repayment obligations (bureau expenses) to ensure that the declared expenses fulfill a minimum affordability amount.

In the event that neither the pGrossIncomeAmount nor the pNetIncomeAmount parameters are supplied, the Gross Monthly Income Predictor ("GMIP") service will be used to calculate the consumer's possible affordability. Note: The GMIP is a deduced amount based on the consumer's credit profile and credit profiles of the same or similar condition. As such this amount is merely a guideline as to what the possible gross monthly income of the consumer could be and the amount still requires validation by the User as required by the NCA regulations.

This web service can assist the user with their responsibility in terms of the NCA to assess the prospective consumer's financial means to pay the proposed credit instalment and does not indemnify the User to ensure their compliance.

4. Implementation

This section gives an overview of the system interaction and can be used as a guide when implementing this service.

Request consumer data via the *doAffordability* method by supplying the login information and a consumer ID number (*pIdNumber*), as these are mandatory parameters. All subsequent parameters regarding the consumer are optional depending on the information available at the time of requesting the affordability.

The response will be given via the *transactionReplyClass.* The *returnData* parameter will contain the result string if the *transactionCompleted* parameter is set to True.

When the *transactionCompleted* parameter is:

a. **True**
   i. *returnData* parameter – will contain the response string as set by pOutputFormat.

b. **False**
   i. Return Error Code via: *ErrorCode* parameter
   ii. Return Error String via: *ErrorDescription* parameter

5. Web Service

The web service supports:
- SOAP and REST via a HTTPS tunnel
- Output and input strings supported are Json and XML

The section bellow below covers the connections strings and the methods exposed via the service.

5.1 SOAP

SOAP Connection	URL
Test Server	https://apis-uat.experian.co.za/AffordService?wsdl
Live Server	https://apis.experian.co.za/AffordService?wsdl

Service definitions

Function	Parameter	Type	Length	Notes	Return
Do Affordability	pUsername	String	35	Service user nameusername	TransReplyClass
	pPassword	String	35	Service user password	
	pOrigin	String	30	Name of originating application	
	pOriginVersion	String	5	Set Version to originating application version	
	pRequestVersion	String	5	Versions: 1.0 – Original 2.0 – Added Spouse	
	pOutputFormat	String	4	Specify the expected result type: • XML • json	
	pIdNumber	String	13	Consumer's ID number on which the enquiry will be run	
	pName	String	25	First name of consumer	
	pSurname	String	25	Surname of consumer	

	pGrossIncome Amount	Number	9	Consumer's Gross monthly income amount (as a whole rand value)	
	pNetIncomeAmount	Number	9	Consumer's Net monthly income amount (as a whole rand value)	
	pLivingExpenses	Number	9	Consumer's declared monthly living expenses(as a whole rand value excluding bureau expenses)can you add a space after expenses	
	pPrimarySpouse EnquiryId	Number	9	Add the Enquiry Id of the Spouse to link a new enquiry to. **Note**: Only valid in Version 2.0	
TransReply Class	transactionCompleted	Boolean	-	The parameter is used to indicate the result of the request: - True = Successful - False = not completed\error	See type
	errorCode	String	5	Error code. See error codes for more detail.	See type
	errorDescription	String	255	Error description. See error codes for more detail.	See type
	returnData	String	Variable	String containing request result based on pOutputFormat	See type

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5.2 REST

REST Connection	URL
Test Server	https://apis-uat.experian.co.za:9443/Afford/DoAffordability
Live Server	https://apis.experian.co.za:9443/Afford/DoAffordability

Rest Service definitions – REST POST

Function	Parameter	Type	Length	Notes	Return
REST POST: *doAffordability*	pUsername	String	35	Service user name username	TransReplyClass
	pPassword	String	35	Service user password	
	pOrigin	String	30	Name of originating application	
	pOriginVersion	String	5	Set Version to originating application version	
	pRequestVersion	String	5	Versions: 1.0 – Original 2.0 – Added Spouse	
	pOutputFormat	String	4	Specify the expected result type: • XML • json	
	pIdNumber	String	13	Consumer's ID number on which the enquiry will be run	
	pName	String	25	First name of consumer	
	pSurname	String	25	Surname of consumer	
	pGrossIncomeAmount	Number	9	Consumer's Gross monthly income amount	
	pNetIncomeAmount	Number	9	Consumer's Net monthly income amount	
	pLivingExpenses	Number	9	Consumer's declared monthly living expenses	

				(excluding bureau expenses)	
	pPrimarySpouse EnquiryId	Number	9	Add the Enquiry Id of the Spouse to link a new enquiry to. **Note**: Only valid in Version 2.0	
	Example URL: Will be provided				
Transaction Output	transactionCompleted	Boolean	-	The parameter is used to indicate the result of the request: - True = Successful - False = not completed\error	See type
	errorDescription	String	255	Error description. See error codes for more detail.	See type
	errorCode	String	5	Error code. See error codes for more detail.	See type
	returnData	String	Variable	String containing request result based on pOutputFormat	See type
	Important: The REST response will be in json, the returnData result will be based on the pOutputFormatparameter – json or XML				

Example - REST input

```
{
    "pUsername":"Your Username",
    "pPassword":"Your Password",
    "pOrigin":"Chrome",
    "pOriginVersion":"1.0",
    "pRequestVersion":"1.0",
    "pOutputFormat":"XML",
    "pIdNumber":"7408285107080",
    "pName":"John",
    "pSurname":"Doe",
    "pGrossIncomeAmount":"70000",
    "pNetIncomeAmount":"5500",
    "pLivingExpenses":"1500"
}
```

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Example – REST output – error: Below is a json result string from a REST call. Note the *returnData* is set to XML as per the input request.

Example - Json Error Result

```
{
"transactionCompleted":false,can you add a space after :
"errorCode":"-205",
"errorDescription": "Invalid Username or Password or Service not activated for this branch."
}
```

Example - XML Error Result

```
<RESULTS>
    <TRANSACTION_COMPLETED>false</TRANSACTION_COMPLETED>
    <ERR_CODE>-205</ERR_CODE>
    <ERR_STRING>Invalid Username or Password or Service not activated for this branch.</ERR_STRING>
</RESULTS>
```

6. Service Input Service Output

The matrix below defines the output for the service in the case of a successful service call. The output is supplied via the returnData parameter and can be of type json or XML depending on the value set via the input parameter pOutputFormat.

Output Definition

FIELD NAME	TYPE	LENGTH	DESCRIPTION
ID_NUMBER	String	13	ID number of consumer.
Name	String	25	First name of consumer.
Surname	String	25	Surname of consumer.
Expenses	Number	9	Consumer's non-credit expenses as provided.
Gross_Income_Amount	Number	9	Consumer's Gross monthly income amount as supplied.
Cal_Gross_Income_Amount	Number	9	Consumer's Gross monthly income as calculated.
Net_Income_Amount	Number	9	Consumer's Net monthly income amount as supplied.
Cal_Net_Income_Amount	Number	9	Consumer's Net monthly income as calculated.
GMIP_Value	Number	9	The GMIP (Gross Monthly Income) variables are used to calculate the Minimum_Expense and Disposable_Income when the pGrossIncomeAmount and pNetIncomeAmount parameters are not supplied in the request. The GMIP_Value is the predicted rand value of the user's gross income per month rounded to the nearest R10.
GMIP_Confidence_Level	String	24	An indication for the level of confidence the Income Predictor assigns to its prediction; it is dependent upon the depth of data that could be provided to the model. Valid measures are low, medium or high.
GMIP_Band	String	15	The band in which the predicted income falls (e.g. R4000 to <R6000).

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Bureau_Expenses	Number	9	The monthly repayable amount of all active credit agreements.
Calc_Living_Expenses	Number	9	An estimate of the consumers living expenses, based on the consumers derived data and disregarding any bureau expenses.
Calc_Expenses	Number	9	Total expenses of the consumer as a sum of the calculated living expenses and bureau expenses.
Disposable_Income	Number	9	Discretionary Income available after all expenses, bureau deductions and minimum living expenses have been deducted from the consumer's net income/calculated.
Enq_id	Number	9	The id of the affordability enquiry.
Primary_Spouse_Enq_id	Number	9	The id of the affordability primary spouse enquiry. **Note**: Only valid in Version 2.0

Note that in the case of a REST call, the *returnData* will contain escape characters for json and xml.

Example - Json output

```
{
        "ID_NUMBER" : "8209147250087",
        "NAME" : "JOHN",
        "SURNAME" : "DOE",
        "EXPENSES" : "3000",
        "Gross_Income_Amount" : "10000",
        "Cal_Gross_Income_Amount" : "10000",
        "Net_Income_Amount" : "8000",
        "Cal_Net_Income_Amount" : 9305,
        "GMIP_Value" : "5500",
        "GMIP_Confidence_Level" : "High",
        "GMIP_Band" : "R4,000 – R5,999",
        "Bureau_Expenses" : "4346",
        "Calc_Living_Expenses" : 3695,
        "Calc_Expense" : "8041.00",
        "Disposable_Income" : "1264.00",
        "Enq_id" : 12170
}
```

Example - XML output

```
<RESULTS>
  <TRANSACTION_COMPLETED>true</TRANSACTION_COMPLETED>
  <RET_DATA>
   <ROOT>
        <ID_NUMBER>8209147250087</ID_NUMBER>
        <NAME>JOHN</NAME>
        <SURNAME>DOE</SURNAME>
        <EXPENSES>3000</EXPENSES>
        <Gross_Income_Amount>10000</Gross_Income_Amount>
        <Cal_Gross_Income_Amount>10000</Cal_Gross_Income_Amount>
        <Net_Income_Amount>8000</Net_Income_Amount>
        <Cal_Net_Income_Amount>9305</Cal_Net_Income_Amount>
        <GMIP_Value>5500</GMIP_Value>
        <GMIP_Confidence_Level>High</GMIP_Confidence_Level>
        <GMIP_Band>R4,000 – R5,999</GMIP_Band>
        <Bureau_Expenses>4346</Bureau_Expenses>
        <Calc_Living_Expenses>3695.00</Calc_Living_Expenses>
        <Calc_Expense>8041.00</Calc_Expense>
        <Disposable_Income>1264.00</Disposable_Income>
        <Enq_id>12171</Enq_id>
</ROOT>  </RET_DATA>
</RESULTS>
```

GMIP Bands

Monthly Income Bands
Unable To Determine GMIP
<R4,000
R4,000 - R5,999
R6,000 - R7,999
R8,000 - R9,999
R10,000 - R14,999
R15,000 - R19,999
R20,000 - R24,999
R25,000 - R29,999
R30,000 - R39,999
R40,000 - R49,999
>=R50,000

7. Error Codes

Error codes will be returned via the TransReplyClass via the errorCode parameter

Codes	Server Error Codes
-201	Not all variables filled in.
-202	Invalid parameters.
-203	Invalid Request Output Format
-204	Error generating results
-205	Invalid Username or Password or Service not activated for this branch.
-206	Internal Error
-207	Invalid Id number supplied.
-208	Invalid income amount supplied. Only support income values up to 9 digits and no cent values.
-209	Cannot find a GMIP value for the supplied Id Number.
-210	Gross Income Amount is not a number.
-211	Net Income Amount is not a number.
-212	Expense Amount is not a number.
-213	Gross Income Amount cannot be negative.
-214	Net Income Amount cannot be negative.
-215	Expense Amount cannot be negative.
-216	Invalid Job Id.
-217	No results found for this ID.
-218	Primary Spouse already linked.
-219	Invalid Primary Spouse Job Id.
-999	Unknown error