Q LINK

CREDIBILITY IN MOTION

BUS-PAY-0009
XML MESSAGE SERVER MANUAL

VERSION:	**7.7**
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DOCUMENT INFORMATION

DOCUMENT PURPOSE:
The purpose of this document is to provide a "How To" document for clients interested in communing Host to Host with the Q LINK system.

DOCUMENT VERSION CONTROL

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1   INTRODUCTION

The XML (extensible Mark-up Language) message server enables communication directly from the clients' system to the Q LINK system, submitting a single transaction at a time. The user usually has a customised program generating XML packets which are then sent to the Q LINK XML Message Server using the HTTPS protocol.

This document describes the standard to be used for this communication, as well as the type of transactions that are supported.

Certain business rules and processes are contained in the Client Procedure Manual and relevant file layout documents, which should be read in conjunction with this document.

1.1   STANDARDISED FORMATS FOR EACH TYPE OF TRANSACTION

There are several XML transactions that can be performed to the Q LINK system. Each of these XML transactions has a specified format, which is defined in detail in the XML Transaction Format Section.

The examples provided in the manual are based on the Q LINK transactions that can also be submitted by means of a batch update file. The Standard Electronic Payroll Deduction Interfaces (SEPDI, MEPDI, LEPDI, FEPDI) utilised for this purpose provide one single standard format that caters for:
*   multiple payrolls; and
*   different industry sectors or company types.

Q LINK will perform the necessary conversion of the update transactions to the format required by the different payrolls. This relieves the client of the burden of managing a variety of file formats and protocols to satisfy different payrolls.

1.2   COMPULSORY AND OPTIONAL FIELDS

Fields that are marked, as 'compulsory' must always be supplied, while the fields marked as 'optional' are either client / payroll specific or may even be required for certain file types or industry types. It is recommended that clients should supply all the fields for which they have data, even where the layout specifies them as "optional".

Fields that are 'optional' which contain no data may be omitted from the XML Packet.

Please refer to the appropriate layout manual for fields that are "optional".

1.3   REGISTRATION PROCESS

Registration for utilising the XML communication method must be done by completing the "QLINK-Additional Services_ " form which can be downloaded from the web. After the completed registration form is received by Q LINK, the following steps will be followed on the test environment:
*   Test XML usernames will be created and communicated to the client.
*   The Institution will be linked to the IP address provided in the Q LINK Additional Services document. This will be the only address/s from which communication may take place.

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- Transactions selected on the registration form will be linked for each of the payrolls selected.
- Testing must commence, for all the selections. If reservations were selected, this must be followed by a batch update file for confirmation of the reservations, or a QADD transaction for confirmation if QADD's are also done via XML.

After successful testing, a formal acceptance letter will be provided, where after the following will take place:

- Live XML usernames will be created and communicated to the client.
- The Institution will be linked to the IP address/s provided in the QLINK-Additional Services_ document, this will be the only address/s from which communication may take place.
- Transactions that were selected on the registration form and successfully tested will be linked for each of the payrolls selected.
- Live submissions may now commence.

2   GENERAL STANDARDS

The following general rules apply to the contents (data) of XML Packets:

2.1   ACCEPTABLE CHARACTER SET

Data that is submitted must adhere to the acceptable ASCII character set (from decimal values 32 through 126, hex values 20 through 7E). Acceptable formatting characters are a carriage return (CR) (decimal value 13, hex value 0D), line feed (LF) (decimal value 10, hex value 0A) and end of file indicator (SUB) (decimal value 26, hex value 1A).

2.2   ALPHABETIC DATA

Alphabetic data must be in uppercase.

Alphabetic fields may only contain the characters A to Z and <space>. NO other characters are allowed, such as ( ) ' , - / etc. This is of particular importance to surnames containing non-alphabetic characters, such as O'BRIEN, HILL-SMITH, NAUDÉ, etc., in which case these characters should be removed or replaced with a <space> or a suitable alphabetical character in the range A to Z.

2.3   ALPHANUMERIC VALUES

Alphanumeric values may contain numeric values from 0-9 and alphabetic characters in the range A-Z (uppercase) and <space>. Alphanumeric values may not contain any special characters or non-numeric characters.
E.g. a point, comma, minus sign, currency symbol, etc.

2.4   NUMERIC VALUES

Numeric values may not contain any non-numeric characters e.g. a point, comma, minus sign, currency symbol, etc. Money values must be entered as numeric values with two decimal places for the cents but no decimal point. For example, enter an amount of R123.45 as 12345 or R50.00 as 5000.

2.5   DATES

Dates must be in the format **CCYYMMDD**.

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3   GENERAL RULES

3.1   TRANSLATION OF CODES

Q LINK will translate relevant codes in the data received from the client to the corresponding codes used by the different payrolls.

3.2   MANIPULATION OF DATA

Q LINK will not change any data unless there is a specific formula that can be applied, which must be agreed upon in the contract/service level agreement between the client and Q LINK.

3.3   ERRORS IN THE HEADER PACKETS

When errors are encountered in the Header packet, i.e. an incorrect username or the TRX tag is invalid, the entire packet will be rejected, and an error packet will be returned.

3.4   EFFECTIVE SALARY MONTH

The effective salary month is the salary month for which transactions are accepted. Only packets with data for the effective salary month (as indicated in the salary month field in the header record) will be accepted. The cut-off dates for accepting transactions for a specific salary month can be obtained from the calendar enquiry function on the web. For some payrolls, notably PERSAL and DOD, the cut-off dates are often in the month prior to the effective salary month.

No backdated transactions will be allowed, except where there are specific rules by the payroll, e.g. Medical Schemes on PERSAL and DOD.

4   INSTITUTION TYPES

This document provides a standard format that applies to various industries or business sectors, referred to as Institution types. Different data elements in a packet are, however, used differently for different Institution types. It is important to take specific note of the sections in the specification where these differences occur. The data elements within these sections are marked with an "*" in the SEPDI/MEPDI/LEPDI Layout Manuals.

INSTITUTION TYPE
Insurance Companies
Pension Funds
Financial Institutions
Educational Institutions
Medical Aid Schemes
Educator unions
Bond institutions

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Trade Unions
General with balance
General without balance
Legal
Subsidised Motor Transport

Wherever rules or specific directives are applicable to a specific institution type only, it will be indicated in the Layout Manuals.

4.1 LAYOUT MANUALS

SEPDI = General deductions, e g Insurance, Unions. Please refer to the SEPDI layout document.

MEPDI = Medical. Please refer to the MEPDI layout document.

LEPDI= Legal. Please refer to the LEPDI layout document.

FEPDI = Financial (Sub Transport). Please refer to the FEPDI layout document.

For ease of reference, short descriptions of each of the Institution types are provided below:

4.2 INSURANCE COMPANIES

Insurance Companies are broadly defined as companies underwriting insurance policies in various categories.   Requirements such as registering with The Association for Savings and Investment South African (ASISA).

4.2.1 PENSION FUNDS

Self-explanatory

4.2.2 FINANCIAL INSTITUTIONS

A financial institution is a company operating in the financial industry providing loans to individuals. Different employers/payrolls may have different rules regarding the granting of deduction facilities to these institutions, i.e. registration at the Financial Services Board.

4.2.3 EDUCATIONAL INSTITUTIONS

Companies granting loans for study loans. Employer specific rules might apply for the granting of deduction codes.

4.2.4 MEDICAL AID SCHEMES

Medical aid schemes that are registered at the Registrar of Medical Schemes.

4.2.5 EDUCATOR UNIONS

Educator Unions where membership fees are deducted by the payroll. Some employers might have internal rules, which apply to the granting of deduction codes to such associations, whereby they require that the association must be approved by industry related controlling bodies.

4.2.6 BOND INSTITUTIONS

Banks or Building Societies providing housing bonds.

4.2.7 TRADE UNIONS

Trade Unions where membership fees are deducted by the payroll.

4.2.8 GENERAL WITH BALANCE

Company not covered by the above institution types having a payroll approved deduction code with a depleting balance.

4.2.9 GENERAL WITHOUT BALANCE

Company not covered by the above institution types having a payroll approved deduction code and where a balance is not used.

4.2.10 LEGAL

The legal layout will be utilised for any legal deductions. This currently includes Emolument Attachment Orders (Garnishees) and will be extended to include administration orders at a later stage.

4.2.11 SUBSIDISED MOTOR TRANSPORT

Institutions that provide a motor finance or motor finance related services to individuals, for premiums are to be deducted from the payroll and related allowances will be instated where applicable.

5 COMMUNICATION SPECIFICATION

HTTPS over TCP is used as transport communication protocol.

Test URLs

Government payrolls
https://govtest.qlink.co.za/cgi-bin/XmlProc

Private Sector payrolls
https://paytest.qlink.co.za/cgi-bin/XmlProc

Production URLs

Government payrolls
https://gov.qlink.co.za/cgi-bin/XmlProc

Private Sector payrolls
https://pay.qlink.co.za/cgi-bin/XmlProc

6 XML TRANSACTION PACKET

The layout for an XML Transaction is constructed from two basic types of sections:
- Header information wrapped in a <HDR> section.
- Only one XML Transaction Request wrapped in a <DATA> section.
- See Annexure A for a list of valid tags according to institution types.

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The construction of these sections is defined in detail in the Header Section Layout, Transaction Section Layout and Rejection/Reply Packet below.

6.1 HEADER SECTION LAYOUT

The Header section is the very first section in the XML packet and consists of the fields specified below:

TAG	DESCRIPTION	REQUIREMENT	DATA TYPE
TRX	Q LINK Transaction	Compulsory	Alphabetic
INST	Client Identifier	Compulsory	Numeric
PAY	Payroll Identifier	Compulsory	Numeric
USER	Username as issued by Q LINK	Compulsory	Alphabetic
PSWD	Password	Compulsory	Alphanumeric
KEY	Client specific transaction key or reference	Optional	Alphanumeric
SALMON	Salary month	Compulsory	Numeric

6.2 DESCRIPTION OF FIELDS

FIELD	DESCRIPTION
TRX	A unique code that identifies the type of transaction **Possible TRX values**: 1 = Employee enquiries 5 = Q LINK Transactions 6 = Communication Test 7 = Request new password 8 = Request next update file sequence number 10= Maintenance Fuel Transactions (QFUL) 11= Maintenance Transactions **Note: Other definitions will be added when the requirement is defined. TRX values 2, 3 and 4 are reserved for consolidation of loans, which has been de- activated at present**
INST	A unique code that identifies the client. Q LINK allocates this code to the client.
PAY	A unique code that identifies the payroll for which the transactions are submitted. Valid payrolls with their identifiers are listed in Payroll identifiers.

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USER	The valid XML username issued by Q LINK. The user and password will be validated as a valid user for the institution and the password expire date checked.
PSWD	The valid password for the username. If the password expires, it must be changed either through the web or via a XML transaction.
KEY	Q LINK does not use the value of the KEY. If a key was entered, the key is returned with the reply of the request and is solely for the use of the client to link the packet sent with the reply received.
SALMON	The effective salary month for which the transaction in the packet is submitted, in the format **CCYYMM**. This date may never be in the past.

6.3 PAYROLL IDENTIFIERS

Below an excerpt from the SEPDI Layout document:

6.4 PAYROLL IDENTIFIERS (HEADER RECORD)

Valid payrolls for which deduction instructions can be sent to Q LINK: As

at: November 2018

Payroll identifier	Payroll	Description
0001	PERSAL	All Government employees except SANDF
0002	DOD	South African National Defence Force (SANDF)
0004	SARS	South African Revenue Services
0005	TELKOM	Telkom SA
0008	SAPO	South African Post Office
0011	TSHWANE	TSHWANE Metropolitan Council
0015	Eskom	Eskom Holdings
0019	Ford	Ford Motor Company of Southern Africa
0020	Mangaung	Mangaung Local Municipality
0041	SASSA	South African Social Security Agency
0042	ESKOM PENS	Eskom Pensioners Fund
0044	TRANSNET	Transnet
0045	RTMC	Road Traffic Management Corporation
0074	Nelson Mandela Bay	Nelson Mandela Bay Municipality

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0087	SOCPEN	SASSA Social Grants
0088	PRASA	PRASA
0089	SAA	South African Airways
0094	BMA	Boder Management Authority
0095	PEP	PEP

6.5 TRANSACTION SECTION LAYOUT

The Transaction Record consists of the fields required for the XML transaction submitted. For XML TRX 5, the format is as specified in the appropriate file layout, i.e. SEPDI/MEPDI/LEPDI/FEPDI/CPEPDI. Please refer to Annexure A for the applicable tags corresponding to the field as described in the layout.

6.6 PACKET FORMAT

XML packets must be in ASCII format, each field wrapped in the appropriate tag as specified in Header Section Layout, Transaction Section Layout and Rejection/Reply Packet sections.

Here is an example of an XML packet:

```
<QLINK>
<HDR>
<TRX>5</TRX>
<INST>1</INST>
<PAY>1</PAY>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
<KEY>XX123YY</KEY>
<SALMON>202006</SALMON>
</HDR>
<DATA>
<TRANTYPE>QADD</TRANTYPE>
<EMPL_NO>60175753</EMPL_NO>
<SURNAME>NDLELA</SURNAME>
<INITIALS>DG</INITIALS>
<IDNO>6606110501085</IDNO>
<REFERENCE_NO>185109477</REFERENCE_NO>
<AMOUNT>15000</AMOUNT>
<BALANCE></BALANCE>
<LOAN_AMNT></LOAN_AMNT>
<START_DATE>20200701</START_DATE>
<END_DATE></END_DATE>
<DEDUCT_TYPE>0010</DEDUCT_TYPE>
<CORR_REF_NO></CORR_REF_NO>

<PERCENTAGE></PERCENTAGE>
<RES_NUMBER></RES_NUMBER>
<NRR_NUMBER></NRR_NUMBER>
<CONS_INSTIT></CONS_INSTIT>
<ERR_CODE></ERR_CODE>
```

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```
<APP_CODE></APP_CODE>
<INTERMEDIARY_ID></ INTERMEDIARY_ID>
</DATA>
</QLINK>
```

6.7   REJECTION / REPLY PACKET

After a successful transaction, the original XML packet is sent back to the requester, with all the necessary data added to the <DATA> section of the packet.

- If the header section was incorrect, an error XML packet will be returned to the requester, as in the example below:

```
<QLINK>
<HDR>
<TRX>5</TRX>
<INST>1</INST>
<PAY>1</PAY>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
<KEY>XX123YY</KEY>
<SALMON>202006</SALMON>
</HDR>
<DATA>
<ERR_CODE>1234</ERR_CODE>
<INTERMEDIARY_ID></ INTERMEDIARY_ID>
</DATA>
</QLINK>
```

- If the transaction was unsuccessful, an error XML packet will be returned to the requester with an appropriate error code in the <ERR_CODE> tag, as in the example below:

```
<QLINK>
<HDR>
<TRX>5</TRX>
<INST>1</INST>
<PAY>1</PAY>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
<KEY>XX123YY</KEY>
<SALMON>202006</SALMON>
</HDR>
<DATA>
<TRANTYPE>QADD</TRANTYPE>
<EMPL_NO>60175753</EMPL_NO>
<SURNAME>NDLELA</SURNAME>
<INITIALS>DG</INITIALS>
<IDNO>6606110501085</IDNO>
<REFERENCE_NO>185109477</REFERENCE_NO>
<AMOUNT>15000</AMOUNT>
<BALANCE></BALANCE>
<LOAN_AMNT></LOAN_AMNT>
```

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```
<START_DATE>20200701</START_DATE>
<END_DATE></END_DATE>
<DEDUCT_TYPE>0010</DEDUCT_TYPE>
<CORR_REF_NO></CORR_REF_NO>
<PERCENTAGE></PERCENTAGE>
<RES_NUMBER></RES_NUMBER>
<NRR_NUMBER></NRR_NUMBER>
<CONS_INSTIT></CONS_INSTIT>
<ERR_CODE>7002</ERR_CODE>
<APP_CODE></APP_CODE>
<INTERMEDIARY_ID></ INTERMEDIARY_ID>
</DATA>
</QLINK>
```

For the list of possible error codes, see the Q LINK standard error codes at *https://www.qlink.co.za/QLHome/index_site.php* Choose a payroll, logon specifying your username and password and then choose Enquiries > Error Code List.

7   COMMUNICATION FAILURE RECOVERY

It is the responsibility of the client to ensure that the necessary procedures are implemented in the event of a communication failure, i.e. no reply packet is received. Depending on the system requirements within the client's system, this can be one of the following:

- Resending the XML transaction packet immediately.
- Storing the XML transactions and resending them at a later stage.
- Submitting the transactions in a batch update file at a later stage.

8   VERIFICATION OF TRANSACTIONS

There are several ways in which the XML transactions can be verified:

- Standard online reports on reservations can be requested via the web through the Reports Scheduler.
- A daily update file, error file and summary report will be generated, similar to the reports that are generated for the batch file process. The daily update file (QXML file) will contain all the XML transactions submitted for the day.

9   XML TRANSACTION FORMAT SECTION

This section will contain the header section and transaction section for each type of transaction, as well as the rejection / reply packet.

Option 1: Employee enquiries

For employee enquiries the TRX field must be supplied as "1" and three employee enquiry request types are available as listed below. For all three scenarios the basic request and reply is the same, but the principal applies that the more information supplied in the request will result in more information supplied by the service.

Request:

Option 1: Employee number is supplied during the request, No ID is supplied during the request or incorrect ID is supplied during the request, reference or no reference:

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```
<QLINK>
<HDR>
<TRX>1</TRX>
<INST>1</INST>
<PAY>1</PAY>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
</HDR>
<DATA>
<EMPL_NO>12510814</EMPL_NO>
<IDNO></IDNO>
<REFERENCE_NO></REFERENCE_NO>
</DATA>
</QLINK>
```

Reply:
```
<?xml version="1.0" encoding="UTF-8"?>
<QLINK>
<HDR>
<TRX>1</TRX>
<PAY>1</PAY>
<INST>1</INST>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
<KEY/>
</HDR>
<DATA>
<EMPLNO>12510814</EMPLNO>
<PAYBUR>NAT</PAYBUR>
<BIRTHDATE>19551014</BIRTHDATE>
<APP_CODE>01</APP_CODE>
<PAY_ORG>P7 LIMPOPO PROVINCE PUBLIC WORKS</PAY_ORG>
<TEMP_IND>P</TEMP_IND>
<RESIGNATION_DATE/>
<EMP_STATUS>0</EMP_STATUS>
<EMP_STATUS_RSN>0</EMP_STATUS_RSN>
</DATA>
</QLINK>
```

Option 2: Employee number, correct ID and no reference number are supplied during this request:
```
<QLINK>
<HDR>
<TRX>1</TRX>
<INST>1</INST>
<PAY>1</PAY>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
</HDR>
<DATA>
<EMPL_NO>22510816</EMPL_NO>
<IDNO>5910140573081</IDNO>
<REFERENCE_NO></REFERENCE_NO>
</DATA>
</QLINK>
```

Reply:
```
<?xml version="1.0" encoding="UTF-8"?>
<QLINK>
```

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```
<HDR>
<TRX>1</TRX>
<PAY>1</PAY>
<INST>1</INST>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
<KEY/>
</HDR>
<DATA>
<EMPLNO>22510816</EMPLNO>
<PAYBUR>NAT</PAYBUR>
<BIRTHDATE>19561014</BIRTHDATE>
<APP_CODE>01</APP_CODE>
<PAY_ORG>P7 LIMPOPO PROVINCE PUBLIC WORKS</PAY_ORG>
<TEMP_IND>P</TEMP_IND>
<RESIGNATION_DATE/>
<EMP_STATUS>0</EMP_STATUS>
<EMP_STATUS_RSN>0</EMP_STATUS_RSN>
<IDNO>5910140573081</IDNO>
<EMP_NAME>SE KUNENE</EMP_NAME>
</DATA>
</QLINK>
```

Option 3: Employee number, correct ID and correct reference number are supplied during the request:

```
<QLINK>
<HDR>
<TRX>1</TRX>
<INST>1</INST>
<PAY>1</PAY>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
</HDR>
<DATA>
<EMPL_NO>80223924</EMPL_NO>
<IDNO>5604065669080</IDNO>
<REFERENCE_NO>77006429</REFERENCE_NO>
</DATA>
</QLINK>
```

Reply:
```
<?xml version="1.0" encoding="UTF-8"?>
<QLINK>
 <HDR>
<TRX>1</TRX>
<PAY>1</PAY>
<INST>1</INST>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
<KEY/>
</HDR>
<DATA>
<EMPLNO>80223923</EMPLNO>
<PAYBUR>NUC</PAYBUR>
<BIRTHDATE>19660406</BIRTHDATE>
<APP_CODE>01</APP_CODE>
<PAY_ORG>P7 LIMPOPO PROVINCE PUBLIC WORKS</PAY_ORG>
<TEMP_IND>P</TEMP_IND>
<RESIGNATION_DATE/>
```

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```
<EMP_STATUS>0</EMP_STATUS>
<EMP_STATUS_RSN>0</EMP_STATUS_RSN>
<IDNO>5604065669080</IDNO>
<EMP_NAME>LM PHAHLAMOHLAKA</EMP_NAME>
<PAY_POINT>824320</PAY_POINT>
<CONTACT_PERSON>THE PAY MASTER</CONTACT_PERSON>
<ADDRESS1>PRIVATE BAG X61</ADDRESS1>
<ADDRESS2>LEBOWAKGOMO</ADDRESS2>
<ADDRESS3/>
<ADDRESS4/>
<POSTAL_CODE>0737</POSTAL_CODE>
<TELEPHONE>0002951000</TELEPHONE>
</DATA>
</QLINK>
```

STATUS

Possible values for employee statuses (EMP_STATUS)

0 = Current
1 = Terminate service
2 = Leave without pay no permission
3 = Leave without pay with permission
4 = Frozen
5 = Cancelled
6 = Transaction barred
9 = Current suspended

REASON

(Possible values for EMP_STATUS_RSN)

0 = current
1 = Service terminated
2 = Absconded
3 = Leave without pay
4 = Reversed
5 = Sick leave without full pay
6 = Suspended
7 = Leave without pay
8 = Current - suspended
9 = No supplementary payment

Option 5 = Q LINK Transactions
Request:
```
<QLINK>
<HDR>
<TRX>5</TRX>
<INST>1</INST>
<PAY>1</PAY>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
<KEY>XX123YY</KEY>
<SALMON>202006</SALMON>
</HDR>
<DATA>
<TRANTYPE>QADD</TRANTYPE>
<EMPL_NO>60175753</EMPL_NO>
```

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```
<SURNAME>NDLELA</SURNAME>
<INITIALS>DG</INITIALS>
<IDNO>6606110501085</IDNO>
<REFERENCE_NO>185109477</REFERENCE_NO>
<AMOUNT>15000</AMOUNT>
<BALANCE></BALANCE>
<LOAN_AMNT></LOAN_AMNT>
<START_DATE>20200701</START_DATE>
<END_DATE></END_DATE>
<DEDUCT_TYPE>0010</DEDUCT_TYPE>
<CORR_REF_NO></CORR_REF_NO>
<PERCENTAGE></PERCENTAGE>
<RES_NUMBER></RES_NUMBER>
<NRR_NUMBER></NRR_NUMBER>
<CONS_INSTIT></CONS_INSTIT>
<ERR_CODE></ERR_CODE>
<APP_CODE></APP_CODE>
<INTERMEDIARY_ID></ INTERMEDIARY_ID>
</DATA>
</QLINK>
```

Reply:
```
<QLINK>
<HDR>
<TRX>5</TRX>
<INST>1</INST>
<PAY>1</PAY>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
<KEY>XX123YY</KEY>
<SALMON>202006</SALMON>
</HDR>
<DATA>
<TRANTYPE>QADD</TRANTYPE>
<EMPL_NO>60175753</EMPL_NO>
<SURNAME>NDLELA</SURNAME>
<INITIALS>DG</INITIALS>
<IDNO>6606110501085</IDNO>
<REFERENCE_NO>185109477</REFERENCE_NO>
<AMOUNT>15000</AMOUNT>
<BALANCE></BALANCE>
<LOAN_AMNT></LOAN_AMNT>
<START_DATE>20020701</START_DATE>
<END_DATE></END_DATE>
<DEDUCT_TYPE>0010</DEDUCT_TYPE>
<CORR_REF_NO></CORR_REF_NO>
<PERCENTAGE></PERCENTAGE>
<RES_NUMBER></RES_NUMBER>
<NRR_NUMBER></NRR_NUMBER>
<CONS_INSTIT></CONS_INSTIT>
<ERR_CODE>7002</ERR_CODE>
<APP_CODE></APP_CODE>
<INTERMEDIARY_ID></ INTERMEDIARY_ID>
</DATA>
</QLINK>
```

Option 6 - Communication Test Request:
```
<QLINK>
<HDR>
<TRX>6</TRX>
```

```
<INST>9999</INST>
<PAY>1</PAY>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
</HDR>
</QLINK>
```

Reply:
```
<QLINK>
<SRC_IP>164.147.0.25</SRC_IP>
<MSG>WELCOME TO THE QLINK XML TRANSACTION SERVER</MSG>
</QLINK>
```

Option 7 - Change Password Request:
```
<QLINK>
<HDR>
<TRX>7</TRX>
<PAY>1</PAY>
<INST>9999</INST>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
<KEY></KEY>
</HDR>
</QLINK>
```

Reply:
```
<QLINK>
<HDR>
<TRX>7</TRX>
<PAY>1</PAY>
<INST>9999</INST>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
<KEY></KEY>
</HDR>
<DATA>
<NEWPSWD>gHaid4lo^<NEWPSWD>
</DATA>
</QLINK>
```

Option 8 - UPDATE SEQUENCE NUMBER REQUEST
Request:
```
<QLINK>
<HDR>
<TRX>8</TRX>
<PAY>1</PAY>
<INST>9999</INST>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
<KEY></KEY>
</HDR>
</QLINK>
```

Reply:
```
<QLINK>
```

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```
<HDR>
<TRX>8</TRX>
<PAY>1</PAY>
<INST>9999</INST>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
<KEY></KEY>
</HDR>
<DATA>
<EXP_UPD_SEQ>133</EXP_UPD_SEQ>
</DATA>
</QLINK>
```

Option 9 - Maintenance Fuel Transactions (QFUL) Request:

```
<?xml version=1.0 encoding=UTF-8?>
<qlink>
<hdr>
<trx>5</trx>
<inst>3226</inst>
<pay>1</pay>
<user>XML_TEST</user>
<pswd>PASS</pswd>
<key></key>
</hdr>
<data>
<fuel_claims>
<trantype>QFUL</trantype>
<empl_no>12345678</empl_no>
<reference_no>TESTREF</reference_no>
<amount>100000</amount>
<surname>SURNAME</surname>
<initials>IN</initials>
<idno>1234567891123</idno>
<start_date>20200301</start_date>
<end_date>20200331</end_date>

<deduct_type>0207</deduct_type>
<department_no>P8</department_no>
<err_code></err_code>
<fuel_allowance>100000</fuel_allowance>
<registration_date>20200301</registration_date>
</fuel_claims>
</data>
</qlink>
```

Reply:

```
<?xml version=1.0 encoding=UTF-8?>
<qlink>
<hdr>
<trx>5</trx>
<inst>3226</inst>
<pay>1</pay>
<user>XML_TEST</user>
```

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```
<pswd>PASS</pswd>
<key></key>
</hdr>
<data>
<fuel_claims>
<trantype>QFUL</trantype>
<empl_no>12345678</empl_no>
<reference_no>TESTREF</reference_no>
<amount>100000</amount>
<surname>SURNAME</surname>
<initials>IN</initials>
<idno>1234567891123</idno>
<start_date>20200301</start_date>
<end_date>20200331</end_date>
<deduct_type>0207</deduct_type>
<department_no>P8</department_no>
<err_code>0</err_code>
<fuel_allowance>100000</fuel_allowance>
<registration_date>20200301</registration_date>
</fuel_claims>
</data>
</qlink>
```

Option 10 - Maintenance Transactions Request:

```
<?xml version=1.0 encoding=UTF-8?>
<qlink>
<hdr>
<trx>5</trx>
<inst>3226</inst>
<pay>1</pay>
<user>XML_TEST</user>
<pswd>PASS</pswd>
<key></key>
</hdr>

<data>
<transport_transaction>
<trantype>QADD</trantype>
<capital_renumeration>10</capital_renumeration>
<empl_no>12345678</empl_no>
<reference_no>TESTREF</reference_no>
<amount>1000</amount>
<surname>SURNAME</surname>
<initials>IN</initials>
<idno>1234567891123</idno>
<start_date>20200301</start_date>
<end_date>20200301</end_date>
<deduct_type>0207</deduct_type>
<department_no>P8</department_no>
<err_code></err_code>
<fixed_interest></fixed_interest>
<fuel_allowance>200</fuel_allowance>
<hundred_percent_bond>0</hundred_percent_bond>
```

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```
<interest_rate>10</interest_rate>
<loan_amount>300000</loan_amount>
<maint_allowance_cat>400000</maint_allowance_cat>
<maint_deduction_cat>500000</maint_deduction_cat>
<maintenance>200</maintenance>
<maintenance_allowance>30000</maintenance_allowance>
<registration_date>20200301</registration_date>
<term>1</term>
</ transport_transaction >
</data>
</qlink>
```

Reply:
```
<?xml version=1.0 encoding=UTF-8?>
<qlink>
<hdr>
<trx>5</trx>
<inst>3226</inst>
<pay>1</pay>
<user>XML_TEST</user>
<pswd>PASS</pswd>
<key></key>
</hdr>
<data>
<transport_transaction>
<trantype>QADD</trantype>
<capital_renumeration>10000</capital_renumeration>
<empl_no>12345678</empl_no>
<reference_no>TESTREF</reference_no>
<amount>1000</amount>
<surname>SURNAME</surname>
<initials>IN</initials>
     <idno>1234567891123</idno>
<start_date>20200301</start_date>

<end_date>20200301</end_date>
<deduct_type>0207</deduct_type>
<department_no>P8</department_no>
<err_code>2002</err_code>
<fixed_interest></fixed_interest>
<fuel_allowance>20000</fuel_allowance>
<hundred_percent_bond>0</hundred_percent_bond>
<interest_rate>10</interest_rate>
<loan_amount>300000</loan_amount>
<maint_allowance_cat>40000</maint_allowance_cat>
<maint_deduction_cat>50000</maint_deduction_cat>
<maintenance>200</maintenance>
<maintenance_allowance>30000</maintenance_allowance>
<registration_date>20200301</registration_date>
<term>36</term>
</ transport_transaction >
</data>
</qlink>
```

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ANNEXURE A - APPLICABLE TAGS PER INSTITUTION TYPE

TAG	SEPDI	MEPDI	LEPDI	FEPDI
<ADDITIONAL_PAYMENTS>				X
<ADMIN_COST>	X		X	
<AMOUNT>	X	X	X	X
<APP_CODE>	X	X	X	X
<ARR_INSTALLMENT>	X	X		
<BALANCE>	X		X	
<CAPITAL_AND_INTEREST>				X
<CAPITAL_REMUNERATION>				X
<CASE_NO>			X	
<COLLECTION_COST>			X	
<CORR_REF_NO>	X	X	X	
<COURT_DATE>			X	
<COURT_NUMBER>			X	
<CURRENT_DEDUCTION>			X	
<CURRENT_INSTITUTION>			X	
<CURRENT_REFERENCE>			X	
<DEDUCT_TYPE>	X	X	X	X
<DEPARTMENT_NO>				X
<EMPL_NO>	X	X	X	X
<END_DATE>	X	X	X	X
<ERR_CODE>	X	X	X	X
<FIXED_INTEREST>				X
<FLAG>	X			
<FUEL_ALLOWANCE>				X
<FUND_CODE_A>		X		
<FUND_CODE_B>		X		
<FUND_CODE_C>		X		
<FUND_CODE_D>		X		

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TAG	SEPDI	MEPDI	LEPDI	FEPDI
<FUND_CODE_E>		X		
<FUND_CODE_F>		X		
<FUND_CODE_G>		X		
<FUND_CODE_H>		X		
<FUND_CODE_I>		X		
<FUND_CODE_J>		X		
<FUND_DETAIL_A>		X		
<FUND_DETAIL_B>		X		
<FUND_DETAIL_C>		X		
<FUND_DETAIL_D>		X		
<FUND_DETAIL_E>		X		
<FUND_DETAIL_F>		X		
<FUND_DETAIL_G>		X		
<FUND_DETAIL_H>		X		
<FUND_DETAIL_I>		X		
<FUND_DETAIL_J>		X		
<HUNDERD_PERCENT_BOND>				X
<IDNO>	X	X	X	X
<INFL_UPD>	X			
<INITIALS>	X	X	X	X
<INT_PAYABLE>	X		X	
<INT_RATE>			X	X
<INT_START_DATE>			X	
<INT_TYPE>			X	
<JUDGEMENT_DEBT>			X	
<LEGAL_COSTS>			X	
<LOAN_AMNT>	X			X
<LOCATION>				X
<LODGEMENT_DATE>			X	
<MAINTENANCE_ALLOWANCE>				X

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TAG	SEPDI	MEPDI	LEPDI	FEPDI
<MAINT_ALLOWANCE_CAT>				X
<MAINT_DEDUCTION_CAT>				X
<MAINTENANCE>				X
<NEW_DEDUCT_TYPE>	X		X	
<NRR_NUBMER>	X			
<OLD_EMPL_NO>	X			
<ORDER_TYPE>			X	
<ORIG_AMT>			X	
<ORIG_CRED_TYPE>			X	
<OUTS_CAPITAL>			X	
<PAY_ DATE>				X
<PERCENTAGE>	X			
<PLAN>		X		
<PRIMARY_DEBT>			X	
<REFERENCE_NO>	X	X	X	X
<REGISTRATION_DATE>				X
<RES_NUMBER>	X			
<ROS_NO>			X	
<START_DATE>	X	X	X	X
<SURNAME>	X	X	X	X
<TERM>			X	X
<TRANTYPE>	X	X	X	X
<INTERMEDIARY_ID>	X			X

INSTITUTION TYPES:

SEPDI = General deductions, e.g. Insurance, Unions.

Please refer to the SEPDI layout document.

MEPDI = Medical. Please refer to the MEPDI layout document.

LEPDI = Legal. Please refer to the LEPDI layout document.

FEPDI = Financial. Please refer to the FEPDI layout document.

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ANNEXURE B – PHP EXAMPLE: HTTPS CALL USING STREAM CONTEXT

```
$packet = <<<MSG
<QLINK>
<HDR>
<TRX>6</TRX>
<INST>9999</INST>
<PAY>1</PAY>
<USER>MyUserName</USER>
<PSWD>MyPassword</PSWD>
</HDR>
</QLINK> MSG;

$postData = http_build_query(array( 'xml' => $packet ) );

$opts = array (
# Note: this *must* be 'http' even for https, since the streams
# wrapper takes care of driving http/https for us depending on
# the scheme:
'http' => array ('method' => 'POST', 'header' => 'Content-type: text/xml',
'content' => $postData ) );

$context = stream_context_create($opts);
$url ='https://govtest.qlink.co.za/cgi-bin/XmlProc';
$result = file_get_contents($url, false, $context);
```

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