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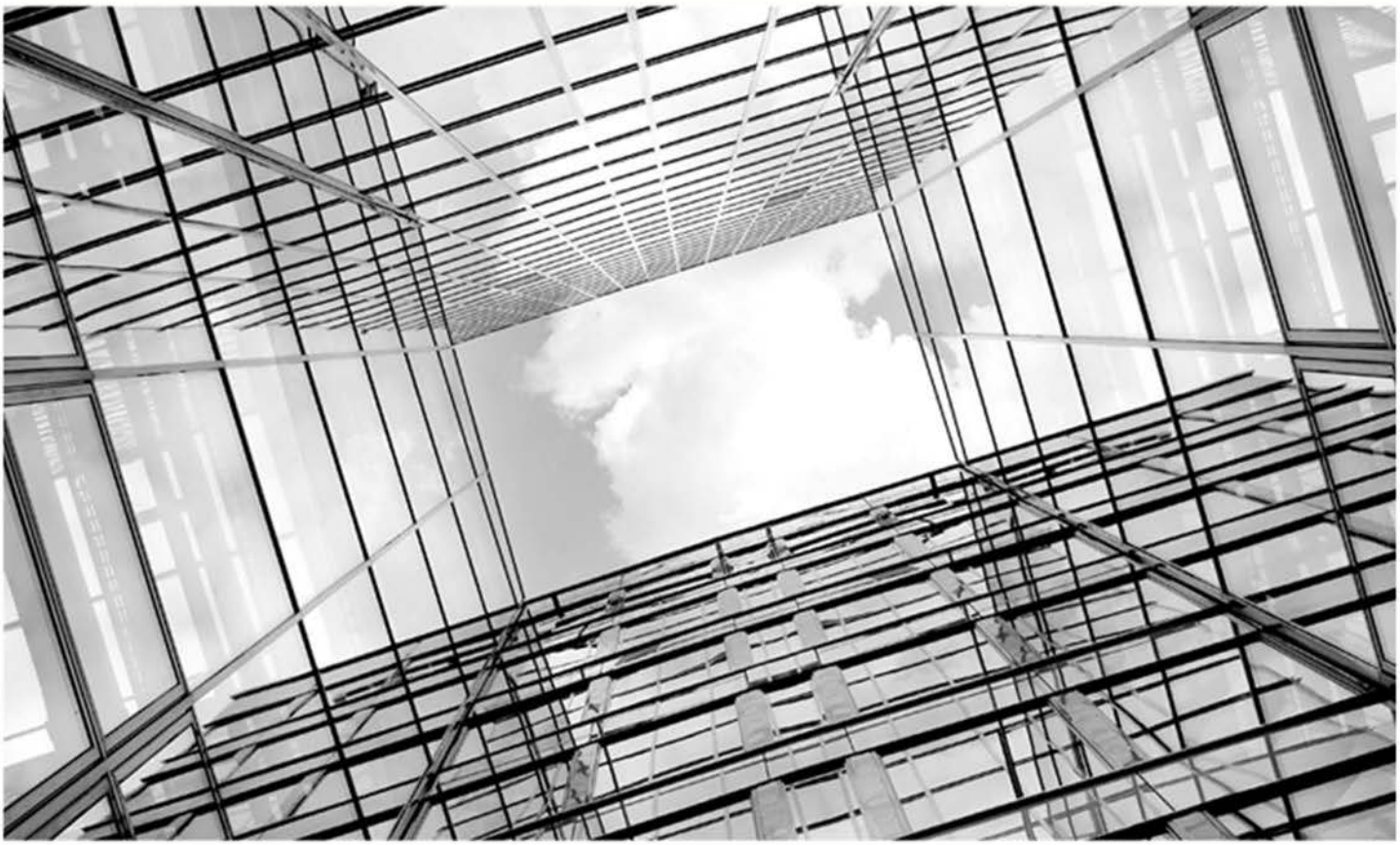

Global PAYplus Version 4.6.7

Queue List Service

Service-Oriented Architecture

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Catalog ID: GPP4.6-S10-02-201708

Version Control

Version	Date	Summary of Changes
1.0		Document created
2.0	Dec 2015	Updated for rebranding
3.0	Apr 2017	Updated with fixes and additional instructions in the Operators table and the Filter Criteria

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1 Introduction

Note: This SOA Guide has not yet been certified for GPP V4.6; therefore, there may be inaccuracies in this document that may require amendments in the future. For more information, please contact your D+H Project Manager.

GPP is a robust payment engine whose workflow emulates the business flow of the bank or other financial institution. Configurable reference data profiles control the sequence of workflow steps and the actions performed in each step.

GPP processes and manages payments. As part of the message processing, GPP stores the list of payments where each payment is associated with one message status (msg sts).

GPP supports three types of related standalone services:

- **QueueListService** - Provides a list of payments which meet a given selection criteria and are filtered by user's restrictions (for example, will include a list of all payments that meet the combined criteria of the input, such as payments with same message status that the user has permissions to view).

- **MessageLoadService** - Loads a specific payment (i.e. the third party application gets all payment details). For more information, see GPP SOA Guide Action on Payments.

- **MessageSubmitService** - Takes a manual action on a specific payment (such as Submit or Cancel). For more information, see GPP SOA Guide Action on Payments.

1.1 Target Audience

This guide describes the QueueListService service and focuses on the required inputs, GPP processing and service outputs. It describes the GPP service that is based on a Service-Oriented Architecture (SOA) concept, which enables third-party applications to interact with GPP.

1.1.1 Service Input Tables Legend

The following table describes the symbols used in the Service Input tables.

Symbol	Description
L	Element level in the file
++++	Shows the element indentation
Int	Integer

2 QueueListService Description

2.1 Overview

When requesting GPP to supply a list of payments, input parameters must be set so that a proper result is generated. For more information, see Input and Output.

2.2 Service Functions

This service only supports a single action: QueueListService. With this service, the user can also search for templates and archived payments.

Notes:

- The service searches for active payments, as a default, by adding the condition P_IS_HISTORY =0 to the query it generates.
- To use the service for searching archived payments, add the condition P_IS_HISTORY =1.
- To use the service for searching Templates add the condition P_IS_HISTORY =2, or in “queue name’ put ‘TEMPLATE_SRCH’.

2.3 Input

These are the input parameters to set so that a proper result is generated:

- Supply the searching criteria.

  For example: get all payments that are of class PAY and in Repair status that are urgent payments.

- Define the list of payment attributes that are required to be returned.

  For example, for the above query, return the following payment attributes: message type, message sub type, Debit and credit MOPs etc.

  The system will return the provided payment attributes in their respective order, and also a list of attributes that are set as ‘default’ in the system.

  - If you did not specify a list of required attributes, the system returns a list of attributes that are set as Default in the system. See Appendix A: List of Attributes for Queue View Results for a relevant list of attributes.
  - If your required attributes are not marked in the system as Available for this service, they will not be returned in the output.

- Define the **Sort by** criteria for the resulting response (up to 3 criteria).

2.3.1 Input Table

The **L** column lists the element level that the parameter appears in the file. The + indicators in **Tag Name** column denote the level number.

Parameter	Tag Name	L	Format	Comment
Header	**Header**	**0**		**Request Header**
Fundtech header	+FndtHeader	1		Service Header
Credentials	++Credentials	2	String {1..1}	Credentials

Parameter	Tag Name	L	Format	Comment
User ID	+++UserID	3	String {1..1}	A valid GPP user (see Section 3.3). User name is case sensitive. Use the exact user name. The user must have the following credentials: User exists, and active (status = AC) and not logged in (LOGGED_IN <> 2)
User Entitlement code	+++Role	3	String {1..1}	A valid GPP entitlement profile (see section 3.3). Credentials check: The entitlement exists and assigned to the login user. Also, where applicable, the relevant access permission is granted.
Body	Body	0		Service Body
Request details	+QueueListRequest	1	{1..1}	Request Details
Audit user	++UserID	2	String {0..1}	Audit user only. This input is not being validated. Where applicable, this would be used as the audit user
Columns Required	++ColumnsRequired	1	String {0..n}	The list of payment attributes that are required to be returned (for more details, see Appendix A)
Message Status	++QueueName	2	String {0..1}	Either Queue Name or FilterConditions must be specified. Specifies one of the following options: If Queue Name is empty the service will return payments from all statuses as per Filter Condition(s). Any MSG_STS from STATUSES table or customized filter name will return payments from only that status as per Filter condition(s). 'TEMPLATE_SRCH' Is not a queue name but when using it here, the service will return a list of payments. 'TRN_SRCH' same as Queue Name is empty the service will return payments from all statuses as per Filter Condition(s)
Page Direction	++PageDirection	2	String {1..1}	A technical indication where the number of results is greater than the number of results allowed per page and there is more than one page to show. The page direction provides an indication of whether the result pages should be paged forward F (First) or 'R' (rear) or 'N' (Next) or 'P' (Previous). Default value is F.
Message ID	++MID	2	String (length 16) {0..1}	When the service response holds more results than given by the page size attribute, the MID feature is used in

Parameter	Tag Name	L	Format	Comment
				conjunction with PageDirection to support page navigation. For example: The last MID from previous result set should be passed to the next service invocation with PageDirection=N. The first MID from previous result set should be passed to next service invocation with PageDirection=P.
Page Size	++PageSize	2	Int {1..1}	Specifies number of payments to be returned in a single service call. This is the equivalent of system option WEBMAXQ
Sort order	++SortOrder	2	Text {0..3}	The sort order for up to three sorting criteria (Logical Fields names). If requiring a descending sort DESC should be added as well at end of list of sorting criteria fields
Mode	++Mode	2	String {1..1}	Specifies the query mode. The only query that should be used is 'SHOW' which indicates a read-only query mode.
Filter Option	++FilterOption	2	String {0..1}	N/A/ default "NONE"
Filter Conditions	++FilterConditions	2	{0..n}	Specifies the list of query conditions. See Filter Criteria. Is mandatory if Queue name was not specified.
Condition line number	+++cond lineNumber	3	Int {1..1}	Specifies the condition number starting at zero.
First operand	+++leftVal	3		Specifies the first operand criterion type and value. Example: <ns3:leftVal CT="Field" value="P_MSG_STS"/> The quotation marks are mandatory to the input.
Operator	+++op	3	See the Operators Table.	Condition operator Examples: <ns3:op>></ns3:op>(Greater Than) <ns3:op><</ns3:op>(Lower than) More examples are in the Operators table.
Second operand	+++rightVal	3		Specifies the second operand criterion to compare with the first one. Define the content type than its value. Example: <ns3:rightVal CT="Value" value="REPAIR"/> </ns3:cond>

Parameter	Tag Name	L	Format	Comment
				<ns4:leftVal CT="Field" value="P_DBT_ACCT_NB"/> <ns4:op>In</ns4:op> <ns4:rightVal CT="InList" value="2500201,8552502"/>

2.4 Processing

The following processing takes place:

- The input parameters are validated and a query is built.
- If 'queue name' is defined, the service adds a filtering criteria with that value to the query, and the service adds a criteria for active payments P_IS_HISTORY =0 to the query, as default. See Service Functions to learn more about other processing scenarios.
- The service adds the filtering criteria to the query, if defined.

2.4.1 Filter Criteria

The filtering criteria consist of one or more conditions with the following structure:

- Define the condition number (cond lineNumber) starting with zero, then define the first field or function to match with (leftVal) where the CT (i.e. criterion) may be 'Field' or 'Function', then the CT value (value) specifying a logical field ID, the logical field ID must come between quotation marks.
- Define the second field or function to match with (rightVal) where the CT (i.e. criterion) may be 'Field', 'Function' or 'InList' and value is the value to compare to. The value must come between quotation marks.

This table lists applicable operators available for use between the leftVal and RightVal.

Note: Operators are listed in mixed case and are case-sensitive. The column **Operator in XML format** represents the correct format of the operator in the service input.

2.4.2 Operators Table

Operator	Operator in XML format	Comment
<	<	Left field value is smaller than right field value
<=	<=	Left field value is smaller or equal to right field value
<>	<>	Left field value not equal to right field value
=	=	Left field value not equal to right field value
>	>	Left field value is greater than right field value
>=	>>=	Left field value is greater or equal to right field value
Concatenate	Concatenate	Concatenating left and right field values
Contains	Contains	Left field value contains the value in the right field. Anything before or after the specified string
Does Not Contain	Does Not Contain	Left field value does not contain the value defined in the right field

Operator	Operator in XML format	Comment
In	In	Left field value in (multiple values specified in right fields)
Not In	Not In	Left field value not in (multiple values specified in right fields)
Is	Is	Empty
Is Not	Is Not	Empty
Like	Like	Left field value is like right field value. Should be used with a % symbol that indicates whether the like is after the string, in the string or before it. Example: for the word BANK and anything afterwards, use BANK%. For the word BANK and what prefixed it use %BANK and for the usage of anything before or after (same as contains) use %BANK%
Not Like	Not Like	Left field value is not like right field value
In Template Set	In Template Set	'In Template Set' is a list of template names that are associated with a specific customer and that were set together under this template set name. Selects the template code (TEMPLATE_MID) from TEMPLATE_SET_ASSIGN table where the template is active (TEMPLATE_SET_ASSIGN.REC_STATUS = 'AC') and the template belongs to 'Orgnl initiating party' *This operator can only be used in conjunction to queue name =TEMPLATE_SRCH, or P_IS_HISTORY =2.
In Value List	In Value List	The Value List is a list of possible values specified by the user. This value allows the user to specify the name of the list for a match. If the attribute value is found in any of the value lists, then this should be a true condition.
Not In Value List	Not In Value List	This operand allows an exclusion of a Value List.
Like Value List	Like Value List	This operand only requires that the attribute value is found within one of the Value List attributes and allows only a partial match. Use the % symbol to specify the matching pattern (i.e. whether the match is with whatever comes after or before the specified string.
Not Like Value List	Not Like Value List	Allows an exclusion to the Like Value List.
Starts with	Starts with	Left field value starts with right field value. Same as usage of Like with % symbol as the string prefix.
Ends with	Ends with	Left field value ends with right field value. Same as usage of Like with % symbol as the string suffix.

2.4.3 Permission

The request must include a valid user name and a valid user entitlement. The service validates that the user from User ID field has the entitlements to view the list of payments requested (i.e. user has permission to view payments in the requested queue name) by assessing the user entitlement different classes.

2.5 Output

- A list of column headers (i.e. the name of the attribute, its position and its data type)
- A list of payments that match the search criteria, with their specific column values

For example, the first row below will have a set of results (for example, **message type** is the first column of type STRING, **message sub-type** is the second column of type STRING etc.) The rest of the values are matching payments and their values according to column position:

Message type	Message sub-type	Debit MOP	Credit MOP
103		BOOK	SWIFT
202	COV	TARGET2	BOOK
103		BOOK	TARGET2

A list of payments meeting a given selection criteria and filtered by user's restrictions.

The attributes returned for each payment include:

- Default attributes
- A list of additional pre-defined attributes (where required)

Returned fields can be filtered by the Return Attribute list.

2.5.1 Output Table

Parameter	Tag Name	L	Format	Comment
Body	Body			
Queue List Response	QueueListResponse	0		
Column	Column	1	{0..n}	Specifications of the outgoing attributes. It provides the name, location position and specification of every resulting column
Column Name	+Name	2	String	A LOGICAL_FIELD_ID
Column Position	+Position	2	Int	Column position (where not applicable, sets to -1)
Data Type	+DataType	2	String	Possible values: STRING, DATE_TIME, DATE, DECIMAL
Row	Rows	1	{0..n}	Each row represents a payment
Row number	+RowID	2	Int	Starting with 1 where there is a query result
Value	++Field	3		As specified in the appropriate column data type. Contains the value of the field for the specific payment. The value is according to the column data type.

Parameter	Tag Name	L	Format	Comment
				Possible values: STRING, DATE_TIME, DATE, DECIMAL
Service result	WsResult	1	Int & String	Specifies whether an error occurred during the service initiation or any error that prevents a proper result to be shown. Returns zero (0) when the service ended as required or an error code from JOURNALMESSAGES table where an error occurred. Where an error occurs, Wsresult description field shows the error text.

2.6 Example

2.6.1 QueueListService Request

The following example is a request to retrieve the current status of a specific payment message.

```
<?xml version="1.0" encoding="UTF-8" ?>
 <soapenv:Envelope xmlns:prul="http://Fundtech.com/prule-metadata-dto.xsd"
xmlns:que="http://fundtech.com/SCL/QueueListService"
xmlns:soapenv="http://www.w3.org/2003/05/soap-envelope"
xmlns:stat="http://fundtech.com/SCL/StaticDataCommonTypes">
 <soapenv:Header>
 <q2:FndtHeader xmlns:q2="http://fundtech.com/SCL/CommonTypes">
 <q2:credentials>
  <q2:UserID>POCIDS</q2:UserID>
  <q2:Role>POC</q2:Role>
  </q2:credentials>
  </q2:FndtHeader>
  </soapenv:Header>
 <soapenv:Body>
 <que:QueueListRequest>
 <stat:header>
  <stat:UserID>POCIDS</stat:UserID>
  </stat:header>
 <que:ColumnsRequired>
  <que:column>P_MSG_STS</que:column>
  </que:ColumnsRequired>
  <que:QueueName>TRN_SRCH</que:QueueName>
  <que:PageDirection>F</que:PageDirection>
  <que:MID />
  <que:PageSize>10</que:PageSize>
  <que:Mode>SHOW</que:Mode>
  <que:FilterOption>NONE</que:FilterOption>
 <que:FilterConditions>
 <prul:cond lineNumber="1">
  <prul:leftVal CT="Field" value="P_MID" />
  <prul:op>=</prul:op>
  <prul:rightVal CT="Value" value="124JG03396DY0D69" />
  </prul:cond>
  </que:FilterConditions>
  </que:QueueListRequest>
  </soapenv:Body>
  </soapenv:Envelope>
```

2.6.2 QueueListService Response

The following example is a response for this service.

```
 <soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
 <soap:Body xmlns:ns1="http://fundtech.com/SCL/QueueListService">
 <que:QueueListResponse xmlns:que="http://fundtech.com/SCL/QueueListService">
 <que:Columns>
  <que:Column Name="P_MSG_STS" Position="0" DataType="STRING" />
  <que:Column Name="P_TIME_STAMP" Position="-1" DataType="STRING" />
  <que:Column Name="P_CREATE_DT" Position="-1" DataType="DATE_TIME" />
  <que:Column Name="P_RETRY_COUNT" Position="-1" DataType="NUMBER" />
  <que:Column Name="P_OFFICE" Position="-1" DataType="STRING" />
  <que:Column Name="P_SLA_NOTIFY_DATETIME" Position="-1" DataType="DATE_TIME" />
  <que:Column Name="P_CDTR_ID_KEY" Position="-1" DataType="STRING" />
  <que:Column Name="P_ACK_STS" Position="-1" DataType="STRING" />
  <que:Column Name="P_CDT_MOP" Position="-1" DataType="STRING" />
  <que:Column Name="P_INIT_SRC_ID" Position="-1" DataType="STRING" />
  <que:Column Name="P_DBT_MOP" Position="-1" DataType="STRING" />
  <que:Column Name="P_TEMPLATE_CD" Position="-1" DataType="STRING" />
  <que:Column Name="P_DEPARTMENT" Position="-1" DataType="STRING" />
  <que:Column Name="P_MSG_SUB_TYPE" Position="-1" DataType="STRING" />
  <que:Column Name="P_MSG_TYPE" Position="-1" DataType="STRING" />
  <que:Column Name="P_TEMPLATE_TYPE" Position="-1" DataType="STRING" />
  <que:Column Name="P_TEMPLATE_NM" Position="-1" DataType="STRING" />
  <que:Column Name="P_MID" Position="-1" DataType="STRING" />
  <que:Column Name="P_PREVIOUS_MSG_STS" Position="-1" DataType="STRING" />
  <que:Column Name="P_INSTR_ID" Position="-1" DataType="STRING" />
  <que:Column Name="P_PAY_BY_DATETIME" Position="-1" DataType="DATE_TIME" />
  </que:Columns>
 <que:Rows>
 <que:Row RowID="1">
  <que:Field>COMPLETE</que:Field>
  <que:Field>2012-04-19 16:03:39.710</que:Field>
  <que:Field>2012-04-19T16:03:39-05:00</que:Field>
  <que:Field />
  <que:Field>ID1</que:Field>
  <que:Field />
  <que:Field />
  <que:Field />
  <que:Field>IDSKN</que:Field>
  <que:Field />
  <que:Field>BOOK</que:Field>
  <que:Field />
  <que:Field>IDD</que:Field>
  <que:Field />
  <que:Field>Pacs_008</que:Field>
  <que:Field />
  <que:Field />
  <que:Field>124JG03396DY0D69</que:Field>
  <que:Field>(RECEIVED)</que:Field>
  <que:Field>117257312871489</que:Field>
  <que:Field />
  </que:Row>
  </que:Rows>
 <com:WsResult xmlns:com="http://fundtech.com/SCL/CommonTypes">
  <com:returnCode>0</com:returnCode>
  </com:WsResult>
  </que:QueueListResponse>
  </soap:Body>
  </soap:Envelope>
```

2.7 Errors

For information about error codes for this service, see General Errors

3 General Errors

3.1 Generic Errors

This table lists the Generic Errors.

Code	Description	Notes
40205	Web Service login failed	
28686	Error while retrieving user entitlement data	
28560	An error has occurred while trying to perform this action	
28561	User has no permission to perform this action.	
40087	Service [service name] failure	
40071	[Office name] is not a valid Office	Office was not found in cache
40127	Service [service name] failure, (last step: [Last step name])	

3.2 Static Data Related Error Codes

This table lists the Static Data Related Errors.

Code	Description	Notes
77787	Input parameter(s) [missing parameter names] is missing	An input parameter is missing.

Appendix A: List of Attributes for Queue View Results

This section provides information about default attributes and other elements required for Queue View results:

- The list of default Output attributes
- If ColumnsRequired element in the input is not provided (i.e. empty), then GPP returns all logical fields where :
  - MUST_HAVE_COLUMN_IND <> 0
  - DEFAULT_IN_Q_VIEW <> 0
- According to the following query:
  - Select T.FIELD_LOGICAL_ID from LOGICAL_FIELDS t where .MUST_HAVE_COLUMN_IND <> 0 or T.DEFUALT_IN_QVIEW <>0
- All MUST_HAVE logical fields ID with COLUMN_IND <> 0 and DEFAULT_IN_Q_VIEW <> 0

This table lists the Logical Fields ID: COLUMN_IND <> 0 and DEFAULT_IN_Q_VIEW <> 0.

Columns Required FIELD_LOGICAL_ID to use in the input	Description
P_ACK_STS	Acknowledgement Status
P_CDT_MOP	Credit method of payment (MOP)
P_COUNTRY_CODE	Country code
P_CREATE_DT	Message create date
P_DBT_MOP	Debit method of payment (MOP)
P_DEPARTMENT	Department
P_INSTR_ID	Instruction ID (SWIFT tag 20 Sender's Reference)
P_MID	Internal Message ID
P_MSG_STS	Message internal status
P_MSG_SUB_TYPE	Message sub type
P_MSG_TYPE	Message type
P_OFFICE	Office
P_PAY_BY_DATETIME	Pay By Date
P_PREVIOUS_MSG_STS	Previous Message Status
P_PROC_DT	Message processing date
P_RELEASE_DT	Release date
P_RETRY_COUNT	Retry count
P_RTR_QUOTE_REQ_ID	FX RTR quote request ID holds the ID that was generated in response to the request to FXT
P_RTR_VALID_UNTIL_DATETIME	RTR Valid until date time
P_SLA_NOTIFY_DATETIME	Set by the soonest of cut-off time and pay-by-time fields from SLA profile. This is then being used by the Alerts and Notifications process
P_TEMPLATE_CD	Template Code
P_TEMPLATE_NM	Template name

Columns Required FIELD_LOGICAL_ID to use in the input	Description
P_TEMPLATE_TYPE	Template type. P for Partial repetitive, F for Fully Repetitive, S for Standing Order, A for Associated (standing order)
P_TIME_STAMP	Time Stamp
X_ORGNL_INTRBK_STTLM_AMT	Settlement Amount of orig payment
X_ORGNL_INTRBK_STTLM_CCY	Settlement Currency of orig payment
X_STTLM_AMT	Settlement (SWIFT tag 32A)- Amount
X_STTLM_CCY	Settlement (SWIFT tag 32A)- Currency
X_STTLM_DT_1B	Settlement (SWIFT tag 32A)- Date

The list of default Output attributes that will be added to the provided fields, specified in ColumnsRequired field of the input.

GPP returns all logical fields where:

- They are provided, if their AVAILALBLE_FOR_QVIEW logical fields value is <> 0
- All fields MUST_HAVE_COLUMN_IND <> 0
- All MUST_HAVE logical fields ID with COLUMN_IND <> 0

This table lists the Logical Fields ID: COLUMN_IND <> 0.

ColumnsRequired FIELD_LOGICAL_Id to use in the input	Description
P_ACK_STS	Acknowledgement Status
P_CDT_MOP	Credit method of payment (MOP)
P_CREATE_DT	Message create date
P_DBT_MOP	Debit method of payment (MOP)
P_DEPARTMENT	Department
P_INSTR_ID	Instruction ID (SWIFT tag 20 Sender's Reference)
P_MID	Internal Message ID
P_MSG_STS	Message internal status
P_MSG_SUB_TYPE	Message sub type
P_MSG_TYPE	Message type
P_OFFICE	Office
P_PAY_BY_DATETIME	Pay By Date
P_PREVIOUS_MSG_STS	Previous Message Status
P_RETRY_COUNT	Retry count
P_SLA_NOTIFY_DATETIME	Set by the soonest of cut-off time and pay-by-time fields from SLA profile. This is then being used by the Alerts and Notifications process
P_TEMPLATE_CD	Template Code
P_TEMPLATE_NM	Template name

ColumnsRequired FIELD_LOGICAL_Id to use in the input	Description
P_TEMPLATE_TYPE	Template type. P for Partial repetitive, F for Fully Repetitive, S for Standing Order, A for Associated (standing order)
P_TIME_STAMP	Time Stamp

3.3 List of System Users

GPP users are specified in the System User menu, or in DB in USERS table. See Online Help for additional details.

3.4 List of System Entitlements

GPP users are associated with an appropriate entitlement. Entitlement is a profile in GPP specified in the Entitlement menu. See Online Help for additional details.

3.5 Database Maintenance Queries

This table lists the Database Maintenance Queries.

Table	Value	Comment
SYST_PAR	Select * from syst_par t where t.param_name like '%WEBMAXQ%'	System parameter WEBMAXQ maintenance
PRULES_OPERATORS	Select * from prules_operators t where t.visible_in_list like '1'	See the Operators table.
STATUSES	Select * from statuses t	A list of statuses that may be requested in the query
LOGICAL FIELDS	Select t.field_logical_id,t.description from logical_fields t where t.must_have_column_ind <> 0 or t.default_in_qview <>0	The list of default Output attributes, If ColumnsRequired field if the input is not provided (Empty).
LOGICAL FIELDS	Select t.field_logical_id,t.description from logical_fields t where t.must_have_column_ind <> 0	The list of default Output attributes that will be added to the provided fields specified in ColumnsRequired field of the input.

Appendix B: Glossary

The following table describes the terms used in this document.

Term	Description
GPP	Global PAYplus
Financial Institution	The term 'Financial Institution' (FI) covers more of our customer base than using the term 'Bank' (e.g., AMEX, which is not a bank). Use the term Bank as an example. Use both FI and Bank consistently throughout a document.
Logical Field ID	Messages attribute description. With GPP concept of logical fields that are associated to different XML paths, it is possible to define a message attribute, its type, its display name and other attributes. For example, the 'Sttlm amt' describes the settlement amount of the outgoing payment. The logical field ID is used behind the scenes and is unique (X_STTLM_AMT)
MID	Message ID. A unique identifier generated by GPP for each Created/Incoming payment.
MOP	Method of Payment
PACS	Payments Clearing and Settlement
PAIN	Payment Initiation
SOA	Service-Oriented Architecture