FINASTRA

Global PAYplus

Payment Initiation

Business Guide

Version Control extension

Version	Date	Summary of Changes
1.0		Document Creation
1.1		Changed section on phrasing, Updated Message Filters, Updated parsing and Set Basic Attributes Service sections
2.0		Updated section Department and Entitlements. Updated sections Parsing, Reasons for Authex, Reasons for Repair and Reasons for Backout.
2.1		Updated section SWIFT parsing errors and AUTHEX routing.
3.0	November 2015	Document updated for rebranding
4.0	September 2018	Document rebranded to Finastra template

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1 Overview

1.1 Introduction

Payments can enter Global PAYplus (GPP) either electronically or manually. To be able to analyze the payments and perform the relevant required business flow, the payment has to be enriched with some attributes. Payment attributes are constructed from the standard attributes (whether it is ISO or SWIFT base attributes), customized message fields that are defined by bank/FI, and by Fundtech extension attributes, which are attributes that are required for payment processing but are not sent out with the payment ISO attributes. For example, the Office attribute helps us associate every payment with a financial institution and its respective business logic (remember that GPP is a multi-offices system that may hold more than one office at the system level).

This document covers the payment initiation phase. This phase groups together, logically, several processing steps (and different services) that define the fundamental and basic message attributes. All of these attributes are Fundtech proprietary attributes but important attributes for GPP processing.

The steps are determined by the selected orchestration. The order below is specified by the 'High Value' orchestration:

1. Parsing: This phase includes the parsing of message information into the relevant message tables in GPP.

2. Set Basic Attributes: This phase (service name: SetBasicPropertiesService) performs the following message attributes derivation:

    a. Assign a unique ID (MID) to the payment

    a. Define the payment office (Pmt office) attribute to allow proper selection of the business rules (i.e. all office related business rules)

    b. Define the message create date (Create dt)

    c. Define the Debit Method of Payment (Dbt MOP)

3. Define the message type

4. **STP Validation**: Customized pre-defined payment validations. See 'GPP Business Guide STP Validation.doc' for details). Uses the 'STPRulesService' service.

5. **Department**: Define the payment department

6. **Business Area**: Payment attribute

7. **Product Code**: Payment attribute

    Note: The Assessment of the above mentioned business rules is done by invocation of 'MapPaymentInfoUsingRulesService' in each one of the business rules.

8. Rate usage for base amount conversion: Converts the payment to its equivalent base amount. Base amount can later be used in the business rules as a condition. The payment base amount is accumulated at the payment status tree view. Uses the 'CurrencyConversionService'.

9. Message filter: A business rule that enables stopping the payment from entering the workflow and being processed. Uses the 'MessageFilterService'.

10. Compliance check: A business rule that defines whether the payment needs to go to the compliance check to ensure the received information is valid (i.e. before the payment is enriched by the system). Uses the 'MapPaymentInfoUsingRulesService'.

11. Repair and enrichment: Allows payment attributes enrichment. Uses the 'DataManipulationService'.

12. Duplicate check: Ensures a similar payment was not received before processing a duplicate payment. Uses the 'MatchingCheckService'

13. Office SLA: Ensures whether the payment may be associated with a specific SLA profile (where the immediacy and priorities may be defined), as early as possible in the payment processing flow. Uses the 'MapPaymentInfoUsingRulesService'.

1.2 High Level Schema

Payment Initiation Process in the 'High Value' Orchestration
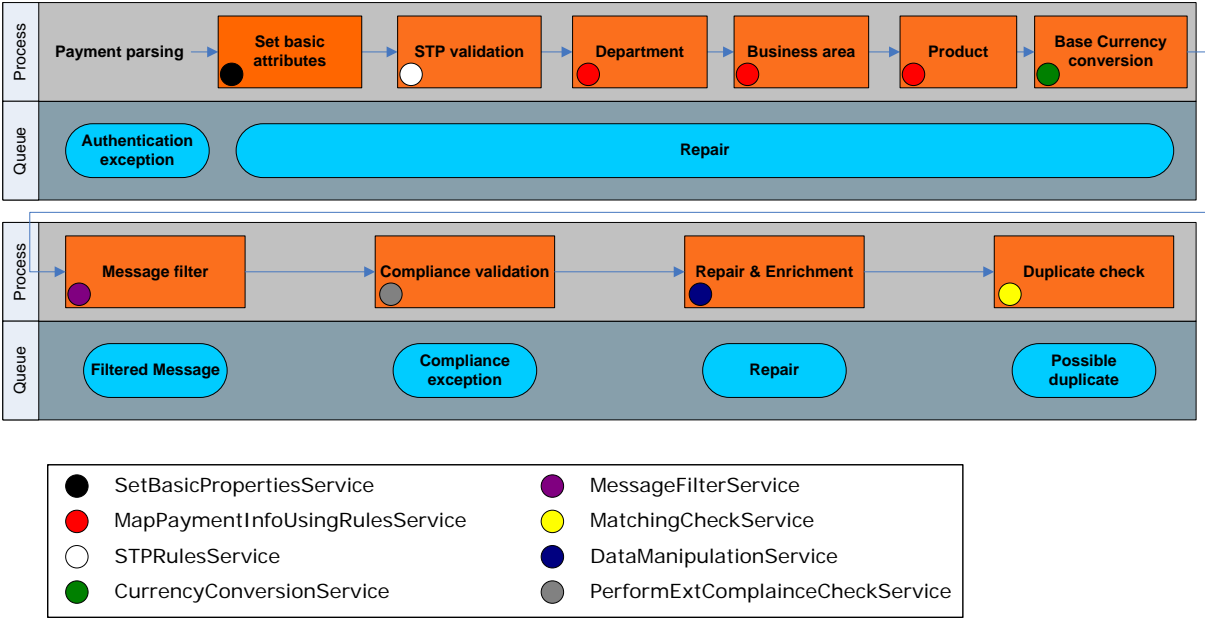
1.3 Target Audience

This document describes the Payment Initiation workflow. It is designed for business analysts and system administrators who need to set up and configure this feature. It is also of value to anyone who wants to know more about how this feature is implemented.

2 Processing

2.1 Payment Initiation Workflow

Payment received

Payment parsing

Failed parsing → **Authentication exception**

User action
* Cancel payment

Passed parsing

Reference Data
Office
Create date
Debit MOP
Display Message type

Set basic attributes

Business rule: Business Area
Generate an error where no matching
rule found & set payment to repair

Business area

Business rule: Department
Use DEF_DEP system parameter
where no matching rule found.

Department

Business rule: Debit and Credit
transaction code

Transaction code

Error found

Business rule: Prioritization

Priority

Business rule: Product Code
Generate an error where no matching
rule found and set payment to repair

Product

Business rule: STP validation

STP validation

Business rule: Product Code
Rate use for base amount conversion

Base Currency conversion

User action
* Submit payment
* Cancel payment

Repair

Message filter

Filter applies → **Filtered Message**

User action
* Release payment
* Cancel payment

No filter

Release

Hold time

Reference Data
Compliance
Validation Rule

No limits

Time hold

User action
Force

Compliance validation ← Force/time reaches

Possible hit → **Compliance exception**

User action
No hit
Block funds

Repair & Enrichment

Reference Data
Matching Check Profile
Matching Algorithm Rule
Matching Index Rule

Duplicate check

Possible duplication found → **Possible duplicate**

User action
Cancel payment (duplicate)
Not duplicate

Not duplicate

End ← Not duplicate

2.2 Parsing

The payment parsing includes the required mapping from the payment as received into GPP message field's attributes. This process is hard coded and has no user interface.

When a SWIFT message is received, GPP performs parsing to validate the format and contents of the message.

- If parsing fails, GPP moves the message to the Authentication Exception (AUTHEX) queue, where the user can view and manually cancel the payment. For a list of errors, see Reasons for Authex.

- If parsing passes, GPP continues to process the payment.

2.3 Set Basic Attributes Service

This step includes the derivation of important & fundamental message attributes. The unique message ID (MID) is required to be able to fetch a payment from the message tables. The office (and later on, the department) attribute help define GPP processing entity. The office holds its own unique system parameters, rules and profiles and therefore affect payment attributes differently than other offices under the same GPP application.

This service includes the following steps:

Attribute Name (Logical ID)	Processing Description
Create dt (P_CREATE_DT)	Assign a create date to the payment by taking the local office business date time If value date (X_STTLM_DT_1B) is empty, set it to be the same as create date. If processing date (P_PROC_DT) is empty, set it to create date
Dbt MOP (P_DBT_MOP)	Define Debit MOP by the following logic: If FIN copy is provided in payment (attribute: Orgnl clr Sys ID [OX_CLR_SYS_ID] then find the MOP that is associated with this FIN copy and set it as the Dbt MOP. If payment source (attribute: Pmt source [P_PMNT_SRC]) is set to 'FEEDER' then set Dbt MOP = BOOK All other cases (OX_CLR_SYS_ID is empty & payment source isn't 'FEEDER') set Dbt MOP = SWIFT
Display Msg tp (P_DISPLAY_MSG_TYPE)	Display message type takes the value of Msg tp (P_MSG_TYPE)
MID (P_MID)	If MID is not yet determined, generate Message ID.
Msg class (P_MSG_CLASS)	Message class is derived from the MSG_TYPES.MSG_CLASS table. One of the following: AF: Anticipated Funds DD: Direct Debit NAC: Non-Accounting OPI: Outgoing Payment Instruction - Direct OSN: Outgoing Settlement Notification - Cover PAY: Pay PI: Incoming Payment Instruction SN: Incoming Settlement Notification
Pmt Office (P_OFFICE)	If office attribute was not provided derive the office by the following logic: Take the payment receiver (either instructed agent BIC 8 +XXX

Attribute Name (Logical ID)	Processing Description
	[X_INSTD_AGT_BIC_2AND] or NCC - X_INSTD_AGT_ID_2AND) and try to fetch its party code in office profile (BANKS table).
	If cannot perform this, then fetch it from the provided account number, if exists in the system table SWIFT_ID (where payment identifiers are stored)
	If cannot be found, Set the default office (system parameter DEF_OFFICE) & Set payment to repair with a proper error.

2.3.1 Generate MID

The MID is a unique 16-character identifier for each message that is generated by GPP.

It is formed by concatenating the following character strings:

- 2-character Year (last 2 characters of the year) +

- 1 character (Convert to Base36) of Month +

- 2 characters of Day of month +

- 1 character (Convert to Base36) of Hour {using a 24 hour clock} +

- 2 characters for Minute +

- 2 characters for Second +

- 2 characters (Convert to Base36) for Millisecond +

- 4 characters for Server sequence number

Example: 10801N3428AO0448 where:

- 10 is the 2 characters year (2010)

- 8 is the base36 month (August in this case)

- 01 is the day of month (first of August in this case)

- N is the base36 hour

- 34 is the base36 Minute

- 28 is the base36 Second

- AO is the base36 Millisecond

- 0448 is the server sequence number

Note: The MID is an internal, technical database reference that is used to uniquely identify a message in the database and to tie all its elements together.

The structure of the MID may be changed by D+H without prior notice. No application, report, procedure, etc, may assume that the structure is as documented here.

2.3.2 Reasons for Authex

GPP moves the payment to the Authentication Exception (AUTHEX) Queue when parsing fails. Below is a partial list of reasons why parsing may fail:

- SWIFT Parsing Errors

  - Block 1 or Block 2 has incorrect length

  - Block 4 is missing

  - The tags in Block 4 are not correct (for example, :20, 20: instead if :20:)

- Invalid SWIFT cannot be parsed into the SWIFT blocks
- Tag 20 – missing
- Tag 20,21 – sender ref exceeds 16 characters, starts or ends with /, starts with //
- Tag 23B – Unknown bank operation code
- Tag 23E – Unknown instruction code
- Tag 25 – Account Identification exceeded 35 characters
- Tag 28, 28C – Non numeric statement number or exceeded 5 characters, Non numeric sequence number or exceeded 2 characters
- Tag 30 – error parsing the value date
- Tag 32 – Missing
- Tag 32 – Currency (CCY) is not valid (for example, abc)
- Tag 33A, 32A,C,D,K,N – error parsing the value date or the amount
- Tag 34F – error parsing the amount
- Tag 36 – error parsing the exchange rate
- Tag 50F – subfield 2 - 4/ must not be used without 5/ and vice versa, subfield 2 - 2/ must not be used without 3/
- Tag 71A – is invalid for example, unknown code (AAA)
- Other Parsing Errors
  - ISO message has an invalid XML
  - For XML: bad structure (missing namespace, missing closing element)

2.3.3 Reasons for Repair

GPP moves the payment to the Repair queue when the following occurs:

- Failure in Set Basic Attributes service
  - Cannot set office: The receiver (incoming) or sender (outgoing) is not recognized as a valid identifier.
  - Cannot derive an office
  - Cannot derive a department
  - Cannot set the Debit MOP: Invalid FIN copy code.
  - Invalid message type and sub type.
- Failure in Account Derivation
  - Cannot derive account.
  - Account not provided.
- Failure in Account Validation
  - Account not in the GPP database or account lookup interface returned a negative response.
  - The account owner is not the sender and no debit authorization is set up for the sender to debit the account.
- Business flow could not be derived for message (indicates a technical problem in the configuration of supported flows).
- No definition of compliance validation rules: There must be at least one compliance rule; otherwise GPP sends the payment to Repair. The action of the rule can be BYPASS.

2.4　STP Validation

This service (STPRulesService) provides the ability to setup a list of payment validation so that before the message is submitted for processing, it is possible to ensure the payment is good to go. Example, it is possible to set a 'UK payments' validation that includes the creditor account length check (either 8 or 14 characters long). If a payment that is going to the UK failed this validation, a proper error is return and the user is capable of amending the payment accordingly. See 'GPP Business Guide STP Validation' for details.

2.5　Business Rules Service

Some business rules in GPP are done to setup a payment attribute. This attribute (once set) can be used in other business rules as a condition. A single generic service (named MapPaymentInfoUsingRulesService) is used for these business rules. The rule ID is provided in the payment input details. The rule is assessed and the outcome of the rule assessment is a creation of a payment attribute.

The following business rules are assessed and use the generic service.

Rule Name	Processing Description
Department	Define the payment department. This attribute is crucial for GPP user access control.
Business area	Payment attribute
Product code	Payment attribute
Hold time	Assesses the payment and define whether processing should be stopped till a specific time of day.
Office SLA	Ensures as early as possible in the payment processing flow whether the payment may be associated with a specific SLA profile (where the immediacy and priorities may be defined)

Note: The order (orchestration) is defined by a 'High Value' which is the business flow selection (business rule) action.

Payment office and Department attributes are mandatory for system user entitlement management. A payment without these attributes cannot be opened by any of the users.

2.5.1　Department

- Assessment of Department business rule and a selection of a department profile where the profile code is assigned to the department attribute [P_DEPARTMENT].
- Used for user entitlement (department is one of the users' entitlement attributes)

2.5.2　Business Area

- Business area business rule is assessed to define a business area profile. The business area profile code is stored as a payment attribute [P_BA_CD]
- The business area is used to categorize the payment into different offerings and then may be used in a business rule as a condition.

2.5.3　Product Code

- Product business rule is assessed to define a product profile. The product profile code is stored as a payment attribute [P_PRODUCT_CD]
- The product is used to categorize the payment into different offerings and then may be used in a business rule as a condition.

2.5.4 Hold Time

- This section assess the 'Office hold until time' business rule. When a matching rule found the action is a local office time of day (example: 16:00). The payment is held in this hold time status till the time arrives.

2.5.5 Office SLA

- The office SLA business rule is attached to the Office and helps to associate an SLA profile to the payment when applicable. This helps when setting up additional attributes, such as the pay-by-time and system alerts definitions.Business Area

2.6 Compliance

The Compliance Validation business rule allows a call to the compliance interface before enrichment is done over the payment. The rule action define the type of compliance interface to invoke.

The PerformExtComplainceCheckService service perform the compliance request call.

Note: To be able to avoid and skip this first compliance check (note that the check is done twice for every message) add the following criteria

If Compliance validation sts is EMPTY OR Compliance validation sts= 'X'
then select Action = Bypass.

2.7 Message Filter

- Message filter business rule is assessed to exclude from processing certain payments. This is being done by holding the payment in the filtered messages queue. The payment may be released from this queue into the processing flow by a user.

- This is usually being done to divert and control payment traffic (example, when we 202 need to be processed before 103).

- Uses MessageFilterService

2.8 Rate Used for Base Amount Conversion

- *Rate usage for base amount conversion* business rule is assessed to define a rate usage profile. The rate usage profile holds a sheet rate attribute that is one of the key parameters where searching for an exchange rate in exchange rate profile.

- This rate profile is used in order to convert payment to the base currency. This enables comparing payments made in different currencies as they appear in the Messages and Filters tree.

Note: When defining a rate profile for base amount conversion, it is preferable to define the profile without a conversion date. Since this rate is just used in order to obtain a rate that enables comparing payments made in different currencies the exact value is not that important and adding a date might null the rate.

2.9 Repair and Enrichment

- GPP has the ability to automatically repair and enrich messages according to a wide set of parameters. For example, if for incoming payment the first in credit chain is us, then we will remove us so that we would be able to reach the second in chain party.

- The *Repair and enrichment selection* business rule define the conditions for enrichment. The rule action is a 'Repair and enrichment' data manipulation type of profile where the required manipulation is performed.

- Uses the DataManipulationService

2.10 Duplicate Checking

- Duplicate checking (message attribute: Duplicate indx) is executed on payments that are either received by GPP from external networks or internal applications or are manually entered or

handled by a user. Based on the selected dupex algorithm (key message fields such as message type, currency, amount and beneficiary) GPP examines every message for possible duplication.

- Messages that are recognized as possible duplicates are assigned the Possible Duplicate status (or other Repair status) to display the list of duplicate MIDs found in the system. Manual acceptance is required before such messages can continue in their workflow.

- GPP enables a flexible definition of the dupex algorithm and the setting of different types of dupex algorithms for different types of payments via the built-in rule engine. The following processing flow applies:

1. Assess 'Matching check profile selection' for sub type 'Original Payment Vs. Duplicated')

   a. Rule condition: Where [Instr ID] Is Not EMPTY define.

   b. Rule action: 'Matching check' profile named: 'DUPLICATECHECK'. { .

2. The Matching profile 'DUPLICATECHECK' defines the following:

   a. Matching Index (DUPLICATECHECK) for 'Original Payment Vs. Duplicated' is a data manipulation type of profile where the an index is defined (see section **Error! Reference source not found.** for detailed)

   Note: This index can be easily changed by setting up different index profile.

   b. Automatic algorithm: DUPLICATECHECK is a system rule name: 'Automatic matching algorithm' (for Original Payment vs. Duplicated) where the searching criteria are defined.

      i. Duplicate index of the incoming payment is found in the database over one of the following messages:

      ii. Except from the incoming payment itself.

      iii. As long as the database payments are not in 'Authentication exception', 'Possible duplicate'

      iv. And as long as the payment we are looking for is a payment and not a template (P_IS_HISTORY <>2)

3 Manual Handling (N/A)

4 System Configuration and Business Setup

This section describes the solution building blocks that are described and used by the processing description.

4.1 System Parameters

System Option	Description
DEF_OFFICE	The default office. Determines under what Office Id all entries from the external data upload like Accuity will be stored. Used also by other uploads whenever there is a need to insert an entry into the database.
DEF_DEPT	The department to use (per office) for upload of data by the BICplus upload and by other reference data upload facilities. When the various uploads insert data into the database, this Department Code will be used
SUPPORT_STP_RULE	Specifies whether to assess the STP validation service for the processing office. • When set to Yes, the STP validation is being assessed at the beginning of the processing flow (after basic properties service). • When set to No, the service is skipped (Default)

4.2 Profiles

These are the details of the required setup in GPP profiles for Payment Initiation.

Note: For a detailed description of all the fields in the profiles, see GPP Online Help.

4.2.1 Department

The Departments profile allows the user to define the individual departments in the bank that deal with different types of transactions. The department is assigned to the payment. Only users who have access to a specific department are able to work on the payments that belong to this department.

This table describes the relevant fields in the Departments profile.

Field Name	Description
Office	The office IC code, selected from the pop-up web dialog box.
Office name	The name of the office. Populated automatically based on selection of office.
Department code	The identifying code of the department within the bank.
Description	The text description or name of the department in the bank.
NCC	The National Clearing code for the Office

4.2.2 STP Validation

The STP Validation profile is used by the STP business rules as part of the STP Validation service. The purpose of the service is to increase STP rates by providing a tool that performs certain payment validations (different validation profiles are selected and performed for different payments).

The STP Validation profile is a set of payment attributes and a list of validations that need to be performed on these attributes. Once a validation check fails, a proper error is shown to the user and the service fails. The profile also enables the creation of validation rules (robust validations) that ensure, for example, that certain attributes exist, depending on another attribute.

Note: The Insert STP Rule Fields task is used periodically to amend the profile message attribute grid.

This table describes the relevant fields and buttons in the STP Validation profile.

Field Name	Description
Name	Validation name
Description	Description of the validation
Message STP field rule	Click on a rule to amend its attributes.
STP Validation button	Opens the Business Rule infrastructure to set up a rule that is attached to the profile and allows additional and complex validations for messages.
STP Manipulation button	Opens the Manipulation Rules infrastructure to allow creation of message manipulation (given that all validations were passed).

4.2.3 Message STP Field Rule

This table describes the relevant fields and buttons in the Message STP Field Rules profile.

Field Name	Description
STP Rule Name	Populated automatically based on selected STP Rule
Description	Populated automatically based on selected STP Rule
Field ID	Populated automatically based on selected STP Rule
Alias	Populated automatically based on selected STP Rule
Field type	Populated automatically based on selected STP Rule
Special caption code	Selection from REASONS by REASON_TYPE = 'SCREENCAPT'
State in message	Drop-down from fields values with FIELD_TYPE = 'FIELD_PRESENCE'. Options are: M = Mandatory O = Optional D = Disabled H = Hidden
State in template	Drop-down from fields values with FIELD_TYPE = 'FIELD_PRESENCE'. Options are: M = Mandatory O = Optional D = Disabled H = Hidden
Min. Length	Enabled only for field of type NUMBER. Compared with the value in Logical fields table. Must be greater than or equal to this value. Decimal type can be zero
Max. Length	Enabled only for field of type NUMBER. Compared with the value in Logical fields table. Must be less than or equal to this value. Decimal type can be zero
Precision	Relevant only for DATA_TYPE = Decimal. Need to be validated against the default length → equal or less than maximum length set. Maximum length plus the precision should be less or equal to 38
Default	Disabled for type Date/Time
Combo id	Default Combo/Search list is defined in the Logical Fields table. The special will be used to define a shorter list i.e. only 2 currencies are valid for this screen set.
Case definition	Options are: U = Upper L = Lower A = All (Default) Relevant only for type "String"
Char. Set validation	Valid or Invalid Char Set. Options are: V = Valid I = Invalid A = All Relevant only for String Data Type.

Field Name	Description
Min. value	
Max value	
Field Manipulation button	Navigation button to the manipulation rule infrastructure to setup a manipulation rule that is attached with OBJECT_UID = UID MESSAGE_STP_FIELD_RULE, RuleType = FieldSTPManipulation, Rule Sub Type = FIELD_LOGICAL_ID
Field Validation button	Navigation button to the rule infrastructure to setup a rule that is attached to OBJECT_UID = UID_MESSAGE_STP_FIELD_RULE, RuleType = FieldSTPValidation, Rule Sub Type = FIELD_LOGICAL_ID. The action of the rules is an ERROR_CODE and sub action that indicate if it is Hard error, Soft

4.2.4 Exchange Rate Info

The Exchange Rate Info profile is a prerequisite for defining currency pairs and their relationship. An Exchange Rate Info profile defines a currency pair and the number of units of each currency in the pair. It also defines the number of decimal digits of the exchange rate to use when performing conversions.

This table describes the relevant fields and buttons in the Exchange Rate Info profile.

Field Name	Description
Currency 1	3 character ISO code for the first currency in the pair
Units	Number of units of this currency used when calculating an exchange rate with the counter currency
Currency 2	3 character ISO code for the second currency in the pair
Units	Number of units this currency used when calculating an exchange rate against the counter currency.
Decimal digits	Type in the number of decimal digits displayed in the exchange rate.
Soonest Value Date	Sets the soonest settlement time for conversion of base currency with the profile currency. Defines the difference in days between the day the deal is done and the day the deal is settled. Possible values: • Standard • Expedited
Exchange Rate button	Opens the Exchange Rate Data profile for the currency pair selected in the Exchange Rate Info profile.

4.2.5 Exchange Rate Data

The Exchange Rate Data profile is used to manage the exchange rate between supported currency pairs. GPP enables you to transfer funds in any currency for which a profile exists. When the debit and credit account currencies are different from the payment currency, conversions are made using the exchange rate for the currency pair (up to a pre-defined threshold).

In addition, all transactions are converted to the base currency for security checks, threshold limit checks, and other comparisons.

Exchange rates need to be updated regularly.

Note: The decimal separator key is determined by system parameter AS_DECISEP.

The determination of which rate type to apply to a message is done via Rate Usage rules and the Rate Usage profile.

This table describes the relevant fields and buttons in the Exchange Rate Data profile.

Field Name	Description
Rate type	Choose the rate type from the drop-down list of rates. Default: Standard Rates
Currency 1	3-digit ISO code for the first currency
Currency 2	3-digit ISO code for the second currency
Mid rate	Equals the Sell rate minus the Sell spread. Also equals the Buy rate plus the Buy spread. This field is disabled and the Sell rate and Buy rate fields are enabled when SHOWSPREAD is set to 'NO'. Cannot be zero.
Buy spread	Mid rate minus the Buy rate. Not available if the Sell rate and Buy rate fields are enabled.
Sell spread	Sell rate minus the Mid rate. Not available if the Sell rate and Buy rate fields are enabled.
Sell rate	Rate used to sell 1 unit of currency 1 to buy currency 2. When system parameter SHOWSPREAD is set to 'YES', the Sell rate is calculated by adding the Sell spread to the Mid rate.
Buy rate	The rate used to buy 1 unit of currency 1 with currency 2. When the system parameter SHOWSPREAD is set to 'YES', the Buy rate is calculated by subtracting the Buy spread from the Mid rate.
Bank sells (Currency 1) at (Units 1) for (Currency 2)	Summary statement of the Sell currency and Sell rate described above.
Bank buys (Currency 1) at (Units 1) for (Currency 2)	Summary statement of the Buy currency and Buy rate described above.
Valid until	Date after which this exchange rate cannot be used. The exchange rate is Unlimited if a Fixed rate is selected.
Exchange Rate Info button	Opens the Exchange Rate Info profile.

4.2.6 Products

The Products profile is used to define the Product code message attribute that GPP uses. This option is also used to define an alias for each Product Profile.

This table describes the relevant fields in the Products profile.

Field Name	Description
Code	The code by which the product is identified.
Alias	An alias for this Product profile.
Description	A text description of the Product profile, for informational purposes.

4.2.7 Business Area

The Business Area profile is used to define number ranges that are to be assigned to the sequence number portion of the Local Reference that is assigned to a payment message. User defined rules are used to determine the specific Business Area profile to apply to the message.

This table describes the relevant fields and buttons in the Business Area profile.

Field Name	Description
Business Area	Profile (business area) name
Description	Description of the Business Area

4.2.8 Repair and Enrichment

GPP provides an enrichment of the country code fields when empty, so that it is possible to use these attributes as a message criteria when performing business rules decision making during the payment processing flow.

This profile is used to set payment attributes.

4.2.9 Service Level Agreement

Service Level Agreement (SLA) defines specific payment processing commitments the bank is subjected to. The SLA is one of the retail products the bank sells to provide added value to the payment processing.

This table describes the relevant fields and buttons in the Service Level Agreement profile.

Field Name	Description
Name	Name of the profile (the profile is associated to a list of customers)
Type	Options are: • Credit • Debit • Office
Description	Description of the profile
Priority	Drop-down list of priority options
Process	
Process Immediately	If selected, indicates that the message should be processed as soon as it is received.
Hold x minutes before pay-by-time	If selected, enables defining number of minutes (delta) from pay-by-time to process the payment. Enabled only when the Process Immediately option is not selected.
Processing no Earlier Than	
Latest time (TOD)	Specifies a time of day by which the payment must be processed. Needs to be set with the time zone field.
Time Zone	Time Zone for the Process after (TOD) field.
Latest processing time	Specifies a set of time in minutes for the payment to be processed to completion. If the time had passed, this usually causes an alert in the system
Processing no Later Than	
Alert before pay-	Specifies the time (in minutes) that will be used as an alert in cases where the

Field Name	Description
by-time (minutes)	payment did not reach completion and where the alert time had been reached. A positive value reflects a time before pay-by-time and a negative number reflects a time passed pay-by-time
	The field is enabled and mandatory if the check box is selected.
	The soonest value of this field and 'alert before earliest cut-off time' is stored and examined during the payment processing flow.
Alert before earlier cut-off time (minutes)	Specify the time (in minutes) that will be used as an alert in cases where the payment passed the one of the payment earliest cut-off time.
	The field is enabled and mandatory if the check box is selected.
	The soonest value of this field and 'alert before pay-by-time' is stored and examined during the payment processing flow

4.2.10 Matching Check

Matching check profile defines the index data manipulation profile and the automatic mechanism are defined.

The default duplicate index GPP provides is:

Name	Description
Pmt office	Payment processing office
Orgnl sttlm amt	Original settlement amount
Orgnl sttlm ccy	Original settlement currency
Orgnl sttlm dt	Original settlement date
Orgnl instr ID	
Orgnl cdtr acct ID	
POrgnl cdtr account IBAN	
Orgnl msg tp	Original message type

4.3 Business Rules

4.3.1 Department Determination

Description

The Department attribute in GPP helps categorize the message in relation to the operators who deal with it and their entitlements (permissions in GPP). The department rules associate a department with each message.

Rule Actions

A department code is assigned. These codes are accessible via the Department profile.

Rule Attachment

Repair and Enrichment Selection rules are attached to an Office. Multiple rules can be attached. All matching rules are being evaluated.

Usage

GPP restricts user access to payments by department. A user is granted access to a payment if the department the payment belongs is included in the user's Departments Entitlement Class Profile. In Create, the default department of the payment is the user's department. In Create and Repair, the user can change the department to another department within the user's rights, that is, to a department in the user's Department Level Profile. The primary purpose of Department rules is to assign a department to STP payments. After the department code has been assigned it can be used as criteria in other rules. This enables payments to be grouped.

Examples

Payments in currency GBP or EUR should belong to department DOM (domestic), and other payments should belong to department INT (International). The following rules are attached to the Local Office:

- *Rule 1*: If orgnl sttlm ccy in list (GBP, EUR) then department is DOM

- *Rule 2:* If orgnl sttlm ccy not in list (GBP, EUR) then department is INT

4.3.2 Business Area

Description

Payment attribute

Rules Action

Business Area (selection from Business Area profile).

Rule Attachment

Business Area rules are attached to an Office. Multiple rules can be attached. The first matching rule applies.

Usage

Examples

4.3.3 Product

The Product rules list of available actions consists of all the active product codes in the system. Products are maintained via the Product Profile option, which is found via System/General Setup/Messages. The list of available product codes in changes dynamically as products are added or deleted.

The product attribute of a payment is not used by core Global PAYplus payment processing. Its usage is primarily as a condition in other rule types that are invoked at later processing steps. The product code can be handed off to other systems, can be used as an attribute to group payments, in reports, etc.

Description

Product is a code that helps categorize the payment into types of business activities that the bank provides. The product business rule defines a code for every payment. This rule is being accessed whenever the product information is not specified. (Usually this occurs for non-manually created messages. When a payment is manually created, the user usually defines the product code manually).

Rules Action

Product code (selection from the Products profile).

Rule Attachment

Product rules are attached to an Office. Multiple rules can be attached. The first matching rule applies.

Usage

The product rules define the message's category in respect of the product the bank offers to their customers. The product can be changed by the operator.

Examples

If a EUR payment is made by retail customers and where the source of the payment is an internet banking application, then the product is 'IBP' (Internet banking product).

Rule 1: If payment source is 'Internet banking' and customer type is 'Retail' and payment currency is EUR then set the product to 'IBP'.

4.3.4 Debit/Credit Transaction Code

Description

The Transactions code is a meaningful code for the bank's accounting system. A different code can be applied to every message.

Rules Action

Transaction code (where the profile is set to the relevant Dr side, Cr side, or both sides).

Rule Attachment

Parties profile or Offices profile. The first matching rule is applied to the message.

Usage

According to the payment orchestration flow, Dr and Cr transaction code business rules are evaluated to define a matching transaction code for the Dr and Cr accounts. These codes are then used by the accounting system for internal or other purposes.

Examples

- If a payment type is 103, it is a BOOK payment, and the Dr account is a retail account, then set the Dr transaction code to ABC
- If a payment type is 103, it is a BOOK payment, and the Dr account is an asset account, then set the Dr transaction code to DEF

4.3.5 Prioritization

Description

Prioritization rules enable the system to assign a priority code to a payment transaction. A GPP user can use the priority code assigned by the system to determine the handling priority of payments that require manual handling.

When using the GPP GUI to view transaction payments in a manual handling queue, a GPP user can sort the payments by the priority (Prty) column, which displays the priority code assigned by the system to each payment transaction. A user can then determine the order in which to handle the displayed payment transactions, handling higher priority transactions before lower priority transactions.

Rules Action

The only available action for a Prioritization rule is to set a priority code to each payment transaction that meets the conditions of the rule.

The following table describes the available priority codes.

Code	Description
100	Lowest
200	Low
300	Low medium
400	Medium
500	High medium
600	High
700	Extra high
800	Special
900	Extra special

Rule Attachment

Prioritization rules are attached either to an office or to a party. The system applies only the first matching rule.

Usage

Prioritization rules are used to assign a priority code to a payment transaction. After a priority code is assigned, the system can use it as a rule condition during subsequent payment processing steps.

The system assigns a priority code to each payment transaction using the first rule that matches the payment. After a match, the system does not evaluate subsequent Prioritization rules for that payment transaction.

Example

A Prioritization rule sets a 700 priority code (Extra high) to every payment transaction with a payment settlement amount equal to or more than 1,000,000 and with BARCGB22XXX as the creditor agent BIC.

The Action Details fields are:

- If there is a match then: SET
- Priority to: 700

The following table describes the required conditions for the Prioritization rule.

And/Or	Field/Function	Operator	Valeue/Field/Function	Description
	[Cdtr agt BIC]	=	BARCGB22XXX	Checks the creditor agent BIC
AND	[Sttlm amt]	>=	1000000	Checks the payment settlement amount

4.3.6 Rate Used for Base Amount Conversion

Description

Exchange rates are stored in GPP by rate type (Standard, Interbank, Customers, etc.). The rate type to be used is based on GPP's rate usage profile. The purpose of this rule is to define the rate usage profile for the conversion.

If the credit currency is the same as the base currency, use the credit currency amount. If the debit currency is the same as the base currency, use the debit currency amount.

Otherwise, this rule determines the rate type to be used for the conversion. Compare the result of converting both the credit and debit currencies and use the currency that produces the higher base amount because this base amount is compared with various thresholds.

Rule Actions

Rate Usage Profile

Rule Attachment

Base Rate Usage rules are attached to the Office. Multiple rules can be attached. The first matching rule is used for base amount conversion. At least one rule must be attached. If no rule is attached, error 40017 is generated (no rate specified for the conversion type)

Usage (N/A)

Example

It is the bank's requirement that for payments in which either currency is GBP or EUR, STANDARD rates are used. However, for payments in which neither currency is GBP or EUR, USD rates are used. Two Rate Usage profiles are set up:

- STANDARD: use STANDARD rates
- USD Rates: use USD rates

The following base rate rules are attached to the Local Bank:

- Rule 1: If Sttlm Curr (ency) In list (EUR, GBP) or Sttlm Curr (ency) In List (EUR, GBP) then use STANDARD rates.
- Rule 2: (no conditions) – use USD rates

4.3.7 Message Filters

Description

Message Filter rules enable the bank to stop specific types of payment messages before they are processed by the system. GPP enables authorized users to define Message Filter rules that the system uses to determine which messages enter the workflow.

Message Filter rules, or filters, are defined and activated as required. They are used when it is necessary to control the influx of messages entering the system. The system evaluates all incoming messages against defined Message Filter rules, and the following occurs to all messages that match a defined and attached Message Filter rule:

- The system sends the message to the Message Filter queue.

4.3.8 Rate Used for Base Amount Conversion

This enables system resources (both automatic and manual) to focus on the most urgent messages.

Rule Actions

Stop Processing is the only legal action for Message Filter rules.

Rule Attachment

Message Filter rules are attached to an office, and the system enables attaching multiple rules.

Usage

Message Filter rules are invoked at the beginning of payment processing (at the very end of set basic properties services).

To invoke the Message Filter rules, the system evaluates the rules attached to the local office of the payment in the defined attachment order.

GPP evaluates each message against the Message Filter rules as follows:

- If no Message Filter rules are attached to the local office, the payment is accepted into the workflow for processing.
- If at least one Message Filter rule is attached to the local office and a matching rule **is not** found, the payment is accepted into the workflow for processing.
- If at least one Message Filter rule is attached to the local office and a matching rule **is** found, the payment is sent to the Message Filter queue and the system does not process the payment.

If any attached Message Filter rules are changed, the system re-evaluates all messages in the Message Filter queue. This might cause the system to release messages from the Message Filter queue to the workflow for processing.

Changes to Message Filter rules become effective immediately. There is no need to access the **Apply Changes** option in the **System** menu to make changes effective.

Example

Considering the time of day and the workload, the bank decides only payments in the Euro (EUR) currency should be accepted for into the workflow for processing.

To accomplish this, the bank defines a Message Filter rule that matches all messages with a settlement currency other than EUR. After the bank attaches this rule to the local office, the system accepts into the workflow only those messages with a EUR settlement currency. The system routes all other messages to the Message Filter queue.

Later, the bank decides that only bank-to-bank transactions should be accepted into the workflow for processing.

To accomplish this, the bank defines another Message Filter rule that matches all messages that are not bank-to-bank transactions. After the bank attaches this rule to the local office, the system accepts into the work flow for processing only those messages that meet the following conditions:

- The settlement currency is defined as EUR.
- The message is a bank-to-bank transaction.

At any point, the bank can decide to accept all messages into the workflow for processing.

To accomplish this, the bank detaches both Message Filter rules from the local office. Immediately, the system accepts all messages into the workflow and releases all messages currently held in the Message Filter queue.

4.3.9 Office hold until time

Description

The business rule provides the ability to stop payment processing till a certain time of day.

Rules Action

A specific local office time of day (example: 16:00)

Rule Attachment

Office

Usage

When a matching rule found, the payment is held in 'Timed hold' status till the local office time (that was specified in the rule action) reaches.

4.3.10 Compliance Validation

Description

Industry standard (see US *Office of Foreign Assets Control*) requires the payments to follow some compliance checks. These include validations that the funds are not being sent to unauthorized beneficiaries. The purpose of this check is to cut the lines of financial support for terrorists, fight financial crime, enforce economic sanctions against rogue nations, and combat the financial support of the proliferation of weapons of mass destruction.

The purpose of this business rule is to define whether the payment requires compliance checks.

Rules Action

A definition of the relevant compliance check the payment is subjected to.

Rule Attachment

Offices Profile.

Usage

According to the payment orchestration flow, the payment would go under compliance checks validations. Whenever a matching rule is found, an interface is being triggered that sends the payment details to the compliance check (to be checked against a 'black list'). Whenever a possible match is found the payment is being routed to 'Compliance check' queue.

Examples

1. If payment type is 103 and it is an outgoing payment then do the OFAC compliance check.
2. GPP performs Compliance (OFAC) checks twice for every high value message. At the beginning of the payment processing flow and right before posting is done. The decision of whether a payment should go through compliance check is upon assessment of a business rule Compliance validation.

To be able to skip the first compliance check and only perform the second check, ensure the following setup:

1. To skip the first Compliance check which happens at the beginning of the processing, define a rule:

If Compliance validation sts is EMPTY

OR Compliance validation sts= 'X' ➜ then select Action = Bypass

2. To perform the second Compliance check which happens at the end of the flow just before the posting, define a rule:

    If Compliance validation sts is NOT empty

    AND Compliance validation sts<> 'X' ➜ then select Action = OFAC List

4.3.11 Repair and Enrichment Selection

Description

This rule enables the automation of repair and enrichment actions that are usually done manually. The rule conditions are used to specify certain payments whereas the action specifies the enrichment or repair action that should be taken.

Rule Actions

The actions available to the rule are contained in a list of 'Data manipulation' rules defined in the system. Each data manipulation rule can set or clear the value of any payment attribute.

Rule Attachment

Repair and Enrichment Selection rules are attached to an Office. Multiple rules can be attached. Only the first matching rule is evaluated.

Usage

The rule is assessed according to the orchestration engine. For enrichment processing, it is recommended to do it at the beginning.

Setup

Assessment of the 'Repair and Enrichment Selection' business rule that defines a Repair and Enrichment Manipulation profile (where payment attributes are set).

- GPP provides an enrichment of the country code fields when empty so that it would be possible to use these attributes as a message criteria when performing business rules decision making during the payment processing flow.

- GPP enriches the following:
    - Debtor CC: When attribute not provided with Debtor country code (EnrichDBTR_CTRY w DBTRAGT) when provided and if not provided with Instructed agent CC (EnrichDBTR_CTRY w INSTDAG)
    - Creditor CC: When attribute not provided with Creditor agent BIC (EnrichCDTR_CTRY w CDTRAGT) where provided

    Example:

    Name: EnrichDBTR_CTRY w INSTDAG

    Description: Enrich X_DBTR_CTRY with the orig sender (INSTG AGT BIC) country code if no debtor agent BIC exists

    Action: Enrich X_DBTR_CTRY w IN

    Action Description: Enrich X_DBTR_CTRY with the orig sender (INSTG AGT BIC) country code

4.3.12 Matching Check Profile Selection

Define the matching check algorithm by assessing the Matching check profile selection business rule. The rule action is a matching check profile.

4.4 Statuses

Status	Description	Actions
Authentication Exception	Messages that have an unrecognized format or failed initial GPP authentication.	Accept Cancel Message
Possible Duplicate	Messages that have been identified as possible duplicates.	Possible Duplicates Accept Cancel Message Re-route
Compliance Exception	Messages that failed to pass global interdiction interface checks for OFAC or AML.	Approve Block/Cancel Send to Repair, Resend
Filtered Message	Messages whose processing is stopped by activation of a message filter business rule.	Release
Repair	Messages with errors to be manually repaired.	Submit Cancel Reject/Return
Timed Hold	Message placed on hold until a specified time.	Release Send to Repair

4.5 Message Attributes

Field ID	Name	Description
P_BA_CD	Business area cd	GPP Proprietary attribute. Derived by Business area selection business rule that selects a Business area profile. The payment stores the name field from the Business area profile
P_DEPARTMENT	Department	Department
P_PRIORITY	Prty	Payment priority. Defined by the prioritization rule and also by a specified SLA profile. The possible values are 100-900 where 100 is a non-urgent payment and 900 is the most urgent
P_PRODUCT_CD	Product cd	GPP Proprietary attribute. Derived by Product business rule that selects a Product profile. The payment stores the name field from the Product profile
P_DBT_TX_CD	Dbt tx cd	GPP Proprietary attribute. Derived by Debit Transaction code business rule that selects a transaction code. This attribute stores the rule action code value
P_CDT_TX_CD	Cdt Tx cd	GPP Proprietary attribute. Derived by Credit Transaction code business rule that selects a transaction code profile. This attribute stores the transaction code from transaction profile
P_BASE_AMT	Base amt	Base Amount (expressed in base currency)
P_BASE_CCY	Base ccy	Base Currency (local office currency)
P_OFFICE_SLA	Office SLA	Office Generic SLA

Field ID	Name	Description
P_DUPLICATE_IND EX	Duplicate indx	Duplicate index

4.6 Entitlements

Entitlements for queues and rule types are:

- Rule Type Classes:
    - Rate used for Base Amount Conversion
    - Message Filter
    - Repair and Enrichment Selection
    - Compliance Validation
    - Product
- Message and Filters Classes:
    - Filtered Message
    - Authentication Exception
    - Possible Duplicate
    - Compliance Exception
    - Repair

Appendix A: Duplicate Check Setup

This is the Setup required for Duplicate Check

Define the matching check algorithm by assessing the 'Matching check profile selection' business rule. The rule action is a matching check profile.

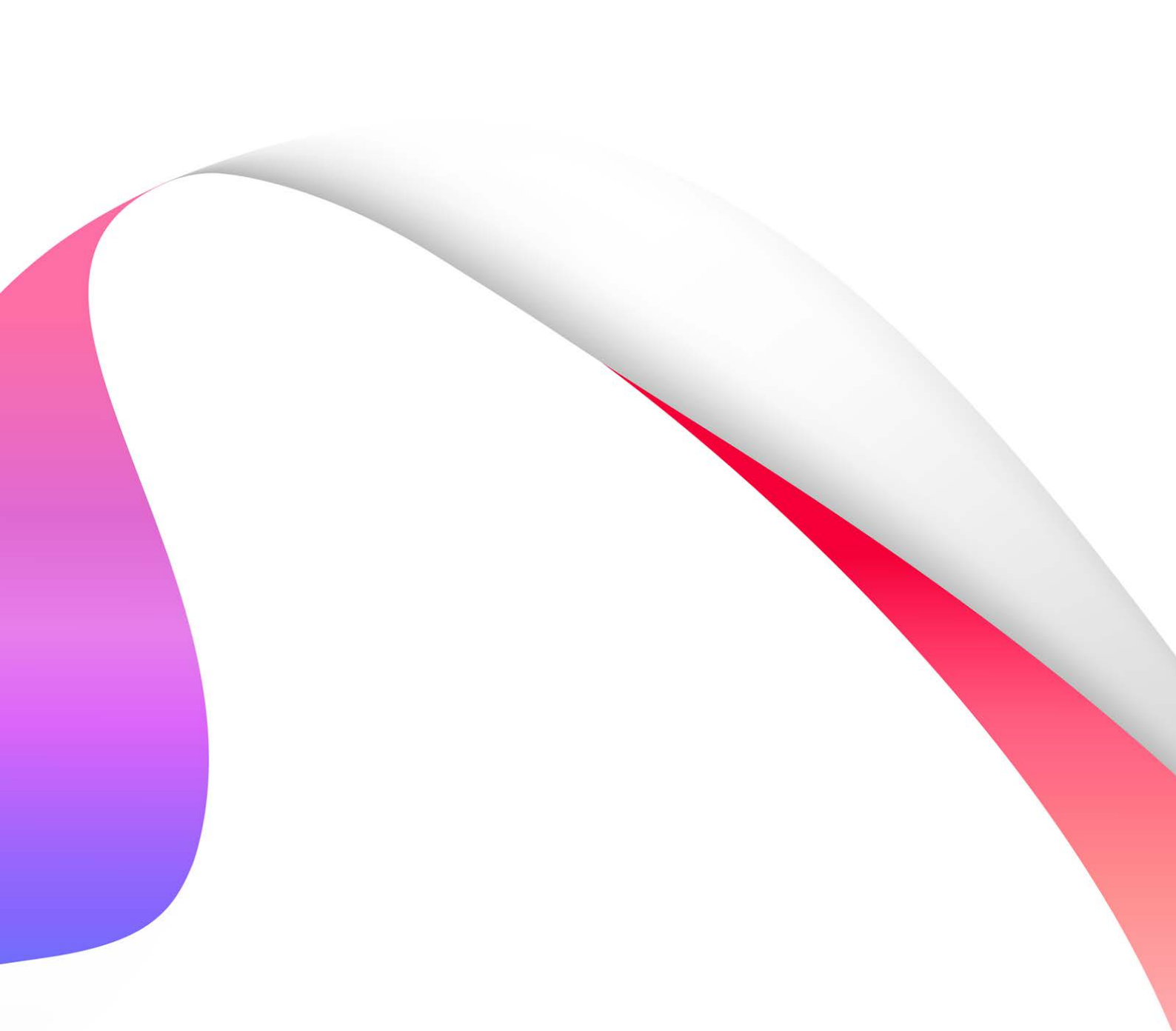Matching check profile defines the index data manipulation profile and the automatic mechanism are defined.

The default duplicate index GPP provides is:

Name	Description
Pmt office	Payment processing office
Orgnl sttlm amt	Original settlement amount
Orgnl sttlm ccy	Original settlement currency
Orgnl sttlm dt	Original settlement date
Orgnl instr ID	
Orgnl cdtr acct ID	
Orgnl cdtr account IBAN	
Orgnl msg tp	Original message type

Appendix B: Glossary

The table below is a glossary of terms used in this document.

Name	Description
Accuity	Accuity maintains the most authoritative and comprehensive databases globally with a reputation built on the accuracy and quality of our data, products and services.
CC	Country code
FI	Financial Institution
GPP	Global PAYplus
STP	Straight Through Processing
SWIFT	Society for Worldwide Interbank Financial Telecommunication, an organization owned by banks that operates a network to facilitate the exchange of messages between financial institutions (including broker-dealers and securities companies). A SWIFT payment message is an instruction to transfer funds. Settlement takes place via a payment system or through correspondent banking relationships.