



# TPS Day 2

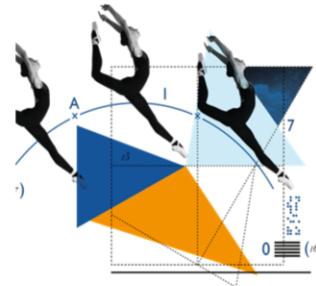
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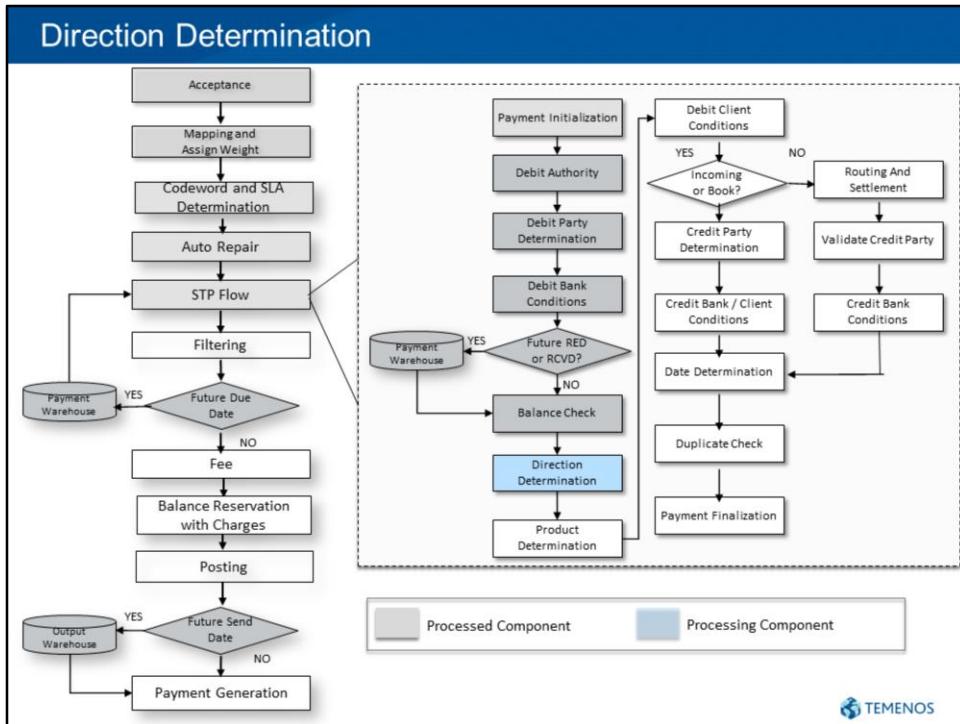


## Learning Objectives

### Objectives

- Understand product features of TPH such as
  - Direction Determination
  - Product Determination
  - Routing and settlement
  - Credit party determination
  - Client conditions
  - Date determination
  - Duplicate check
  - Fee calculation
  - Posting
  - Generate outgoing message





## Overview

When a payment is processed, it is imperative for the system to know the direction of the payment. This would influence further processing of the payment.

In general, 4 different types of direction can be identified for payments not originating from Order Entry and Repair:

**Incoming:** the Originating Party of the payment does not reside in the processing bank's ledger, the Beneficiary Party of the payment resides in the processing bank's ledger

**Outgoing:** the Originating Party of the payment resides in the processing bank's ledger, the Beneficiary Party of the payment does not reside in the processing bank's ledger

**Redirect:** neither the Originating Party nor the Beneficiary Party of the payment resides in the processing bank's ledger

**Book:** both the Originating Party and the Beneficiary Party of the payment reside in the processing bank's ledger

For instance, if it is an outgoing or a redirect payment, we need to find out how best to reach the final beneficiary (Account with institution).

The direction of a payment is based on the following criteria:

- Originating source of the payment instruction

- Incoming message type of the payment instruction

- Debit account type

- Presence of certain code words

Whether the ultimate beneficiary of the payment resides in the processing bank's ledger (On us / Off us)

The nature of the transfer (Bank or Customer transfer) can also influence the payment processing. For example, conditions differ between banks and customers and so will the charges and floats. Therefore, it is important to distinguish between these two types of transfers.

Whether the payment is a bank or client transfer is based on the following criteria:

Originating source of the payment instruction

Incoming message type of the payment instruction

The direction (**I, O, R, and B**) and transfer type (**B, C**) must be determined for every payment otherwise the payment cannot be properly processed.

## Direction Determination

#	Debit account (Remitter is in own ledger)	Credit Account (Ultimate Beneficiary is in own ledger)	Direction
1	Yes	No	Outgoing
2	No	No	Redirect
3	Yes	Yes	Book
4	No	Yes	Incoming



There are 4 types of possible directions

Incoming

Outgoing

Redirect

Book

Direction component not only determines Direction but also Transfer type of a payment.

There are two types of Transfer type

Bank transfer

Customer Transfer

If both the ultimate parties are Bank then it is Bank transfer.

If either one of the parties are Customer ( or can be both) then it is Customer Transfer.

## Bank or Client(Customer) Transfer

Bank Or Client Transfer		
Message Type	Transfer Type	Description
MT101	C	Originating party is a customer
MT103	C	Originating party is a customer
MT202	B	Originating party is a bank and beneficiary party is a bank
MT202COV	B	Originating party is a bank and beneficiary party is a bank
STO	C	Originating party is a customer
Batch – Parent**	C	Originating party is a customer
Batch – Child**	C	Originating party of the parent is a customer
Clearing settlement (Incoming/Outgoing)**	C	Underlying transactions are customer transfers
Clearing transactions (incoming/outgoing)**	C	Beneficiary party is a customer
Claim**	C	Ultimately it is the Customer who bears the charges of the claim
Order Entry payments/Repair*	B or C	



Each payment can only be one of the following two types:

**Customer transfer:** either the originating party or the beneficiary party is a customer (or both)

**Bank transfer:** both the originating party as well as the beneficiary party is a bank

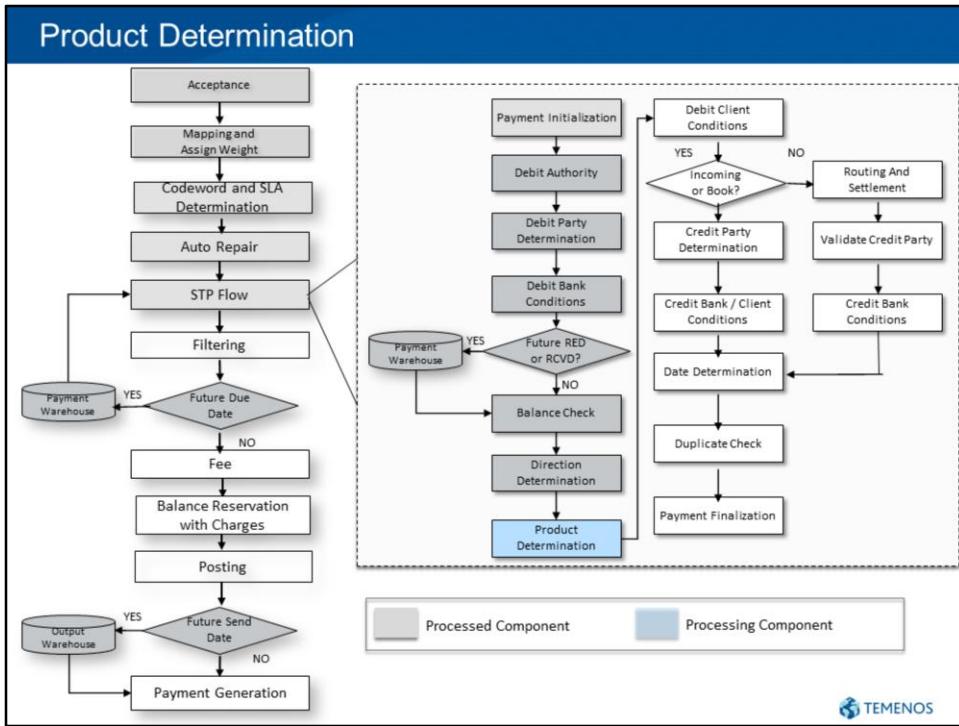
It is vital that a payment can only be a customer transfer or bank transfer, it can never be both.

The table above shows the Transfer Type indicator for all payments that are relevant for the Payment Engine.

### Note!

\* The transfer type for Order Entry/Repair payments does not have to be determined here as the operator will already have set the Transfer Type indicator via the input screen or direction is already determined before the payment is put to the Repair queue.

**Note\*\* :** BATCH and clearing payments will be covered later on in the course and these will be explained in detail then. Information provided for high level overview.



Different flavours of Product Determination based on the High Level Weight (Light, Heavy) to enable simple definition and efficient processing of payments

Ability to build additional flavours of Product Determination (Middle Weight, in future) and Specific Weight

Definition of attributes which determine the Product for the different flavours via GUI

Definition of Output flags (via GUI) which drive the processing of the subsequent components of the Payment Engine (Client Condition, Routing & Settlement, Date Determination, Fees and Posting Scheme)

Logic to determine and derive some of the Product Determination attributes, which are not directly available in the Payment transaction, from related fields in the Payment transaction

Peeling off mechanism to retrieve the right product for Heavy Weight Payments

Logic to retrieve the product for light weight payments

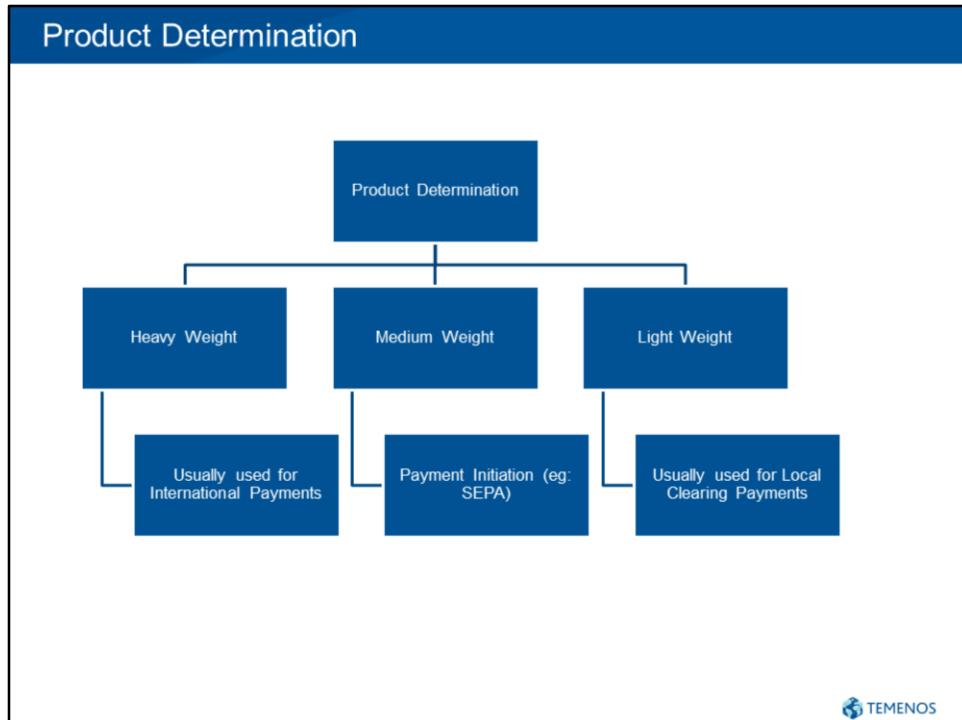
## Overview

The main feature of Product Determination component is to arrive at the Product of the Payment and retrieve the Output Parameters, which become input to a number of components to assist in making decisions.

A bank can serve a wide variety of corporate clients and offer Payment Products to suit their business needs. When processing a payment, it is vital for the system to know which payment product is being used so that any further processing of the

payment can be influenced.

There are two characters of product determination and depending on the weights of a payment the appropriate production determination character is used



### **How do I decide if my payment product is heavy, medium or light?**

This is based on a business requirement. To cater the payments based on their characteristics, there is a feature called as Weights Assignment.

This weight refers to an overall classification of the payment on a very broad level.

Weight can be defined as a categorisation of a payment instruction with a purpose to influence the payment processing priority, and deciding flavour of processing.

#### **Heavy Weight**

Usually, All International Payments and Domestic Payments (Outgoing or Book) are categorized as Heavy Weight. Cross border payments received and sent via SWIFT network and foreign currency book payments are categorised as "International" payments". Payments in local currency originating and ending within the same Country are categorized as "Domestic".

#### **Medium Weight**

Medium Weight is specifically meant for SEPA

#### **Light Weight**

Generally, all Incoming or Re-direct Domestic Payments through Clearing Channels are treated as Light Weight.

#### **Can Local Clearing messages have Heavy Weight processing?**

TPH provides a robust configuration engine to define agreements based on message characteristics and cater varied customer at varied levels.

Its indigenous and state-of-art architecture allows to set up configurations responsible for payment process with respect to the client interests.

If Local Clearing messages are meant to be distinguished under Heavy weights, priority can be assigned in product determination accordingly.

### **How is a Payment processed under Heavy Weight / Light Weight Product Determination?**

A payment is processed as ‘Heavy Weight’ or ‘Light Weight’ based on its characteristics and pertaining to the processing Bank’s business requirement. To serve the payments based on their characteristics, there is a feature called as Weights Assignment.

Essential elements are picked up from the Payment and based on it, the whole processing takes place.

*For Example,*

Mike in US, wishes to pay his supplier Magnum located in UK, USD 1000. Magnum holds an account with T24 Bank while Mike has an account with CITI Bank in UK. CITI Bank, on behalf of Mike sends a 103 to T24 Bank. Hence, an incoming MT103 is received.

From the payment received, the **Processing Company BIC** and **Message type** is retrieved. TPH can receive payments from various channels namely SWIFT, BACS etc. Pertaining to this scenario, the channel from which we are expecting is “SWIFT” and the **Originating Source** is also “SWIFT”.

These three key values are regarded as vital and based on them, the Weights Assignment is performed.

The flavour of Product Determination is based on the High Level Weight (Light, Heavy) to enable simple definition and efficient processing of payments.

In simple terms, High Level Weight (Weight Code) from the Payment Object will be read and if the High level Weight is “**Heavy**” it should call Heavy Weight Product Determination and if the High Level Weight is “**Light**” it should call Light Weight Product Determination.

For Example, if the Weight Code is configured as ‘H’, then the payment will be processed under Heavy Weight Product.

### **How does Product Determination impact the business requirement based on payment characteristics?**

Based on a payment, Product Determination calculates several attributes and these attributes can be considered as crucial in enhancing the Bank’s business process.

*For Example,*

Based on the payment direction, the Payment can be distinguished as ‘**Domestic**’ or ‘**International**’.

And on classifying the payment as ‘Domestic’ or ‘International’, the processing of payment becomes easy with respect to Fee calculations, etc.

**If Direction is "Incoming"**

Product Determination checks if the Debit Account Currency equals Home Currencies (this can be multiple) and Transaction Currency equals Home Currencies and Ordering Institution Country equals Home (Local) Countries (this can be multiple).

If Ordering Institution is not present, checks “Sender Country” and if “Sender Country” not present, then payment set as “**International**”.

If both Transaction Currency and Debit Account Currency equals Home Currency and Ordering Institution or Sender Country (as determined above) equals Home (Local) Country then payment set “**Domestic**”, else “**International**”.

#### **If Direction is “Book”**

Product Determination checks if Debit Account Currency and Transaction Currency match the Home Currencies. If above check is successful, then the payment is set to “**Domestic**”, else “**International**”.

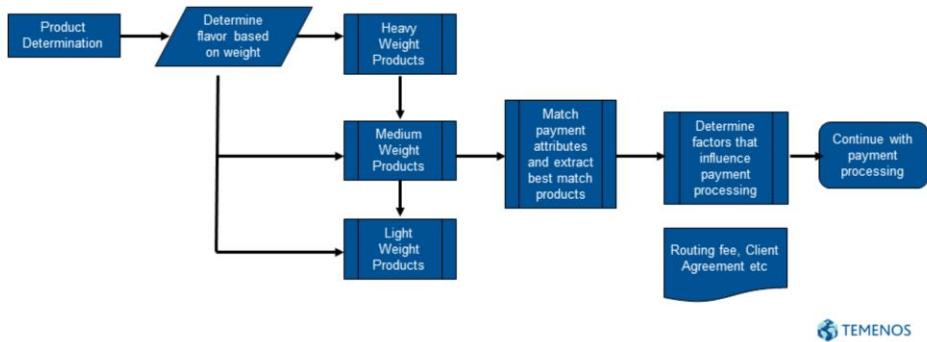
#### **If Direction is “Outgoing” or “Re-direct”**

Product Determination checks if the Debit Account Currency matches Home Currencies (this can be multiple) and Transaction Currency matches Home Currencies and Beneficiary Country (from BENINS or ACWINS) equals Home (Local) Countries (this can be multiple). If yes, the payment is set as “**Domestic**”, else “**International**”.

If both BENINS and ACWINS are not present, then extracts Beneficiary (BENFCY) Country from the “Beneficiary IBAN” and decide if the payment is “**Domestic**” or “**International**”, as explained above. If BENFCY does not have a valid IBAN, set “**International**”.

## Defining products based on weight

- Heavy weight product designer enables product definition for payments processed via SWIFT and RTGS systems
- Medium weight product designer enables product definition for payments originated and sent to Clearing (ISO20022 or SEPA)
- Light weight product designer enables product definition for payments which are received from Clearing and also returned to Clearing (In essence, any payment to/from the Clearing which is not an initiation)



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A bank can serve a wide variety of corporate clients and offers Payment Products to suit their business needs. The commercial Payment products of the bank are differentiated based on geography (Domestic, SEPA, Cross Border), Payment Type (Credit Transfer, Direct Debits, Cheques, etc.), Currency and Amount Value (High/Low Value), Volume (Batch vs Single), Priority (Urgent/Normal) and Charges for processing payments.

Further the Bank has to comply with regulatory requirements in EU/EEA such as Payment Services Directive [PSD] and EC 924/2009, which regulate the Floats and Fees on Payments.

TPH offers a comprehensive Product Designer that enables definition of payment products 'on the fly' (means changes will become immediately active but could also be entered for future dated use).

Products can be defined based on payment characteristics. Payment characteristics can be made specific or can be wild carded to create specific or high level payment products.

**Product Determination**

Heavy Weight Product Conditions PHHPC16077759NS-20160101

Company	
CTBTR Indicator	<input checked="" type="radio"/> B <input type="radio"/> C
Payment Direction	<input type="radio"/> I <input type="radio"/> O <input type="radio"/> R <input checked="" type="radio"/> B
Domestic International	<input checked="" type="radio"/> D <input type="radio"/> I
Message Priority	<input type="radio"/> 1
Single Batch Clearing	<input type="radio"/> S <input type="radio"/> P <input type="radio"/> C <input type="radio"/> Y <input type="radio"/> N
Originating Source	OE
Return Trigger	<input type="radio"/> Y <input checked="" type="radio"/> *
Currency	USD
Charge Type	<input type="radio"/> Ben <input type="radio"/> Sha <input type="radio"/> Dur <input checked="" type="radio"/> *
Ordering Institution BIC Present	<input type="radio"/> Y <input checked="" type="radio"/> *
Beneficiary BIC Present	<input type="radio"/> Y <input checked="" type="radio"/> *
OrderingParty IBAN Present	<input type="radio"/> Y <input checked="" type="radio"/> *
BeneficiaryParty IBAN Present	<input type="radio"/> Y <input checked="" type="radio"/> *
Chargeable Change	<input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> *

**Admin Menu > Payment Hub > Product Determination GUI > Heavy Weight Product Condition**

OrderingParty IBAN Present	<input type="radio"/> Y <input checked="" type="radio"/> *
BeneficiaryParty IBAN Present	<input type="radio"/> Y <input checked="" type="radio"/> *
Chargeable Change	<input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> *
Final Code Word	*
Code Word Text	*
Intra Company Payment	<input type="radio"/> Y <input checked="" type="radio"/> *
Banking Priority	*
Originating DebitParty Country	*
OrderingParty IBAN Country	*
Sender Country	*
OrderingParty Residency	<input checked="" type="radio"/> R <input type="radio"/> N
Beneficiary Country	*
BeneficiaryParty IBAN Country	*
Receiver Country	*
Debit Account Type	*
Sender BIC	*
Receiver BIC	*
Incoming Message Type	*
Validation Flag	*
FromAmount,1	0
ToAmount,1	10,000,000
StartDate	01 JAN 2016
End Date	31 DEC 2016
LinkID	BBGTSQEURUSD-20160101

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Product can be defined using menu option: Admin Menu > Product Determination > Heavy weight product Condition > HeavyWeightProductCond List

### **Heavy Weight (HW) Product Determination**

All International Payments and Domestic Payments (Outgoing or Book) are generally categorized as Heavy Weight.

Cross border payments received and sent via SWIFT network and foreign currency book payments are categorised as “International” payments”. Payments in local currency originating and ending within the same Country are categorized as “Domestic”.

By ascertaining a Payment as Heavy Weight and further processing it under Heavy Weight Product Determination, several Outputs are being produced. These output parameters will directly impact the Payment processing or act as a key for other components to work.

#### **Note!**

Heavy Weight Product Determination will set the Charge Type to “SHA”. It will be invoked when the PSD Compliant Indicator is “Y” and Charge Type is not “SHA”.

### **Light Weight (LW) Product Determination**

Incoming Domestic Payments from Clearing, usually do not require complex Product set-up and processing logic. Hence, when a payment is identified as light weight by the “Assign Weight” component, then the Product Determination component will process it with a much simpler setup and retrieval logic

The aspects of the Light Weight Product Determination are different from that of the Heavy Weight.

Incoming Domestic Payments have the following characteristics:

- Company is fixed depending on the Source
- Direction is pre-determined
- Payments do not have Parent/Child dependency
- Payments are Domestic
- Message Priority is not relevant, as they are booked as and when received
- Currency is local (home) currency
- Client Conditions and Fees are not influenced by the Transaction Amount
- Charge Type is always SHA
- No Code-words are present
- Payments are PSD and EC compliant, if they originate in EU/EEA countries
- Messages are not repaired by PayFix
- Inter/Intra Company payments are not applicable

#### **Output Parameters Updated**

**Client Condition Product** - This will be filled by the User and become input to Client Condition component to set Client Conditions.

**Source Indicator** – “S” – “Source” or “G” – “Source Group” will be entered by the User. This flag is required to group payments from multiple sources and set Source Product.

**Source Product** – Product Determination has to read the Source Indicator and fill the “Source Product” with “Originating Source” if the “Source Indicator” is “S”. Otherwise, “Source Product Group” table should be looked up and the relevant “Source Product” linked in the table should be updated.

**Routing Product** – This defines the Routing Group. It will be input by the User and become an input parameter for Routing & Settlement.

**Impose Routing Flag** – This flag is used to impose the appropriate Routing Group for outgoing payments to be routed via local clearing.

**Fee Product** – This defines the Fee Group. It will be filled by the User and become an input parameter for Fees.

**Posting Product** – This defines the Posting Group. It will be set by the User and become an input parameter for Posting Scheme.

**Ledger Product Code** – It enables identification of the Product for description line/narrative purposes, even if the Posting Group and resulting Posting Lines are same for two different products.

**Debit Book Code** – This identifies the booking code for the debit entry on the payment transaction amount. It will be used by the Posting Scheme.

**Credit Book Code** – This identifies the booking code for the credit entry on the payment transaction amount. It will be used by the Posting Scheme.

**Debit Charge Book Code** – This identifies the booking code for the Charge Debit. It will be used by the Posting Scheme.

**Credit Charge Book Code** – This identifies the booking code for the Charge Credit. It will be used by the Posting Scheme.

**Debit VAT Book Code** – This identifies the booking code for VAT Debit. It will be used by the Posting Scheme.

**Credit VAT Book Code** – This identifies the booking code for VAT Credit. It will be used by the Posting Scheme.

**Regulatory Reporting Indicator** – This identifies whether the Payment has to fulfil Regulatory Reporting requirements. It will be input by the user during Product setup.

**New Priority** – It identifies the new Priority (numeric 0 to 10) of the Payment. User can choose to ignore the incoming priority and define a new Priority, which will be picked up during Product Determination.

**PSD Compliant Indicator** – This defines if the Payment is PSD Compliant. This indicator will be used by Date Determination and Fee components for processing the payment.

**EC Compliant Indicator** – This defines if the Payment is EC Compliant and the values will be set by the User.

**CreditIBANIndicator** - This Flag is an output from Product Determination and will be used by Fee component.

**BeneficiaryPartyIBANCountry** – This Flag is an output from Product Determination and it is used in Payment Finalization component.

**OrderingPartyIBANCountry** – This Flag is an output from Product Determination and it is used in Payment Finalization component.

**HeavyWeightProductID** – Product determination component would pass this product ID of the determined product to payment object. And this ID can be used by Billing component to retrieve product information.

**Banking Priority** – SWIFT messages with Tag 113 (Banking Priority) in User Header (Block 3) can have a code word to indicate the urgency of the Payment. For example, in Netherlands, GIRO Payments should be processed within a specific time window (2 hours). Hence this attribute can influence the “Routing Product” to choose an Urgent Channel and also to set a higher “Priority”.

**Message Priority** – This is a numeric priority (0 to 10) updated during mapping as “1” for Normal payments and “6” for “Urgent” Payments. This incoming priority can be modified by Code Words or in Product Determination by setting a new Priority.

### **How to choose the right product for a payment?**

As there are several attributes that make a Product, we require an efficient method of retrieving the right Product and the Output Flags relating to it.

Product Determination component will use the Peeling off mechanism to achieve this.

Peeling off means that data is retrieved from the database in several steps, from the most detail level to high level. The peeling off mechanism works on a Relational database containing tables with fixed attributes and indexes (views). The file that

stores the information is indexed with a compound key

Peeling off mechanism ensures the following for Product Determination –

- Ease of setup

- Minimum number of records

- Better Performance due to lower database interaction

# Product Determination

Heavy Weight Product Conditions PHPC16077759NS-20160101

Modify   Output Parameters   Audit

Client Condition Group 1 -  
Source Product Group 1 -  
Routing Product Group 1 -  
Fee Product Group 1 -  
Posting Product Group 1 -  
Filtering Product Group 1 -  
Ledger Product Code 1 -  
Duplicate Type 1  
Debit Book Code 1 -  
Debit Charge Book Code 1 -  
Debit VAT Book Code 1  
Regulatory Reporting Indicator 1  
New Priority 1  
Non STP Indicator 1  
PSD Compliant Flag 1 -  
EC Compliant Flag 1 -  
Forward Entry Flag 1  
STP Indicator Payment Order 1  
CurrencyMarket 1

DEFAULT      BANK  
S      G      BANK  
LEDGER      BANK  
BOOK      BANK  
BOKSHA\_STD  
ERBONS      BANK  
PH-BOOK      Book Payments  
1  
1  
Y  
Please Select  
Y  
D  
C  
Y  
N  
I  
Y      N  
Y      N  
Y      N  
CurrencyMarket 1

Impose Routing Flag 1  
T

Credit Book Code 1 -  
Credit Charge Book Code 1 -  
Credit VAT Book Code 1 -

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## Payment Attributes

Heavy Weight Product Conditions PPHPC16077759NS-20160101

	Modify	Output Parameters	Audit
Company	BNK		
CTRBTTR Indicator	<input checked="" type="radio"/> B <input type="radio"/> C		
Payment Direction	<input type="radio"/> I <input type="radio"/> O <input type="radio"/> R <input checked="" type="radio"/> B <input type="radio"/> D <input type="radio"/> I		
Domestic International			
Message Priority	1 <input checked="" type="radio"/> S <input type="radio"/> P <input type="radio"/> C <input type="radio"/> Y <input type="radio"/> N		
Single Batch Clearing			
Originating Source	OE		
Return Trigger	<input type="radio"/> Y <input checked="" type="radio"/> *		
Currency	USD		
Charge Type	<input type="radio"/> Ben <input type="radio"/> Sha <input type="radio"/> Our <input checked="" type="radio"/> *		
Ordering Institution BIC Present	<input type="radio"/> Y <input checked="" type="radio"/> *		
Beneficiary BIC Present	<input type="radio"/> Y <input checked="" type="radio"/> *		
OrderingParty IBAN Present	<input type="radio"/> Y <input checked="" type="radio"/> *		
BeneficiaryParty IBAN Present	<input type="radio"/> Y <input checked="" type="radio"/> *		
Chargeable Change	<input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> *		
OrderingParty IBAN Present	<input type="radio"/> Y <input checked="" type="radio"/> *		
BeneficiaryParty IBAN Present	<input type="radio"/> Y <input checked="" type="radio"/> *		
Chargeable Change	<input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> *		
Final Code Word			
Code Word Text			
Intra Company Payment			
Banking Priority			
Originating DebitParty Country			
OrderingParty IBAN Country			
Sender Country			
OrderingParty Residency	<input checked="" type="radio"/> * <input type="radio"/> R <input type="radio"/> N		
Beneficiary Country			
BeneficiaryParty IBAN Country			
Receiver Country			
Debit Account Type			
Sender BIC			
Receive BIC			
Incoming Message Type			
Validation Flag			
FromAmount.1	0		
ToAmount.1	10,000,000		
StartDate	01 JAN 2016		
End Date	31 DEC 2099		
LinkID	BBD15OE*USD*****-20160101		

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- TPH will always pick up the product that is the closest match to the payment instruction.
- Attributes that can be defined to create products in Heavy, Medium and Light product designers are listed above

## Payment Attributes

**Medium Weight Product Conditions | 10-20160101**

Modify		Output Parameters		Audit	
Company	BNK	Source	BACS	Msg Type	BACSCC BACS CHEQUE CREDIT
Direction	<input type="radio"/> I <input type="radio"/> O <input type="radio"/> R <input checked="" type="radio"/> B	Domestic International	<input checked="" type="radio"/> D <input type="radio"/> I	Clearing Transaction Type	CC
Crg Trn Type	Single/Batch/Crg	Charge Type	<input type="radio"/> Ben <input checked="" type="radio"/> Sha <input type="radio"/> Our	Settlement Indicator	<input type="radio"/> Y <input checked="" type="radio"/> *
Currency	USD	From Amount	0	Start Date	01 JAN 2016
	To Amount	9,999,999,999	End Date	31 DEC 2099	
Source Group	*	LinkID	BACSBACSCCD*CC-20160101		
Message Type	CHQZEP				
Clearing Nature Code	*				
Ben Pty IBAN/Ctry	*				
Ord Pty IBAN/Ctry	*				
Beneficiary Party IBAN Present	<input type="radio"/> Y <input checked="" type="radio"/> *				
Ordering Party IBAN Present	<input type="radio"/> Y <input checked="" type="radio"/> *				
Ben BIC Present	<input type="radio"/> Y <input checked="" type="radio"/> *				
Ord BIC Present	<input type="radio"/> Y <input checked="" type="radio"/> *				
Ord Pty Residency	<input type="radio"/> * <input checked="" type="radio"/> R <input type="radio"/> N				
Final Codeword	*				
Start Date	01 JAN 2016				
End Date	DD MMMM YYYY				
LinkID	BCCPISHAUSD*CHQZEP*****-20160101				

**Light Weight Product Condition | PPLPC141125L3RH-20160101**

Modify		Output Parameters		Audit	
Company	BNK	Source	BACS	Msg Type	BACSCC BACS CHEQUE CREDIT
Direction	<input checked="" type="radio"/> D <input type="radio"/> I	Domestic International		Clearing Transaction Type	CC
Clearing Nature Code	*	Settlement Indicator	<input type="radio"/> Y <input checked="" type="radio"/> *	Start Date	01 JAN 2016
LinkID	BACSBACSCCD*CC-20160101				



When you compare the attributes for Heavy, Medium and Light weight, the payment characteristics field are high in heavy weight, less in medium weight and very less in Light weight.

## Influence payment processing

The screenshot displays the SAP Fiori interface for 'Influence payment processing'. The main area is titled 'Heavy Weight Product Conditions' with reference number 'PPHPC16077759NS-20160101'. It contains tabs for 'Modify', 'Output Parameters' (which is selected), and 'Audit'. The 'Output Parameters' tab shows several configuration fields:

- Client Condition Group.1**: DEFAULT (radio button G selected)
- Source Product Group.1**: LEDGER (radio button G selected)
- Routing Product Group.1**: BOOK
- Fee Product Group.1**: BOKSHA\_STD
- Posting Product Group.1**: ERBONS
- Filtering Product Group.1**: PH-BOOK
- Ledger Product Code.1**: Book Payments
- Duplicate Type.1**: Please Select
- Debit Book Code.1**: 1
- Debit Charge Book Code.1**: 1
- Debit VAT Book Code.1**: 1
- Regulatory Reporting Indicator.1**: Y
- New Priority.1**: Please Select
- Non STP Indicator.1**: Y
- PSD Compliant Flag.1**: N (radio button selected)
- EC Compliant Flag.1**: N (radio button selected)
- Forward Entry Flag.1**: Y (radio button selected)
- STP Indicator Payment Order.1**: Y (radio button selected)
- CurrencyMarket.1**: Please Select

A right-hand panel titled 'Impose Routing Flag.1' shows the selection of 'Y' for the routing flag. Below this, there are three groups of book codes:

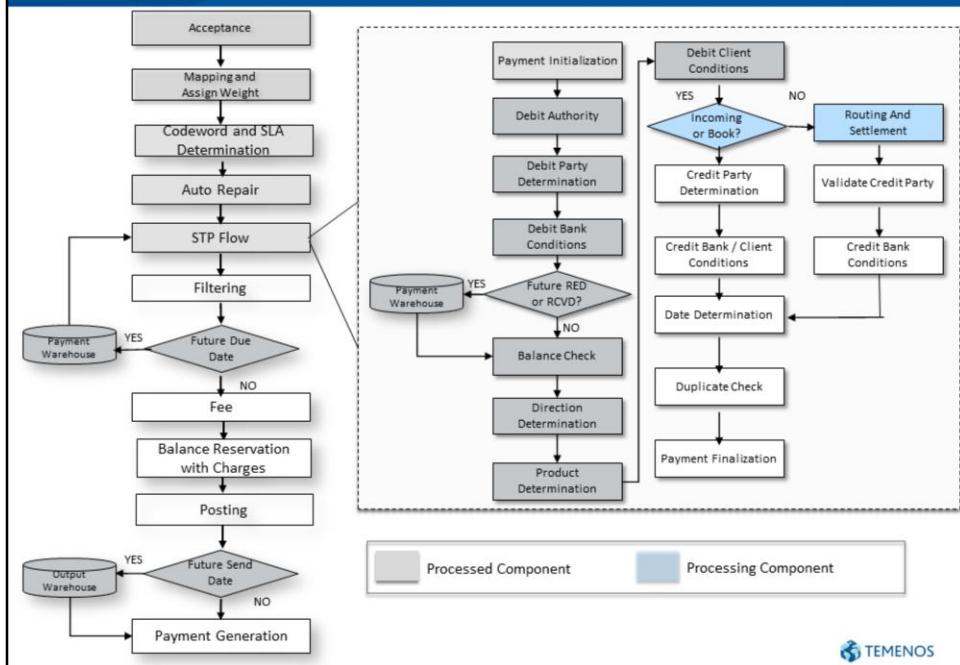
- Credit Book Code.1**: \$1
- Credit Charge Book Code.1**: \$1
- Credit VAT Book Code.1**: \$1

The Temenos logo is visible in the bottom right corner.

Based on various payment characteristics, once a payment product is determined for a payment, further processing of a payment can be influenced such as

- The routing rule that needs to be applied
- The fee that needs to be charged
- The posting definition to be used (The definition of how the accounting entries need to be raised)
- The client agreements that need to be used
- Route the payment to repair (Force Non-STP)
- Determine if the payment is PSD/EC compliant
- Transaction codes that need to be used to book transaction amount, charges and VAT
- Make a payment non STP based on its characteristics
- Specify if forward cash position updates (forward entries) are required
- Some items like Forward Entry Flag and STP Indicator Payment Order are not available for medium weight products.
- Filtering product is now available in all Heavy, Medium and Light weight product conditions.

## Routing and Settlement



Routing and Settlement is regarded as one of the most important functional area for processing a payment.

R & S is applicable only for payments with a direction of Outbound or Redirected. From a functional point of view the R & S document covers the following four broad functional areas.

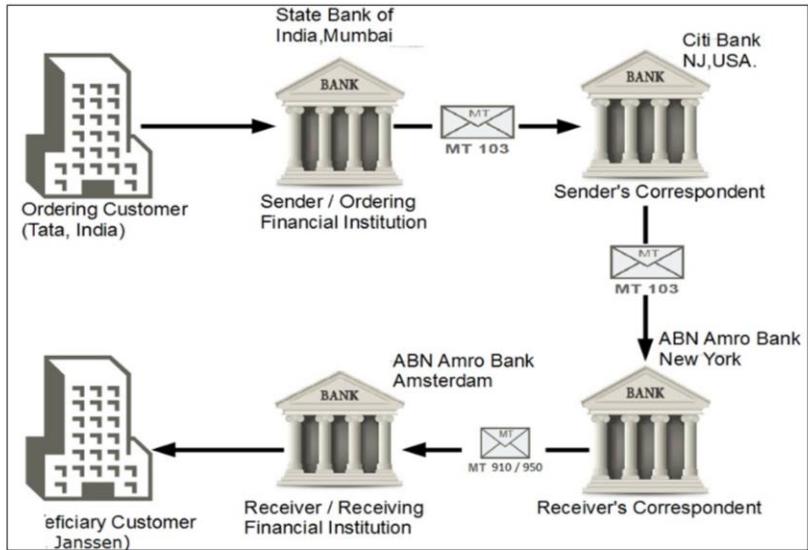
Selection of R & S channel

Dates Processing

Channel Validations

Credit account and credit party (s) determination

## Routing & Settlement

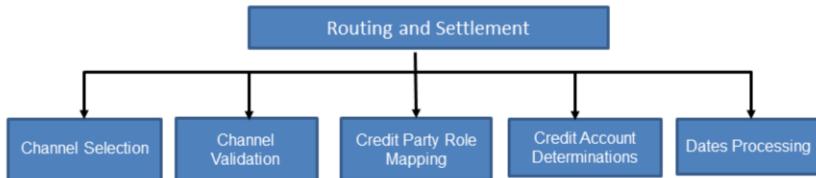


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The Routing and Settlement component provides various medium for the Bank through which an Outbound or Redirected CTR/BTR payment can be routed and settled.

These are distinct channels which help in routing a payment depending on its characteristics.

## Routing & Settlement



 TEMENOS

### R & S Channel Determination

The Routing and Settlement component provides various medium for the Bank through which an Outbound or Redirected CTR/BTR payment can be routed and settled.

These are distinct channels which help in routing a payment depending on its characteristics.

**If a payment needs to be sent to a particular Country, How does R&S enhance in routing the payment?**

For example, if a payment needs to be routed to Germany and the R & S rules are set in such a way that the Credit bank can be reached through its country correspondent then the R & S module will determine the country correspondent for Germany and route the payment through that bank.

R & S is inbuilt with a feature to store a “Preferred Correspondent” per country (also known as country correspondent). Based on Currency and Product characteristics, R & S can define more than one country correspondent per country.

R & S rules can be configured in such a way that it can select a “Preferred Correspondent” for routing a payment.

**Can the payment be routed based on the payment Currency ?**

Yes. R & S has the ability to store a “Currency Correspondent” per country . Based on the Product characteristics, R & S can have more than one currency correspondent per country .

R & S rules can be configured in such a way that it can select a “Currency

Correspondent " for routing a payment.

For example, if a payment in USD needs to be routed to Deutsche Bank, Germany and the R & S rules are set in such a way that the credit bank can be reached through its currency correspondent then the R & S module should determine the currency correspondent for Deutsche Bank, Germany and route the payment through that bank.

#### **Can the payment be routed through a Clearing Channel using R&S?**

Yes. R & S has the competence to route a payments to the credit party using a clearing channel or RTGS system. For example, EMZ clearing can be used to route a EUR payment in Germany.

Every clearing channel or RTGS system has a set of rules for the payments that it can process. For example, TARGET2 can only process payments in EUR currency. The payment should therefore clear these channel level validations for it to successfully select the Clearing channel or RTGS R & S option .

#### **LORO or NOSTRO relationship**

R & S has the ability to route a payment to the credit party by using their LORO or NOSTRO accounts.

If there are more than one LORO accounts for a particular BIC or if there are more than one NOSTRO accounts for a particular BIC then R & S has the competence to define a default LORO or NOSTRO account to be used.

#### **Head Office - Branch relationship**

There is also another option to store a head office - branch relationship (on BIC code level) within the Payment engine. R & S rules can be configured such that a payment can refer to these relationships and route a payment.

For example, DEUTDEFF can be defined as the head office for DEUTDEFF500. If a payment is to be routed to DEUTDEFF500 and the R & S rules are set in such a way that the credit bank can be reached through its head office then R & S should route the payment through DEUTDEFF.

#### **Provide an account for settlement**

In R & S, it is conceivable to define an account through which the settlement can be carried out. This account can be different from the LORO or NOSTRO account of the credit bank.

#### **SERIAL and COVER payments**

When SWIFT is used to route a payment (using MT103 message or MT103+ message), the payment can be sent through SERIAL and COVER method using R & S. If the beneficiary bank (Account servicing institution of the beneficiary party) has a correspondent relationship with the company then the R & S can route the payment through a LORO or NOSTRO.

If the beneficiary bank can be reached through clearing channels/RTGS system then R & S can route the payment through that clearing channel/RTGS system.

With '**SERIAL**' method of payment, the payment message (MT103) should be sent to a correspondent bank as determined by the R & S. The correspondent bank is

expected to send the payment message to the beneficiary bank.

**How does R&S assures in routing the payment through its channel accurately?**

R & S carries out channel validations on any channel selected through it . If the channel level validations fail then R & S should evaluate on how the next channel is to be selected or whether the payment is to be sent to repair .

**Reachability Check**

For some clearings the reachability check is carried out just to check if it is a valid NCC. For example, any bank in UK that has a valid sort code is reachable by the BACS clearing.

Reachability check is done for Clearings (ACH and RTGS) to check if the Beneficiary Bank is reachable through the Clearing Channel selected. The check is done against the directory of participant banks (direct and indirect) for the Clearing selected.

If the reachability check fails for a clearing channel/RTGS system then it implies that routing is not possible with that clearing channel/RTGS system.

For LORO (or NOSTRO), R & S shall be required to check if the credit BIC is a valid BIC and if they have a LORO (or NOSTRO) account with the company. If present, then the credit BIC is reachable by LORO (or NOSTRO).

**RMA Check**

Check on RMA is to ensure that TPS Bank (Sending Bank) is allowed to send messages to the Receiving Bank.

**Cut off time check**

R&S checks if the payment is within the cut-off time for the selected Clearing or Correspondent, to ensure that the payment is accepted.

**Format validations**

A clearing channel, RTGS systems or SWIFT can accept messages that comply to certain pre-defined rules (Format validations). R & S shall be required to check if the Outgoing/Redirected payment meets these format validation rules. If the format validations are successfully cleared then the Routing channel can be selected.

## Routing & Settlement

**Routing Product List**

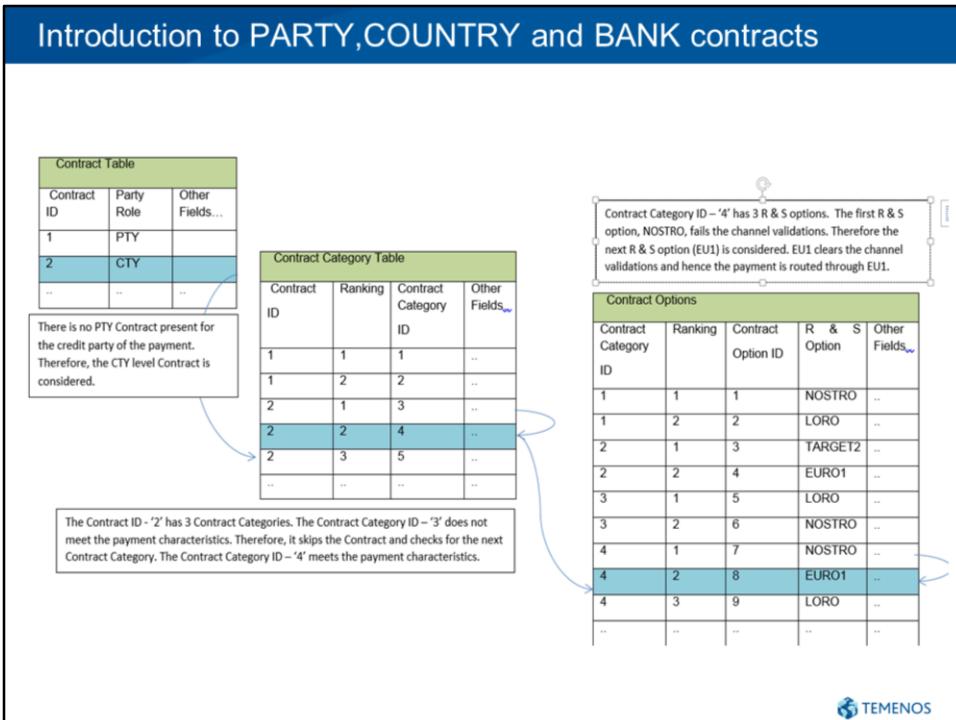
ID	Company	Description	
CHQCLG	BNK	Cheque Clearing	/ O @@
COVER	BNK	COVER	/ O @@
DEFAULT	BNK	DEFAULT	/ O @@
EBAINST	BNK	EBAINST	/ O @@
EBAINSTIP	BNK	EBAINSTIP	/ O @@
ERR	BNK	Test Product	/ O @@
FCLG	BNK	Foreign Cheque Clearing	/ O @@
FEDWIRE	BNK	FEDWIRE	/ O @@
LCLG	BNK	Local Cheque Clearing	/ O @@
LEDGER	BNK	LEDGER	/ O @@
NORMAL	BNK	NORMAL	/ O @@
OCLG	BNK	Outstation Cheque Clearing	/ O @@
RP1	BNK	RP1	/ O @@
SEPA	BNK	SEPA Credit Transfer	/ O @@
TARGET2	BNK	TARGET2	/ O @@



- Should be set on the basis of the list of Routing Products set by Product Determination or \* (Default is \*)

The routing engine enables definition of routing rules per bank, country and credit bank level. Each of these rules is grouped and a routing product can be created. Such routing products can be attached to payment products and hence each payment product can have a specific routing product defined.

## Introduction to PARTY,COUNTRY and BANK contracts



R & S can hold three types of Contracts - Country Contract, Party Contract and Bank level Default Contract.

The Party contract is checked for the credit party in the payment. In a Party Contract, the bank specifies on how the payment should be routed and settled with the credit party.

The Country contract is checked for the destination country of the payment. In a Country Contract, the bank specifies on how it wants to route and settle payments to be sent to a specific country.

The default Bank level contract is applied if a corresponding Country and Party contract could not be found.

For any payment, if a relevant contract is not found then it is a set-up issue and the payment should be routed to repair.

Contracts can be defined for a credit party of a payment or for the destination country of a payment or for a bank policy.

- A Contract defined for the credit Party is called as a 'PTY' Contract; Party Contract is the Most Specific.
- A Contract defined for the destination Country is called as a 'CTY' Contract; Country Contract is Less Specific.
- A Contract defined for bank policy is called as a BNK contract. Bank Contract is the Least Specific.

## Routing & Settlement

Contract Information List

Contract ID	Company	Contract Type	Business Line	Routing Product	Party ID Type	Party ID	Dest Country	End Date
BNK.EBAINSTIP-20160101	BNK	PTY	*	EBAINSTIP	B	ABINANL20		
BNK.SEPA-20160101	BNK		*	SEPA				
BNK.LEDGER-20161102	BNK		*	LEDGER				
BNK.FEDWIRE-20160101	BNK		*	FEDWIRE				
* BNK.EBAINST-20160101	BNK	BNK	*	EBAINST				
BNK.DEFAULT-20160101	BNK	BNK	*	DEFAULT				
BNK.COVER-20161102	BNK	BNK	*	COVER				
BNK.--20160102	BNK	BNK	*	*				

Contract : BNK.DEFAULT-20160101

Please Select

LinkID	BNKDEFAULT20160101	Business Line	DEFAULT			
Company ID	BNK	Routing Product	DEFAULT			
Contract Type	<input type="radio"/> Pty <input type="radio"/> Cty <input checked="" type="radio"/> BNK	Party ID				
Party ID Type	<input type="radio"/> B <input checked="" type="radio"/> N	Start Date	01 JAN 2016			
Destination		End Date	31 DEC 2099			
Ranking*	SLA Code	Priority	Currency Code	Transaction Lower Limit	Transaction Upper Limit	Charge Option
1.00			EUR	0	9,999,999	<input checked="" type="radio"/> Ben <input type="radio"/> Sha <input type="radio"/> Our
3.00			GBP	0	9,999,999	<input checked="" type="radio"/> Ben <input type="radio"/> Sha <input type="radio"/> Our
5.00			USD	0	9,999,999	<input checked="" type="radio"/> Ben <input type="radio"/> Sha <input type="radio"/> Our
6.00			HKD	0	99,999,999	<input checked="" type="radio"/> Ben <input type="radio"/> Sha <input type="radio"/> Our

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Routing Contract – PTY, CTY, BNK specific maintenance varies depends on the Business Line and Routing product

Routing Contract Category – Currency, SLA specific maintenance, Amount and Charge bearer options perspective

Routing Options – Credit Account determination and depends on Serial or Cover method.

Field ContractType signifies whether it is a party (PTY), Country (CTY) or a Bank(BNK) level contract.

- Based on the business line of customers (TARGET field in the T24 Customer application), a routing product can be used. For instance, corporate customers can use a routing product which always uses RTGS channels for settlement. This is controlled using the field Business Line.
- Field PartyIDType and PartyID signify how the credit party is identified – It can be using a BIC or a NCC (National Clearing Code). Should be present only if the Contract Type is set to PTY.
- Field Destination can be used to specify routing rules based on the credit country. Should be present only if the Contract Type is set to CTY. Should be one of the countries defined in the country and IBAN structure table.

- Based on the SLA (Service Level Agreement) between banks, routing rules can be defined. Use field SLACode for this purpose. Channels are chosen in order of the ranks. Lowest value means highest rank (Rank 1 is highest rank)Channels through which payments can be routed

## Routing & Settlement – Contd

The screenshot displays a configuration interface for Routing & Settlement. At the top, there are tabs: RIS Option, RIS Option - Account, RIS Option - Party, and Audit. The main area contains several rows of configuration data:

Ranking*	Option Ranking*	RIS Option*	Message Channel	Cover Indicator	Last Time	Alternative For CallOff*	Alternative For RIS*
1.00	10.00	LORD	SW	<input type="radio"/> Y <input checked="" type="radio"/> N	00:00	<input checked="" type="radio"/> N <input type="radio"/> A <input type="radio"/> C <input type="radio"/> R	<input checked="" type="radio"/> N <input type="radio"/> C <input type="radio"/> R
	20.00	NOSTRO	SW	<input type="radio"/> Y <input checked="" type="radio"/> N	00:00	<input checked="" type="radio"/> N <input type="radio"/> A <input type="radio"/> C <input type="radio"/> R	<input checked="" type="radio"/> N <input type="radio"/> C <input type="radio"/> R
	30.00	PREF	SW	<input type="radio"/> Y <input checked="" type="radio"/> N	00:00	<input type="radio"/> N <input checked="" type="radio"/> A <input type="radio"/> C <input type="radio"/> R	<input type="radio"/> N <input type="radio"/> C <input checked="" type="radio"/> R
3.00	10.00	LORD	SW	<input type="radio"/> Y <input checked="" type="radio"/> N	00:00	<input type="radio"/> N <input checked="" type="radio"/> A <input type="radio"/> C <input type="radio"/> R	<input checked="" type="radio"/> N <input type="radio"/> C <input type="radio"/> R
	20.00	NOSTRO	SW	<input type="radio"/> Y <input checked="" type="radio"/> N	00:00	<input type="radio"/> N <input checked="" type="radio"/> A <input type="radio"/> C <input type="radio"/> R	<input checked="" type="radio"/> N <input type="radio"/> C <input type="radio"/> R
	30.00	PREF	SW	<input type="radio"/> Y <input checked="" type="radio"/> N	00:00	<input type="radio"/> N <input checked="" type="radio"/> A <input type="radio"/> C <input type="radio"/> R	<input type="radio"/> N <input type="radio"/> C <input checked="" type="radio"/> R
3.00	10.00	LORD	SW	<input type="radio"/> Y <input checked="" type="radio"/> N	00:00	<input type="radio"/> N <input type="radio"/> A <input type="radio"/> C <input type="radio"/> R	<input checked="" type="radio"/> N <input type="radio"/> C <input type="radio"/> R
	20.00	NOSTRO	SW	<input type="radio"/> Y <input checked="" type="radio"/> N	00:00	<input checked="" type="radio"/> N <input type="radio"/> A <input type="radio"/> C <input type="radio"/> R	<input checked="" type="radio"/> N <input type="radio"/> C <input type="radio"/> R

At the bottom right, there are navigation icons: a blue square with an upward arrow, a blue square with a downward arrow, and a blue square with a left arrow.

Continuation of Routing & Settlement Screenshot

## Routing & Settlement

Loro Nostro Account List											
Loro Nostro Account ID	Company	BIC Code	Acct Type	Acct Company	Acct Currency	Acct Number	Preferred Debit	Preferred Credit	End Date	LinkID	
32-20180316	BNK	SBINNBBINR	N	BNK	INR	74888	Y	Y	20991231	SBINNBBINRIN-20180316	<input checked="" type="checkbox"/> <input type="radio"/> 00
15-20180316	BNK	PNCUS33	N	BNK	EUR	74799	Y	Y	20991231	PNCUS33EURIN-20180316	<input checked="" type="checkbox"/> <input type="radio"/> 00
19-20180316	BNK	PNCUS33	N	BNK	GBP	74818	Y	Y	20991231	PNCUS33GBPIN-20180316	<input checked="" type="checkbox"/> <input type="radio"/> 00
1-20180316	BNK	PNCUS33	V	BNK	EUR	21024	Y	Y	20991231	PNCUS33EURV-20180316	<input checked="" type="checkbox"/> <input type="radio"/> 00
3-20180316	BNK	PNCUS33	V	BNK	GBP	21032	Y	Y	20991231	PNCUS33GBPV-20180316	<input checked="" type="checkbox"/> <input type="radio"/> 00
33-20180316	BNK	NEOSZAJU	N	BNK	ZAR	74926	Y	Y	20991231	NEOSZAJUZARIN-20180316	<input checked="" type="checkbox"/> <input type="radio"/> 00
29-20180316	BNK	NBPLPLPW	N	BNK	PLN	74907	Y	Y	20991231	NBPLPLPWPLNIN-20180316	<input checked="" type="checkbox"/> <input type="radio"/> 00
30-20180316	BNK	NBDAEAEAA	N	BNK	AED	74861	Y	Y	20991231	NBDAEAEAAEDIN-20180316	<input checked="" type="checkbox"/> <input type="radio"/> 00
2-20180316	BNK	MIDLGB22	N	BNK	GBP	21016	Y	Y	20991231	MIDLGB22GBPIN-20180316	<input checked="" type="checkbox"/> <input type="radio"/> 00
28-20180316	BNK	MELYU533	N	BNK	USD	20753	Y	Y	20991231	MELYU533USDIN-20180316	<input checked="" type="checkbox"/> <input type="radio"/> 00

Table	Preferred Correspondent
ID	206-20180316
Field Name	Field Value
Company ID	BNK
Destination Country Code	NL
Currency of the Transaction	USD
Routing Product	*
Preferred Correspondent ID Type	<input checked="" type="radio"/> B <input type="radio"/> N
Preferred Correspondent ID	ZYRVUS30
LinkID	NLUSD*-20180316
Start Date	16 MAR 2018
End Date	31 DEC 2099

Table	Standing Settlement Instructions
ID	AEIBFRPP.EUR.*-20180316
Field Name	Field Value
Company ID	BNK
Bank Name	AMERICAN EXPRESS BANK
City	PARIS
Ccy Correspondent ID Type	<input checked="" type="radio"/> B <input type="radio"/> N
Ccy Correspondent ID	CITIFRPP
Override Through Upload	<input checked="" type="radio"/> Y <input type="radio"/> N
Start Date	16 MAR 2018
End Date	31 DEC 2099

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R&S has the capability to route payments via any of the following channels

1. LORO
2. NOSTRO
3. PREF (Preferred or country correspondent)
4. SSI (Currency correspondent)
5. AGENT
6. ACCOUNT
7. PARTY
8. Clearing Channels (Eg: STEP2 and USACH)
9. RTGS Systems (Eg: TARGET2, CHATS and FEDWIRE)

### Note!

If the channel validations fail then the R & S will decide to skip that channel and move on the next defined Routing channel.

### Dates Determination

The Dates module shall be required to calculate the CVD and Processing Dates of the payment.

If the payment message has a requested CVD then R & S, in certain cases, shall be required to try to meet that required CVD.

R & S has the ability to traverse through a list of pre-defined routing channels to find a channel through which the requested CVD can be met. If the requested CVD is not met then the payment can be sent to repair or CVD / processing date can be

advanced.

#### **Credit Account Determination**

After the determination of the Routing Channel for the payment, R & S is also expected to come up with the credit account for the payment.

For an outgoing or redirected payment, the credit party account can be a LORO or NOSTRO account of the correspondent or the NOSTRO of the RTGS system or it can be an internal/suspense account corresponding to a channel.

The internal account should be used in case the payment is expected to go to a clearing channel as a clearing batch file.

#### **Credit Party(s) Determination**

R & S is also meant to build a list of credit parties to be considered for routing the message.

This list of credit parties would be used by payment advising to create the SWIFT message.

For example, if a payment is to be routed through a preferred correspondent then both – the preferred correspondent and the beneficiary bank should be stored within R & S. These credit parties would be used by the payment generation module to create the payment message.

There can be a maximum of six credit parties that the R & S should handle on a payment.

If the number of credit parties exceeds six then the payment is sent to repair. (While using a serial method the payment can handle a maximum of three credit parties.) If the number of credit parties exceeds this limit then the payment is sent to repair.

#### **Credit party role mapping**

R & S will populate the credit party queue with a list of credit parties involved in routing the payment.

The credit parties for a payment would be mapped to the following parties in the message – **RECVR, SNDCBK, RCVCBK, TRMINS, INTINS, ACWINS and BENINS**

## Routing & Settlement

Table	Agent
ID	ATALUS30-20180316
Field Name	Field Value
Company ID	BNK
Agent ID Type	<ul style="list-style-type: none"> <li>• B</li> <li>• N</li> </ul>
Agent ID	ANBTUS40
Start Date	16 MAR 2018
End Date	DD MMM YYYY

Results 1 - 15 of 15

Cleaning Directory ID	Company	BIC Code	Receiver	Account Holder	Institution Name	City/Location	Participation Type	National Cleaning Code	Over Through Upload	State Or Territory	Funds Direct Only	Funds Trans Status	End Date
TARGET1EURB.BABNHL2A-02181031	BNK	ABNLNL2A	ABNLNL2A	ABN AMRO BANK		NL	DP		N		Y	✓ O/R	
STEP1EUR.B.BABNHL2A-02180316	BNK	ABNLNL2A	ABNLNL2A	ABN AMRO BANK N.V.			DP	ABNA	N		Y	✓ O/R	
FCL0.EUR.B.BARC0830-02160101	BNK	BARC0830	BARC0830	BARC0830	Berleya		DP		N		Y	✓ O/R	
LCL0.USD.B.BARC0830-02160101	BNK	BARC0830	BARC0830	BARC0830	Berleya LOCAL		DP		N		Y	✓ O/R	
OCL0.USD.B.BARC0830-02160101	BNK	BARC0830	BARC0830	BARC0830	Berleya OUTSTATION		DP		N		Y	✓ O/R	
STEP2EUR.B.BARC0832-02180316	BNK	BARC0832	BARC0832	BARC0832	BARCLAYS BANK PLC		DP	204744	N		Y	✓ O/R	
STEP2EUR.B.BARCNL2I-02180316	BNK	BARCNL2I	BARCNL2I	BARCNL2I	BARCLAYS BANK PLC AMSTERDAM BRANCH		DP	BARCHNL2I	N		Y	✓ O/R	
TARGET2EUR.B.BLCMRSBL-02180316	BNK	BLCMRSBL	COBADEF	COBADEF	BLOM BANK FRANCE S.A.	BUCHAREST	IP		N		Y	✓ O/R	
STEP2EUR.B.BNPFRPP-02180316	BNK	BNPFRPP	BNPFRPP	BNPFRPP	BNP PARIBAS		DP	3000400033	N		Y	✓ O/R	
FEWIRE.USD.B.BOFAU033-02160101	BNK	BOFAU033		BOFAU033			DP		N		Y	✓ O/R	



## LORO or NOSTRO RELATIONSHIP

Loro Nostro Account List										
Loro Nostro Account ID	Company	BIC Code	Acct Type	Acct Company	Acct Currency	Acct Number	Preferred Debit	Preferred Credit	End Date	LinkID
32-20180316	BNK	SBININBB	N	BNK	INR	74888	Y	Y	20991231	SBININBBINRN-20180316
15-20180316	BNK	PNCUCU333	N	BNK	EUR	74799	Y	Y	20991231	PNCUCU333EURN-20180316
19-20180316	BNK	PNCUCU333	N	BNK	GBP	74818	Y	Y	20991231	PNCUCU333GBP-20180316
1-20180316	BNK	PNCUCU333	V	BNK	EUR	21024	Y	Y	20991231	PNCUCU333EURV-20180316
3-20180316	BNK	PNCUCU333	V	BNK	GBP	21032	Y	Y	20991231	PNCUCU333GBPV-20180316
33-20180316	BNK	NEDS2AZJ	N	BNK	ZAR	74926	Y	Y	20991231	NEDS2AZJZAPN-20180316
29-20180316	BNK	NBPLPLPW	N	BNK	PLN	74907	Y	Y	20991231	NBPLPLPWPLNN-20180316
30-20180316	BNK	NBADAEEAA	N	BNK	AED	74861	Y	Y	20991231	NBADAEEAAEEND-20180316
2-20180316	BNK	MDLGB22	N	BNK	GBP	21016	Y	Y	20991231	MDLGB22GBPN-20180316
28-20180316	BNK	MELYU533	N	BNK	USD	20753	Y	Y	20991231	MELYU533USDN-20180316

Table	Loro Nostro Account
ID	32-20180316
Field Name	Field Value
Company ID	BNK
Party BIC	SBININBB
Type of Account Number	N
Start Date	16 MAR 2018
Link ID	SBININBBINRN-20180316
Account Currency	INR
End Date	31 DEC 2099
Account Number Company ID	BNK
Account Number	74888
Owning BIC	SBININBB
Preferred Debit Account Number	• Y • N
Preferred Credit Account Number	• Y • N
Charges Indicator	• Y • N
Account Number in Holding Bank	
Account Short Name	

Admin Menu > Payment Hub >  
Routing and Settlement GUI > Loro  
Nostro Account

R & S will route a payment to the credit party by using their LORO or NOSTRO accounts.

LORO and NOSTRO account definitions will be stored in PP.LORO.NOSTRO.ACCOUNT table. The actual account will reside in the DDA.

If there are more than one LORO accounts for a particular BIC or if there are more than one NOSTRO accounts for a particular BIC then a default LORO or NOSTRO account to be defined and used.

The payment should clear the channel level validations for it to successfully select the LORO or NOSTRO R & S option.

The routing channel applied would depend on the order in which they are configured.

For example, a payment can have the channels defined in the following order –

NOSTRO PREF and SSI. The option NOSTRO is evaluated first, if R & S is not possible through that channel then PREF is checked. If PREF also fails then SSI is evaluated. (Channel Validations and Dates determine on whether the R & S is possible or not.)

R & S will also process the payments release from warehouse as if they were new R & S requests. Through the Manual entry screens and Repair screens, a user can impose the channel through which the payment can be routed. If such a payment goes to warehouse then on release from warehouse, it will honour the imposed channel.

## PREFERRED CORRESPONDENT

Admin Menu > Payment Hub > Routing and Settlement GUI > Preferred Correspondent

Preferred Correspondent List								
Pref Corr ID	Company	Dest Country	Tran Ccy	Routing Product	Corr ID Type	Pref Corr	End Date	
1-20180316	BNK	US	USD	*	B	BOFAUS33		<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
206-20180316	BNK	NL	USD	*	B	ZYRVUS30	20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
238-20180316	BNK	NL	HKD	*	B	ZYACHKA0IDJ	20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
174-20180316	BNK	NL	GBP	*	B	ABNANL20	20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
171-20180316	BNK	HK	GBP	*	B	ABNANL20	20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
2-20180316	BNK	GB	GBP	*	B	BARCGB22		<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
3-20180316	BNK	FR	EUR	*	B	CITIFRPP		<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
216-20180316	BNK	DE	USD	*	B	ZYRVUS30	20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
248-20180316	BNK	DE	HKD	*	B	ZYACHKA0IDJ	20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
184-20180316	BNK	DE	GBP	*	B	ABNANL20	20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
4-20180316	BNK	*	EUR	*	B	CITIFRPP		<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>

Table	Preferred Correspondent
ID	206-20180316
Field Name	Field Value
Company ID	BNK
Destination Country Code	NL
Currency of the Transaction	USD
Routing Product	*
Preferred Correspondent ID Type	<input checked="" type="radio"/> B <input type="radio"/> N
Preferred Correspondent ID	ZYRVUS30
LinkID	NLUSD*-20180316
Start Date	16 MAR 2018
End Date	31 DEC 2099



- R & S stores a “Preferred Correspondent” per country (also known as country correspondent). Based on Currency and Product characteristics, R & S can define more than one country correspondent per country.
- R & S rules can be configured in such a way that it can select a “Preferred Correspondent” for routing a payment.
- For example, if a payment needs to be routed to Germany and the R & S rules are set in such a way that the Credit bank can be reached through its country correspondent then the R & S module should determine the country correspondent for Germany and route the payment through that bank.

## CURRENCY CORRESPONDENT

Admin Menu > Payment Hub > Routing and Settlement GUI > Standing Settlement Instructions

Standing Settlement Instruction List			
SSI ID	Company	Bank Name	City
AEIBFRPP.EUR.*-20180316	BNK	AMERICAN EXPRESS BANK	PARIS
AIBKGB22.GBP.*-20180316	BNK	ALLIED IRISH BANK	LONDON
ALEIGB20.GBP.*-20180316	BNK	SANTANDERUKPLC	GREATBRITAIN
BARCCB20.GBP.*-20180316	BNK	BARCLAYSBANKPLC	GREATBRITAIN
BKIDINBO.INR.*-20180316	BNK	BANKOFININDIA	INDIA
BSILSGS0.SGD.*-20180316	BNK	BSIBANKLIMITED	SINGAPORE
CHASUS33.USD.*-20180316	BNK	CHASE MANHATTAN BANK	NEW YORK
EWBKHKH0.HKD.*-20180316	BNK	EASTWESTBANK	HONGKONG
FAEASGS0.SGD.*-20180316	BNK	FAREASTERNBANK	SINGAPORE
HGASHKH0.HKD.*-20180316	BNK	RBSASIALTD	HONGKONG
IOBAINBO.INR.*-20180316	BNK	INDIANOVERSEAS	INDIA

Table	Standing Settlement Instructions
ID	AEIBFRPP.EUR.*-20180316
Field Name	Field Value
Company ID	BNK
Bank Name	AMERICAN EXPRESS BANK
City	PARIS
Ccy Correspondent ID Type	<ul style="list-style-type: none"> <li>• B</li> <li>• N</li> </ul>
Ccy Correspondent ID	CITIFRPP
Override Through Upload	<ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul>
Start Date	16 MAR 2018
End Date	31 DEC 2099

 TEMENOS

- R & S stores a “Currency Correspondent” per country. Based on the Product characteristics, R & S can have more than one currency correspondent per country.
- R & S rules can be configured in such a way that it can select a “Currency Correspondent” for routing a payment in the Standard Settlement Instruction table.
- For example, if a payment in USD needs to be routed to Deutsche Bank, Germany and the R & S rules are set in such a way that the credit bank can be reached through its currency correspondent then the R & S module should determine the currency correspondent for Deutsche Bank, Germany and route the payment through that bank.

## Channel Cut-off

Channel CutOff List										
Channel Cutoff ID	Company	Channel	Currency Code	CTR/BTR	Payment Direction	Priority	Message Type	Source	End Date	
ABN_CHAPS-20180316	BNK	ABN_CHAPS	*	*	*	*	*	*		<input checked="" type="checkbox"/> <input type="radio"/>
ABN_TPS-20180316	BNK	ABN_TPS	*	*	*	*	*	*		<input checked="" type="checkbox"/> <input type="radio"/>
CHATS-20180316	BNK	CHATS	*	*	*	*	*	*		<input checked="" type="checkbox"/> <input type="radio"/>
CHATS HKD-20170223	BNK	CHATS	HKD	*	*	*	*	*		<input checked="" type="checkbox"/> <input type="radio"/>
CHQCLG INWCD RF-20160101	BNK	CHQCLG	USD	C	O	*	INWCD	*		<input checked="" type="checkbox"/> <input type="radio"/>
LEDGER USD C.1 INWCD-20160101	BNK	CHQCLG	USD	C	I	*	INWCD	*		<input checked="" type="checkbox"/> <input type="radio"/>
PPLCC09358K1STB-20160101	BNK	EBAINST	EUR	C	*	*	*	*		<input checked="" type="checkbox"/> <input type="radio"/>

Table	ChannelCutOff
ID	ABN_CHAPS-20180316
Field Name	Field Value
Company ID	BNK
Channel	ABN_CHAPS
Currency Code	*
CTR/BTR	<input checked="" type="radio"/> * <input type="radio"/> B <input type="radio"/> C
Direction	*
Priority	*
Message Type	*
Source	*
Cut-off time	18:00
Cut-off time with FX	18:00
Settlement Shift	0
FX Shift	2
Cut-off shift	1
ASAP / ALAP Indicator	<input checked="" type="radio"/> ASAP <input type="radio"/> ALAP
LinkID	ABN_CHAPS*****-20180316
Start Date	16 MAR 2018
End Date	DD MMM YYYY

Admin Menu > PaymentHub  
> Routing and Settlement  
GUI > Channel Cutoff



- This table stores the cut off times and the shifts (FX shift, settlement shift, and cut off shift) for all the outgoing channels.
- Cut off times and the shifts are looked up by Dates Determination component while calculating the credit value date (CVD) of the payment. Calculation of CVD is influenced by the time of processing with relation to the cut off time of the channel, currency conversion (if any) and the days the channel takes to settle the payment.
- These factors in turn are dependent on the channel, transaction currency, priority of the payment, payment direction, transfer type (CTR/BTR), message type and the source of the payment.

## RMA

Admin Menu > Payment Hub > Routing and Settlement GUI > RMA

RMA List						
Rma ID	Company	SWIFT Service	Msg Type Include	Msg Type Exclude	End Date	
ABNANL2A-20180316	BNK	SWIFTNETFIN	1*,2*		20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
AEBFRPP-20180316	BNK	SWIFTNETFIN	1*,2*		20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
AIBKGB22-20180316	BNK	SWIFTNETFIN	1*,2*		20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
ANZBAU3M-20180316	BNK	SWIFTNETFIN	1*,2*		20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
BARCGB22-20180316	BNK	SWIFTNETFIN	1*,2*		20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
BOCAUS66-20180316	BNK	SWIFTNETFIN	1*,2*		20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
BOENGBB2-20180316	BNK	SWIFTNETFIN	1*,2*		20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
BOFAUSS3-20180316	BNK	SWIFTNETFIN	1*,2*		20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
BOTKJPJT-20180316	BNK	SWIFTNETFIN	1*,2*		20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
CHASUS33-20180316	BNK	SWIFTNETFIN	1*,2*		20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
CITIFRPP-20180316	BNK	SWIFTNETFIN	1*,2*		20991231	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>

Table	RMA
ID	ABNANL2A-20180316
Field Name	Field Value
Company ID	BNK
Swift Service	SWIFTNETFIN
Message Type Include	1*,2*
Message Type Exclude	
Override Through Upload	<input checked="" type="radio"/> Y <input type="radio"/> N
Start Date	16 MAR 2018
End Date	31 DEC 2099

 TEMENOS

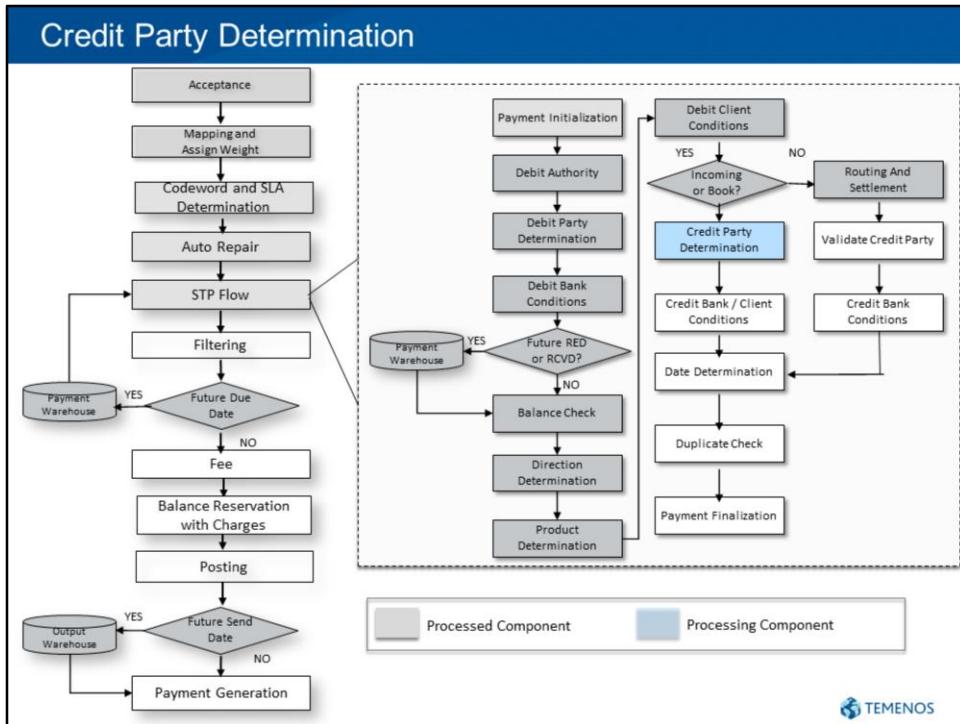
Using Relationship Management Application (RMA) banks can control which banks can send them SWIFT/ Clearing messages. Control can be extended to message type level. From R & S perspective, any payment message that is sent out through the SWIFTNET FIN services must pass the RMA check. If the RMA check fails for the first credit bank then the payment cannot be directly sent to that bank using SWIFT. The RMAs are stored in his table.

RMA table is checked for following payment messages

- The MT103 message for a payment using serial method
- The MT202 bank transfer message for a payment using serial method
- The MT202 Cover message for a payment using cover method
- The MT103 message for a payment using the cover method.

RMA table and NO RMA table are not checked for non-payment messages like MT900/MT910 and MT199.

The RMA table can be updated manually or by file upload. Any manually updated record in the RMA table is marked as manually updated. Subsequently, the upload process should not go on to rewrite these records with the contents of the upload file. (A manually updated record has greater significance and therefore should not be replaced by the upload process.)



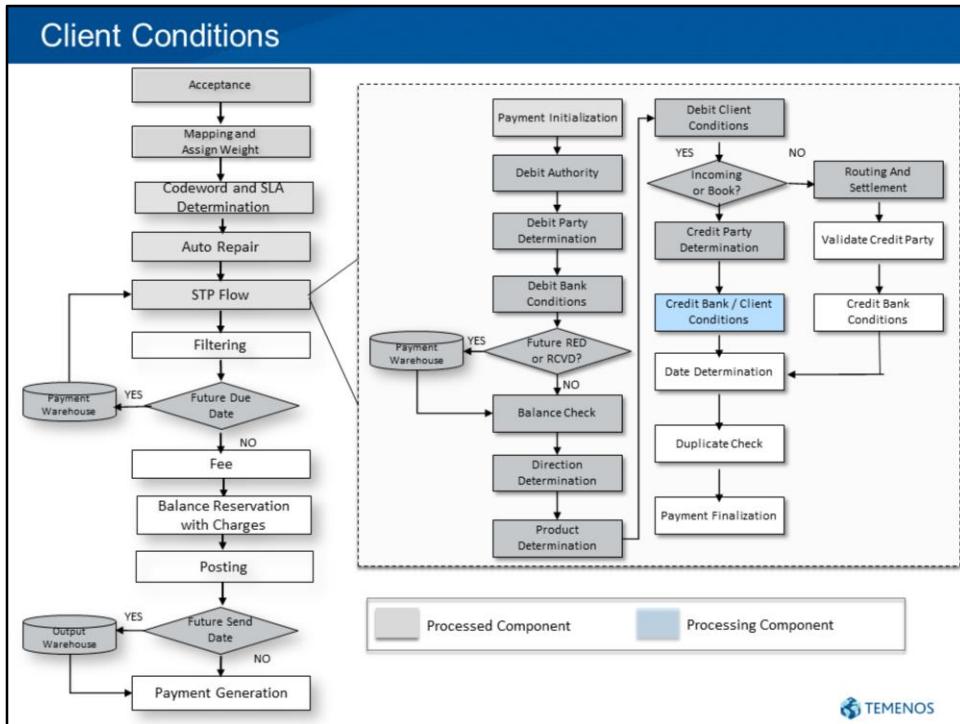
## Purpose

The Credit Party Determination Verification module is responsible for determining, validating and ensuring that the right credit account is assigned in the payment file.

## Overview

Incoming and Book payments are payments wherein the beneficiary customer belongs to the bank processing the payment. The bank has to first derive / determine the beneficiary customer account and then validate the account against the banks DDA system. On successful processing of the payment, transaction amount is credited in beneficiary customer's account.

For Outgoing & Redirect payments, the Routing and Settlement module determines the credit party based on the routing channel.



## Purpose

A bank processes payment transactions for various clients, both retail & corporate, with different options, products and services in terms of the way their transactions are processed. To differentiate and serve better, banks strive to customise their various services or products that suit the requirements of these customers.

Allowing customers to choose their preferences from a predefined set of possible options is an approach that can give customers the flexibility of defining their choices beforehand and at the same time agreeing to the services being availed from the bank. Banks on the other hand profit from better marketing and increased awareness among clients about their service offerings.

The main purpose of Client Conditions (CC) component is to make available all the choices to the customer to choose from relating to the processing of a payment and store these choices for use when applicable.

## Overview

Client conditions (CC) are retrieved in all scenarios where the ordering or beneficiary client has an account with the Processing bank and is not a financial institution.

Client Conditions (CC) are devised separately for influencing the transaction processing and the transaction charges.

**CC Processing** refer to all the conditions set up for influencing the processing of the payment. The preferences of the client are defined in records which are retrieved from this component based on the payment characteristics. A customer can have different agreements based on various payment types defined for extra flexibility and

customisation.

**CC Charges** on the other hand refer to all conditions regarding the charging of the client for various services. The agreements hold information regarding discounts/preferential charging/charges etc. for clients based on their negotiations with the bank.

## How does Client Conditions enhance payment processing?

- Confirmations
- Charge accounts
- Lead time on cut off
- Charges (and the way they need to be booked)
- Floats (Debit and credit)
- Discounted Rates on Currency
- STP/Non STP indicators
- FX Limit
- Billing



### Is it possible to have separate charge accounts for distinguished Clients?

Many clients prefer to maintain a separate account for all charges incurred while using the bank's services.

This special charges account can be listed in CC so that fees and posting components can book all charges in that account.

This feature is available only when the client conditions are defined at a Client ID/Account level although different accounts can be provided for debit & credit side.

### Can a Client negotiate the Lead Time on Cut-Off?

Lead times are configured by the bank so as to ensure that the operations can successfully process the payment through a channel before its actual cut-off time is reached.

The clients can negotiate with banks what their lead times can be before the external cut off times.

*For Example,*

If the channel specific cut-off time is 17.00 and the Lead time a client has negotiated is 0.5 Hrs. then the last payment that client can send through for the day is at 16.30.

All the payments after that will be processed as received after cut off time for that channel.

### Can a Client negotiate on the charges of a currency?

All clients can negotiate a discount on the spreads bank charges on the spot rate of a currency.

*For Example,*

A client who deals in only 3 currencies can have the following discounts stored in CC:  
Value in percentage (%).

#### **FX Discount**

##### **Client**

##### **Discount**

Client A

30%

Client B

70%

#### **Client Conditions Enhancements Offered**

There are also other enhancements been made available for the Client through Client Conditions record.

#### **Booking charges in detail with break-up**

When charges are posted separately, some clients prefer to have the break-up of all the charges charged in detail in their statements while some prefer to have it as a lump sum amount.

#### **Separate Charge Booking**

Every client has a preference in how the charges are displayed in their periodic statements. When charges are **not** being posted in a separate account some clients expect to have them booked together with the main amount while some may prefer to have them booked separately.

#### **Booking charges in detail with break-up**

#### **Straight through Processing**

Straight through processing (STP) refers to the complete payment being processed electronically without any manual intervention or keying in of info by an operator.

#### **Statement Format ID**

#### **Floats**

A client can choose to have floats taken on his transaction which can result in lower fees

*For Example,*

A client negotiates to have 2 day float on the debit transactions while only 1 day floats on the credit transactions.

#### **Language**

Every client can have a language preference in which to receive alerts and intimation of the payments.

Language can be used for language specific **statement lines** and **charge description** in statement lines. While also being taken into consideration for **confirmations** (phone/SMS/email).

#### **Billing Indicator**

An indicator can be set which tells the other components that the customer

would want the payment module components to send the information to the billing engine and process charges there.

### **Special Instructions**

*For Example,*

Client wishes to be informed about any FX transaction that goes Non STP.

### **Non STP FX Flag**

*For Example,*

A client has a Euro CCY account and wants an intimation before any payment involving FX is processed on the account. This functionality will allow the client to receive communication of the same before any processing is done.

### **FX STP Limit**

*For Example,*

A client wishes for all FX transactions above €2000 to go NSTP for his Dollar CCY account.

## Client Conditions - Configuration

Admin Menu > Payment Hub > Client Conditions GUI > Client Products

ClientCondition Product List		
ID	Company	Description
BATCHPAR	BNK	Client Condition Product for Batch Parent
BDNS-EURLV	BNK	BDNS-EURLV
BIUS-EURIP	BNK	BIUS-EURIP
CC33	BNK	CC33
DEFAULT	BNK	DEFAULT
EBAINST	BNK	For EBAINST
IINS-GBPLV	BNK	IINS-GBPLV
INCSHA-RET	BNK	Return SEPA Credit Transfer
OINS-EURLV	BNK	OINS-EURLV
OINS-GBPLV	BNK	OINS-GBPLV
OINS-HKDHV	BNK	OINS-HKDHV
OUT-SEPA	BNK	Outgoing SEPA payment
PSD2	BNK	PSD2

Table	ClientCondition Product
ID	<b>BATCHPAR</b>
Field Name	Field Value
Company Code	BNK
Description	Client Condition Product for Batch Parent

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Path:

Admin Menu > Payment Hub > Client Conditions GUI > Client Condition Product List

User can create a Client Condition product and associate with Client condition in order to map with product determination.

## Client Conditions

Client Condition List									
Client Condition ID	Company	Client Cond Product	Source Product	Business Line	Client ID	Cus Acct Comp	Cus Acct No	Cus Acct Ccy	End Date
1-20160101	BNK	EBANISTP	SEPA	999	*	*	*	*	✓ ○ 00
SEPADD_SET-20170213	BNK	SEPADD-SET	SEPA	*	*	*	*	*	✓ ○ 00
SEPADD_RET-20170213	BNK	SEPADD-RET	SEPA	*	*	*	*	*	✓ ○ 00
SEPADD_REF-20170213	BNK	SEPADD-REF	SEPA	*	*	*	*	*	✓ ○ 00
PPCCR16113VWDZ1-20170213	BNK	SEPA-REV	SEPA	*	*	*	*	*	✓ ○ 00
PPCCR16113KSH7-20170213	BNK	SEPA-RET	SEPA	*	*	*	*	*	✓ ○ 00
PPCCR1611308C7B-20170213	BNK	SEPA-REQ	SEPA	*	*	*	*	*	✓ ○ 00

Client Condition Amend SEPADD\_SET-20170213

ClientCondition Client Cond Advice Client Cond FDiscount Client Cond Change Account Audit

Company BNK  
Client Condition Product SEPADD-SET  
Source Product SEPA  
Business Line \*  
Client ID \*  
Account Number \*  
Account Currency \*  
Account Company ID \*  
Start date 13 FEB 2017  
End date 20 MMM 2017  
Language I  
Or Statement Format Name  
Cr Statement Format Name  
Billing Indicator  Y  N  
Separate Charge Booking  Y  N  
Charge Posting in Detail  Y  N  
VAT on Principal 0.00 Tax ID Tax Type

Admin Menu > Payment Hub > Client Conditions GUI > Client Agreements

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## Client Condition List

Specify the client conditions (i.e. Statement format, Charge separately with account number, Billing, STP, Non-STP, Notification preference etc.) for the mapped product.

### What are the factors influencing Client Conditions?

**Processing Weight** – Weight can influence which CC program will be called in for the processing of the outputs.

**Product** – Banks sell services and a service or a combination of services can be packaged as a product. A client using multiple payment products may want different conditions set for each product as that allows for more flexibility. Each payment product has certain characteristics e.g.

Domestic or International Payment

Customer Transfer or Bank Transfer

High Value or Low Value Payment

Urgent or Normal Payment

**Client Agreements** – A Bank deals with variety of Clients which could be retail, High Net worth Individual (HNI) or Corporates to name a few classifications. Depending on the Client and the business bank is expecting from the Client, bank will be ready to tailor the services specifically for that Client.

**Source Product** – Bank may receive payments from variety of sources. It is possible that a single product will have a single routing group and posting group but a single product could be attached to multiple sources. Taking this factor into consideration it

would be more flexible to have different client conditions for the different sources or have only one client condition for the source group to which all the actual sources belong to.

### **Batch Payments**

A salary batch contains one parent payment where the ordering customer is debited and a number of child payments where the beneficiaries are credited. An indicator on the payment will show whether the parent or child is being processed.

Although the child payment is debited from a suspense account, the client conditions are based on the parent customer.

The client condition component will know from the batch indicator field if a payment is part of a batch (child or parent).

For each child payment, since the debit party is the suspense account, the client condition component would also need to determine the parent to read the client conditions of the parent account.

In case of book payments, the client conditions of the credit side (child payment) would also need to be read.

#### **How to determine whether the payment is part of a batch?**

**Batch Indicator:** The client condition component will also make a check to see if this payment is part of a batch payment. The indicator tells if the payment is a 'Parent' or a 'Child'. This is crucial as the client conditions component needs to determine if the payment is part of a batch or not as the child payments then have to be linked to the parent payment and conditions read and retrieved accordingly.

**Parent FT Number:** This unique FT number assigned to a Parent transaction is copied onto all child payments to positively identify which child payments belong to which parent payment.

Once a child parent relationship is identified it's possible for the Client conditions to assign the parents conditions to the child payments.

#### **How to choose the right Client Condition for a payment?**

We can define the Client Conditions at various levels; at one end it could be very generic and can be defined at the product level so that all payments with that product will use those client conditions; on the other end these could be very specific to a particular client requirements and accordingly defined at the most specific level (Product/Source/Business Line/Client Id/ Account/Currency).

This means that order in which Client Conditions are retrieved is very important.

To enable this order, Peeling off mechanism is used to define the order in which Client Conditions should be read.

Peeling off means that data is retrieved from the database in several steps, from the most detail level to high level. The peeling off mechanism works on a Relational database containing tables with fixed attributes and indexes (views). The file that stores the information is indexed with a compound key

Client Condition – Tax Calculation

The screenshot shows a software interface titled "Client Condition – Tax Calculation". At the top, there is a header bar with the text "Client Condition Amend" and "SEPA00\_SET-20170213". Below the header, there are several tabs: "ClientCondition" (selected), "Client Cond Advice", "Client Cond FDDiscount", "Client Cond Charge Account", and "Audit". The main area contains a form with the following fields:

- Company:** SEPA
- Client Condition Product:** SEPA00-SET
- Source Product:** SEPA
- Business Line:** \*
- Client ID:** \*
- Account Number:** \*
- Account Currency:** \*
- Account Company ID:** \*
- Start date:** 13 FEB 2017
- End date:** DD Month YYYY
- Language:** 1
- Dr Statement Format Name:** \*
- Credit Statement Format Name:** \*
- Billing Indicator:**  Y  N
- Separate Charge Booking:**  Y  N
- Charge Posting In Detail:**  Y  N

At the bottom of the form, there are three dropdown menus: "VAT on Principal" (set to 0.00), "Tax ID" (empty), and "Tax Type" (empty). A red box highlights the "VAT on Principal" field.

- VAT on Principal field is linked with (T24) TAX table and TaxTypeID field is linked with (T24) TAX.TYPE.CONDITION table.

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Tax calculation for payments is using the tax engine in T24 to calculate tax on principal as well as charges.

TaxId and TaxTypeId in PP.CLIENT.CONDITION and PP.FEETYPES table to define tax for Principal and charge amount respectively.

## Calculation of Tax on Principal using Tax Id

- Tax Id should be defined in PP.CLIENT.CONDITION.
- While calculating Tax for the principal amount, system will check the Tax percentage(Here 25%) defined in TAX table

for the Tax Id defined in PP.CLIENT.CONDITION table and derive the Tax Amount.

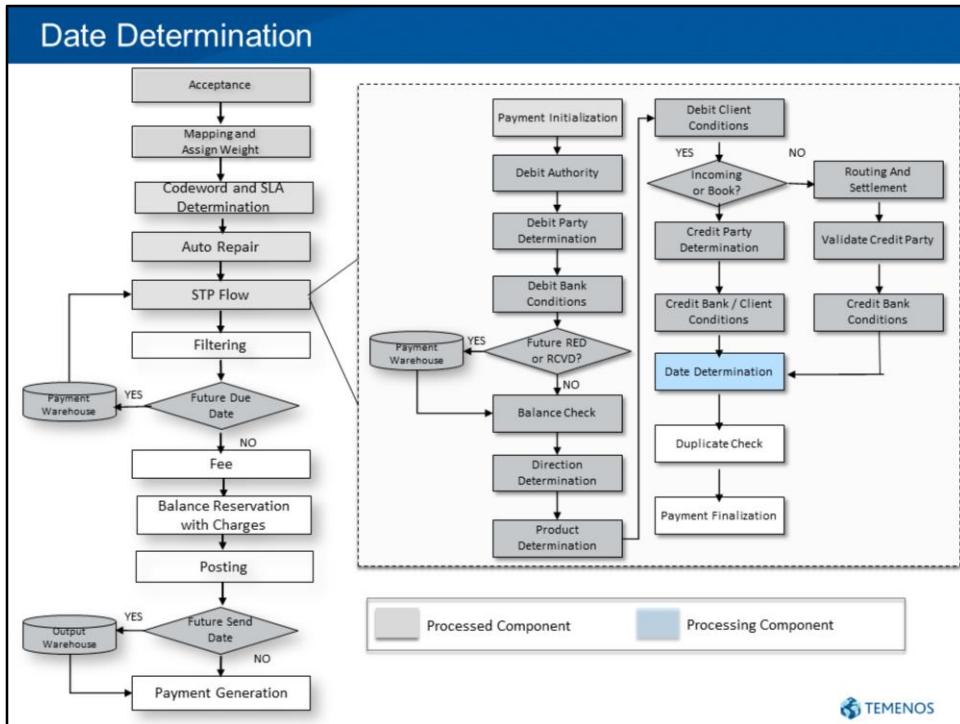
- The calculated tax will be booked (credited to) in the account returned from the TAX Table (Field Category in TAX table) instead of PL account defined in FeeTypeCreditAccount table.
- Calculated tax will also be available in GL home currency in POR.APPLIEDFEE and the same will be displayed in customer statement

Calculation of Tax on Principal using Tax Type Id

- Tax Type Id should be defined in PP.CLIENT.CONDITION.
- So based on Tax Type Id tax will be calculated
- The calculated tax will be booked (credited to) in the account returned

## from the TAX Table

- Calculated tax will also be available in GL home currency in POR.APPLIEDFEE and the same will be displayed in customer statement



Value dates are an integral part of the transaction as it provides the input to calculate debit or credit interest. Other dates which are required to process the transaction completely e.g. booking date required by the ledger, send date to decide when exactly we need to send the message out in case of outgoing and redirected payments.

A Bank processes payment transaction for various clients which could be retail or corporate clients; it also process transactions from other banks. Each one of them might have different requirement in terms of the way transaction is processed. Some banks may want us to warehouse the payment if future dated and certain other banks may want us to process even future dated payment as and when received without warehousing. Some clients might be fine if we take floats instead of the charges but certain other client would prefer urgent transfer and ready to pay for that.

## Purpose

The purpose of the Date Determination component is derive the various dates required to process the payments.

Purpose of calculating various dates for the payment are.

- Date at which we need to book the ledger
- In case of Outgoing and Redirected payments, decide on when exactly we need to send out the message

- Warehouse the payment if future dated.
- Input to calculate debit/credit interest which is due from/to customer.

## Dates Determination

1. Due date or Processing Date (PD)
2. Debit value date (DVD)
3. Credit value date (CVD)
4. Book Date
5. Exposure date
6. Payment send date
7. Cover send date
8. Requested credit value date (RCVD)
9. Requested execution date (RED)



### **Due Date or Processing Date**

Date on which transaction is actually processed inside bank. This could be a future date as well, in which case payment will be warehoused till the due date.

### **Debit Value Date (DVD)**

Settlement date till which interest is calculated/credited to the customer's bank account on the old balance

### **Credit Value Date (CVD)**

Settlement date from which interest is calculated/credited to the customer's bank account on the new balance

### **Book Date (BD)**

Date on which funds are debited from the debit party's account

### **Exposure Date**

It's the date from which credited funds are available for the use of client.

### **Payment Send Date (PSD)**

Date on which payment message (MT103, MT202) is send out to the receiving bank or clearing.

### **Cover Send Date (CSD)**

Date on which MT202 cover message is send out when payment is settled through a cover.

### **Requested CVD**

In certain cases we receive payment instructions, where in customer or other bank is requesting a specific Credit Value Date instead of the execution date. E.g. It's the 32A

date in MT103 or tag 30 date in MT101 when it comes with codeword OTHR/BBDD. BBDD (beneficiary bank due date) indicates that even though it's MT101 (request for transfer) but the date in Tag30 should be treated as requested Credit Value date instead of execution date. In this case BBDD is just an example codeword and it can be any other bilaterally agreed codeword. This codeword must be configured in the codeword component so that date is read as requested credit value date.

## Factors Influencing Dates

- Routing & Settlement
- Client Agreements
  - Debit/Credit Float and Lead time
- Bank Agreements
  - Warehouse flag
- Currency
  - FX shift
- Holidays
- Order Entry/Repair



### Factors influencing Dates

#### Routing & Settlement

In Outgoing and Redirected payments, Routing & Settlement is used to identify the channel through which the payment can be settled. The channel may require settlement shifts to settle the payment. These shifts are taken into account while calculating Dates

#### Client Agreements

Bank agrees with client on the floats which could be taken on their payments. Floats are taken into account while calculating Dates.

#### Bank Agreements

Certain banks would like to warehouse the payment till the requested date and process the payment only on the requested date. Warehouse flag is used for that purpose.

#### Currency

International payments involves currencies other than base currency in such we may require additional days to process the transaction. These kind of FX shifts are taken into account while calculating Dates

#### Holidays

TPS supports definition of Non-Working days (Holidays) separately for Countries, Currencies and Clearings. Week end days can be included as Holidays. These holidays should be considered while calculating Dates.

#### Order Entry/Repair

Operator can provide the value dates through Order Entry/ Repair screen. In such cases the dates given by the operator should be honoured.

## Factors used for date calculation

- Settlement Shift
- FX Shift
- Cut-off time
- Cut-off time with FX
- Cut-off Shift
- Floats



**Settlement Shift** – The settlement cycle time for the channel through which payment is settled. This is the number of business days the settlement channel and/or parties after processing bank require to complete the payment.

**FX Shift** – Currency conversion time for the FX department. This is applicable when the debit account and credit account currencies are not same.

**Cut-off time** – Each payment have a cut-off time which indicates the time by which a payment can be processed by the bank and if a payment comes after the cut-off time then bank might take additional day(cut-off shift) to process the payment.

**Cut-off time with FX** – In cases when currency conversion is involved bank may set the cut-off time earlier than the normal cut-off time to compensate for the additional time required for the currency conversion.

**Cut-off Shift** – This is the number of business days to include in the date formulas when payment is after cut-off but we still want to process it today (ASAP). Adding this shift means that Credit Value Date is accordingly shifted in future. If we are working in ALAP then we don't apply cut-off shift but rather warehouse the payment till next working day.

**Floats** – It's the difference between the Credit Value Date and Debit Value Date on

which bank earns the interest.

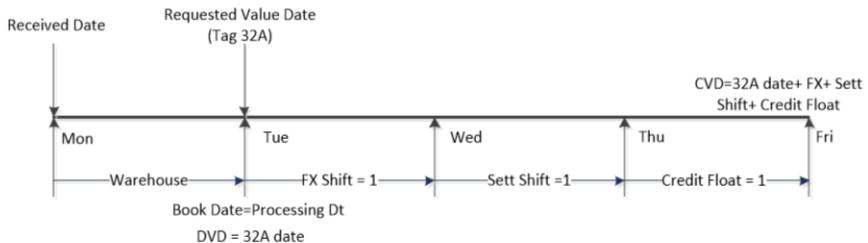
Debit Float – It is the number of business days to adjust the Debit Value Date (DVD) into the past from the Credit Value Date (CVD), adding float to the transaction. This is applicable to the debit client.

Credit Float – It is the number of business days to adjust the Credit Value Date (CVD) into the future, potentially adding float to the transaction. This is applicable to the credit client.

## Dates Determination - Example

### Incoming Payment (MT103)

Requested value date (Tag 32A) as Tuesday and payment being received on Monday.



We do the calculation in following order

Due Date = Requested CVD = Tuesday (so warehouse the payment on Monday)

Credit Value date = Due Date + FX Shift + Settlement Shift + Credit Float= Friday

Debit Value date = Requested value date (32A) = Tuesday

Book Date = Processing/Due date = Tuesday



MT103 Payment is received from Citi Bank (CITIUS33) in New York and Sending Bank warehouse flag is equal to Yes and transaction currency is EUR.

Credit Customer account is in USD and currency conversion is performed.

Credit side Client Conditions record for this payment says take Credit float of 1 day.

## Dates Determination – List of Holiday Tables

- HOLIDAY - Non-working days for a Country and Region can be defined.
- PP.CURRENCYNONWORKINGDAY - Non-working days can be defined at the currency level.
- PP.CLEARINGNONWORKINGDAY - Non-working days for clearing channels



TPS supports definition of Non-Working days (Holidays) separately for Countries, Currencies and Clearings. Week end days can be included as Holidays. These holidays should be considered while calculating Dates.

## Dates Determination – Boundary Date

Admin Menu > Payment Hub > Date Determination GUI > Boundary Date

Table	Boundary Date
ID	BNK-20160101
Field Name	Field Value
Ranking-1.1	1.00
Date Type.1	Due
Due Date Relation.1	Eq
Book Date Relation.1	*
Credit Value Date Relation.1	*
Debit Value Date Relation.1	*
Payment Send Date Relation.1	*
Cover Send Date Relation.1	*
Allowed Days in Past.1	0
Allowed Days in Future.1	365



Path: Admin Menu > Date Determination GUI > Boundary Date

There is interdependency between the various dates e.g. Processing/Due date can never be greater than the Credit Value Date or Credit Value date can never be earlier than Debit value date. In the boundary date table we will define those boundaries for different date types

And if a date doesn't fall into that boundary then that will be routed to the repair operator. This will be done by logging a functional error based on which Payment finalization will route the payment to repair.

The mentioned check should be done only after the initial date calculation has been completed for the respective date type.

## Dates Determination – Debit Value date

**Admin Menu > Payment Hub > Date Determination GUI > Debit Value Date**

Table	Debit Value Date
ID	BNK-20160101
Field Name	Field Value
Ranking.1	10.00
Direction.1	<ul style="list-style-type: none"> <li>● * </li> <li>● I </li> <li>● O </li> <li>● R </li> <li>● B </li> </ul>
Debit Account Type.1	*
CTR/BTR Indicator.1	<ul style="list-style-type: none"> <li>● * </li> <li>● C </li> <li>● B </li> </ul>
Source.1	*
Channel.1	*
Clg Transaction Type.1	*
FLOATS Indicator.1	<ul style="list-style-type: none"> <li>● * </li> <li>● Y </li> <li>● N </li> </ul>
PSD Flag.1	*
Apply Debit Float.1	<ul style="list-style-type: none"> <li>● Y </li> <li>● N </li> </ul>
DVD Output.1	Cvd



### Debit Value Date

Debit Value Date is the date used for debiting the Client Account and Loro/Nostro Account. This date can be determined based on configuration in TPS.

The configuration can be based on the following parameters

#### Source

In certain Clearing payments we have to honor the debit value date by clearing (e.g. EBA, TARGET). Source is used to determine the clearing from which the payment is received.

#### Direction

Direction is used to apply floats differently for Outgoing and Book Payments, as against Incoming Payments. Also, for PSD compliance, the Debit Value Date of the payment can be in the past for Outgoing and Book payments.

#### Debit Account Type (Loro or Nostro)

Account Type (Loro/Nostro) determines the debit value date of the payment. Nostro is only a mirror account and hence we keep the debit value date same as being given by the correspondent bank who has the actual Loro account.

#### Customer Transfer/Bank Transfer

Certain regulations such as PSD are applicable only for Customer Transfers. Hence, such payments can be filtered to determine and apply the debit value date.

#### Outgoing Channel

The outgoing channel through which the payment is routed, can determine the Debit Value Date (e.g. SEPA).

### **If PSD Compliant**

It takes 5 different values

D – Debit Leg of the payment is PSD compliant

C – Credit Leg of the payment is PSD compliant

Y – Both Legs of the payment are PSD compliant

N – Both Legs of the payment are not PSD compliant

I – Ignore, PSD not applicable

These values are derived from the output of the Product

### **Apply Debit Float**

If this flag is set to "Y", then debit float (defined in the Client Agreement) is applied to the payment.

### **Debit Value Date derived from**

The base date from which the Debit Value date is derived, can be defined here. It can take the values

Today – Take the base as today (Business Date) and apply debit float, if applicable

RCVD – Take the base as "Requested Credit Value Date" and subtract the debit float, if applicable

CVD – Take the base as "Credit Value Date" (calculated) and subtract the debit float, if applicable

RCVD1/CVD1 - Calculated as explained above for RCVD/CVD and additionally it is checked if payment is PSD Compliant and if so, the date is changed to "Today".

## Dates Determination – Exposure Date

Admin Menu > Payment Hub > Date Determination GUI > Exposure Date

Table	Exposure Date
ID	BNK-20160101
Field Name	Field Value
Ranking.1	1.00
Client Condition Product.1	*
Exposure Date Base.1	<ul style="list-style-type: none"><li>• Cvd</li><li>• Due</li></ul>
Offset Days.1	0
Start Date	20160101
End Date	31 DEC 2099



For certain types of payment transactions (example Cheque Collection), though the client account is credited, the funds should not be withdrawn by the client until the cheque status is cleared. Hence, it is required to set an exposure date for making the funds available to client, in order to eliminate the risk for the Bank.

TPS allows configuration of exposure date conditions based on

Processing Company

Client Product determined from Payment characteristics

Exposure Base Date (DUE or CVD)

Offset (plus/minus) days – To be added to the Exposure Base Date

## Dates Determination –Holiday Logic

**Admin Menu > Payment Hub > Date Determination GUI > Holiday Logic**

Table	Holiday Logic
ID	BNK-20160101
Field Name	Field Value
Ranking.1	1.00
Date Type.1	Clg
Credit Party Country.1	*
Credit Currency.1	*
Bank Holiday Check.1	<ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul>
CreditParty Country Check.1	<ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul>
Debit Currency Check.1	<ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul>
Credit Currency Check.1	<ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul>
Clearing Channel Check.1	<ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul>
Trade Currency Check.1	<ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul>
Non-Working Day Check.1	<ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul>
Debit Party Country.1	*
Debit Currency.1	*
DebitParty Country Check.1	<ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul>



Holidays & non-working days influences the dates significantly. Holiday logic section details out the holidays which we need to check and holiday table will be the place where in we will be defining the actual holidays. Various holidays can be defined namely

Currency Holiday

Country Holiday

Regional Holiday

Channel Holiday

Weekend days – Each country/currency have working days defined when financial transactions can be processed. In most of the countries/currencies it's Saturday & Sunday which is a non-working/weekend days but there are some countries/currencies where in it's other than Saturday or Sunday (e.g. Gulf countries observe Friday as non-working day). We should be able to define the non-working/weekend days for a country & currency and the mentioned days (e.g. Saturday/Sunday) will be treated as a holiday for that country/currency.

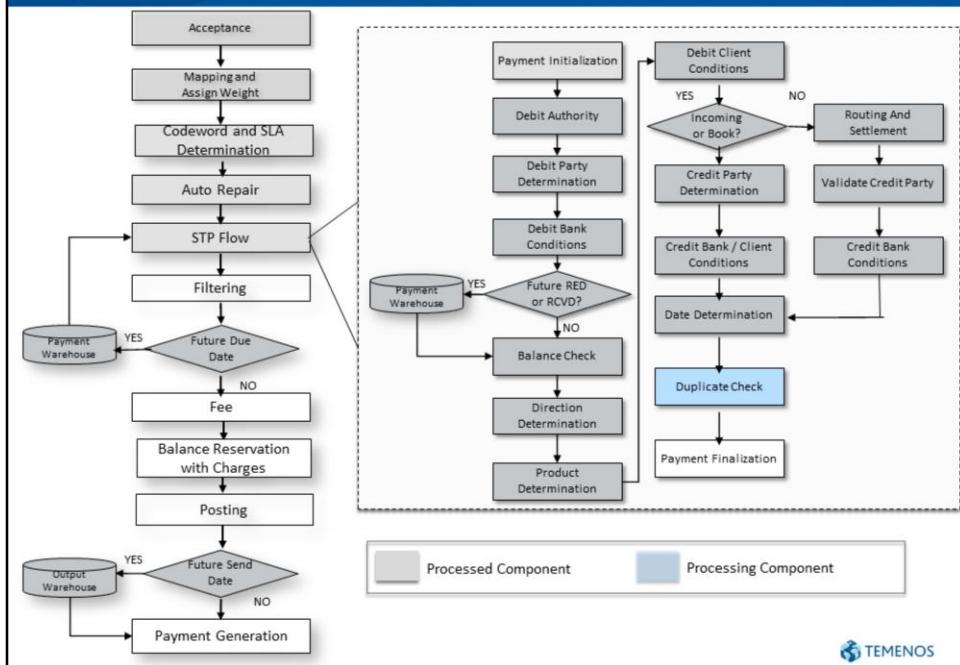
Holiday check will be a two-step process where in we

First check which holidays(currency, country etc.) need to be checked for the respective date (Due/Processing, CVD or DVD) based on the business day/holiday logic table. E.g. if we are doing the CVD calculation then we will look at the row for CVD date type in Business day logic table and identify holidays which we need to

check (in this case it will be Credit party country, Credit party region, Credit currency, Channel holiday and non-working days for owning bank)

Based on the above output we will check the holiday table for all those holidays (applicable currency, country etc.) and then see if there exist any holiday entry in the table when we are processing the payment. E.g. we are processing a payment on Monday and calculated CVD as Wednesday (due to various shifts) and in the holiday table there exist an entry for the currency holiday on Tuesday and credit party country holiday on Wednesday. In that case we will shift the CVD to Friday (pushed in future by 2 days due to holidays).

## Payment Functional Duplicate Check



The purpose of Duplicate Check component is to ensure no duplicate payments are processed by the payment engine. The Duplicate check is performed on the message characteristics of the payment and for all payments. This component is therefore responsible for the functional duplicate of each individual payment and not for technical duplicate.

## Payment Functional Duplicate Check

- Check for functional duplicates based on payment characteristics
- Days to check
- Override duplicate check
- Skip duplicate check



### Check for duplicate

If the credit account is already present in the payment file, then the credit party does not have to be determined again. The account can be directly routed to the Account & Customer interface for validation.

Scenarios wherein credit account is already present in the payment file:

Order entry payments.

Payments released from repair queue

Payments released from warehouse queue

Payments processed again by STP when the Posting Scheme validates that the channel cut-off time has passed

Payments processed again by STP when response is received from the Filtering interface after the Release date (i.e. Filtering response equals "PASS")

### Inbound payments

These payments can be either single credit transfer or individual transactions part of a clearing file.

Clearing files will trigger an additional settlement transaction for reconciliation purpose (Book payment)

Account of the Credit Party: This is the actual credit account that will be used for Posting.

Currency of the Credit Account: Account Currency as present in the Account and

**Customer Database**

Transaction Amount mentioned in the payment instruction (Interbank Settled Amount)

Transaction Currency mentioned in the payment instruction

Due Date: As determined by the Payment Engine

**Sender's Reference:** The reference assigned by the Sender to unambiguously identify the message.

**Remittance Information :** Transaction details that need to be transmitted to the beneficiary customer

**Outbound payments**

These are outgoing payments originated by the customer of the Bank where the beneficiary belongs to other Bank.

- o Account of the Debit Party: This is the actual debit account that will be used for Posting.
- o Currency of the Debit Account : Account currency as present in the Account and Customer Database
- o Transaction Amount mentioned in the payment instruction (Interbank Settled Amount)
- o Transaction Currency mentioned in the payment instruction
- o Due Date: As determined by the Payment Engine
- o Sender's Reference : The reference assigned by the Sender to unambiguously identify the message.
- o Remittance Information: Transaction details that need to be transmitted to the beneficiary customer

**Note!**

In cases where STO payments do not have unique sender's reference for each payment, the Message mapping component will add the transaction number as the reference number

**Book payments**

These are payment transfers between two accounts belonging to the Bank.

- o Account of the Debit Party: This is the actual debit account that will be used for Posting.
- o Currency of the Debit Account: Account currency as present in the Account and Customer Database
- o Transaction Amount mentioned in the payment instruction (Interbank Settled Amount)

- o Transaction Currency mentioned in the payment instruction
- o Due Date: As determined by the Payment Engine
- o Sender's Reference: The reference assigned by the Sender to unambiguously identify the message
- o Remittance Information: Transaction details that need to be transmitted to the beneficiary customer
- o Account of the Credit Party : This is the actual credit account that will be used for Posting.
- o Currency of the Credit Account :Account Currency as present in the Account and Customer Database
- o Transaction Amount mentioned in the payment instruction
- o Credit Value Date :If not requested in the payment message ,it will be determined by the Payment Engine

### **Redirect payments**

These payments are received from other banks to be routed to another bank (Beneficiary does not belong to the Bank processing the payment).

- o Account of the Debit Party: This is the actual debit account that will be used for Posting.
- o Currency of the Debit Account :Account currency as present in the Account and Customer Database
- o Transaction Amount mentioned in the payment instruction (Interbank Settled Amount)
- o Transaction Currency mentioned in the payment instruction
- o Due Date: As determined by the Payment Engine
- o Sender's Reference : The reference assigned by the Sender to unambiguously identify the message
- o Remittance Information: Transaction details that need to be transmitted to the beneficiary customer

### **Number of Days (Days to check)**

Also these payments should have been processed in last few days as calculated from the processing date (processing dates minus a pre-defined number of days) .This number of days in the past can be defined based on the Bank requirement and is configurable in Company properties table.

### **Override duplicate check**

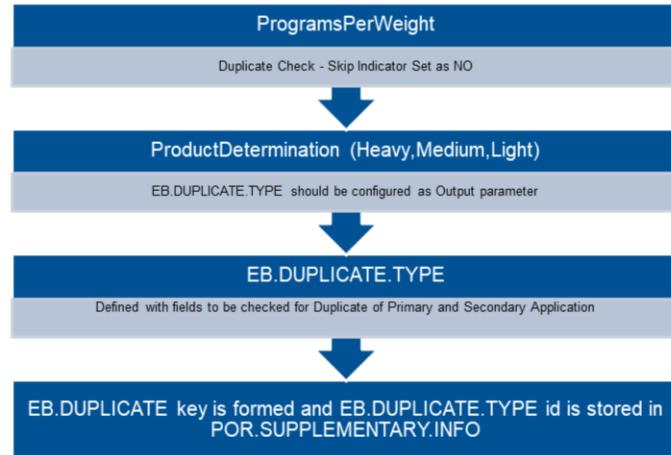
Payments in repair queue because of being identified as duplicate by this component can be overridden by the operator and released when the operator accepts the duplicate payment warning message on the screen. Each time when duplicate check has to be performed for the payment, there is no need to validate if the payment was

identified previously as duplicate and whether it was overridden by screen operator. The component returns a warning message each time if it happens to be a duplicate payment based on the selection criteria.

### **Skip duplicate check**

When duplicate check is invoked, every payment has a specific weight and high level weight. Certain components inside the payment engine can decide whether the component should be skipped for all payments or only for some payments based on the specific weight and high level weight of the payment as the criteria.

## Enable Flexible Duplicate Check



These steps are used to perform the Functional Duplicate Check.

## Flexible Duplicate Check

EB.DUPLICATE.TYPE PH-INCOMING (Model Bank)	
GB Description	Incoming Payments
Application	POR.TRANSACTION
Purge Days	5C
Fields.1	CompanyID
Fields.2	PaymentDirection
Fields.3	CreditMainAccount
Fields.4	CreditMainAccountCurrencyCode
Fields.5	TransactionAmount
Fields.6	TransactionCurrencyCode
Fields.7	SendersReferenceIncoming
Linked Appl.1	POR.SUPPLEMENTARY.INFO
Linked By.1	FTNumber
Linked App Fields.1.1	ADDITIONAL.INFORMATION.CODE
Linked App Fields.1.2	ADD.INF.TYPE.LINE.SEQ
Linked App Fields.1.3	ADDITIONAL.INF.TAG
Linked App Fields.1.4	ADDITIONAL.INF.LINE
Curr No	1
Inputter.1	1_R18m
Date Time.1	18/04/26 15:11
Authoriser	28928_TRAIN511_OFS_GCS
Co Code	GB-001-0001
Dept Code	1
	18/04/26 15:11
	Model Bank
	Implementation

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**LINKED.APPLICATION** Secondary application multi value set, with the following subset of fields:

**LINKED.BY** – the common ID identifier between the primary application and the linked application. (it is a valid field from primary application, which holds the ID of a record in the linked application)

**LINK.FIELD.VALUE.API** – To extract the ID of a record in linked application(when the ID is not Known).

**LINKED.APP.FIELDS** – multi value set of fields in the linked application which will be used in the duplicate check

**LINK.FIELD.VALUE.API** –

API extracts the ID of a record from linked application when the ID of the application is not known

**Purge Days** –Indicates the days until when the Duplicatekey should be stored. After the defined days the record is purged from EB.DUPLICATE application

## Payment Functional Duplicate Check

Admin Menu > Payment Hub > Static Data GUI > Company Properties

Table	Company Properties
ID	BNK-20161031
Field Name	Field Value
Start Date	31 OCT 2016
Home Country Code	GB
Home Currency Code	USD
Application User ID	INPUTTER
Company Region	ALL
Dealer Desk Enabled	<ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul>
SOD Run Time	07:00
COB Run Time	22:00
Company BIC	DEMOGBPX
Days Active Payment	30
Days Duplicate Check	
Claim Beneficiary BIC	
Maximum Claim Days	15
Auto Repair Wait Interval Seconds	1
Screen Wait Interval Seconds	100
Default Client ID	23019515
Default Language ID	1



Path: Static data GUI > Company Properties

### Number of Days (History Days)

#### PP.COMPANYPROPERTIES – DaysDuplicateCheck

The number of days required to consider for duplicate check is maintained. (Checks Working Days from PP.COUNTRYNONWORKINGDAY)

## Sample of Duplicate Check

Order Entry Outgoing Transfer (CTR) | OE18169TZ3ZM

**Fatal Error**

**Payment Processing Information**

Status	135	Processing Company	BNK	BNK Functional Duplicate of a payment found
Transaction Reference Number		Processing Date	18 JUN 2018 18 JUN 2018	Processing Date Imposed Flag
Sender's Reference Number		Priority	1	CANCEL ACCEPT
Related Reference		Product		
Source	DE	Output Channel	NOSTRO	Output Channel Imposed Flag
Direction	O	Transaction Currency	AUD	Instructed Currency
Transfer Type	C	Transaction Amount	454.00	Instructed Amount
Incoming Message Type	SECT	Charge Option	Shr	
Balance Reservation		Receiver Institution	GAABA01	Receiver Institution HCC
Balance Reservation Date		Beneficiary ID		

**EB.DUPLICATE BNK\*0\*72664\*GBP\*454.00\*AUD\*\*RMTINF\*1\*70\*Payment\*Info**

Purge Date	23 JUN 2018
Type	PH-OUTGOING
Transaction No.1	BNK18169BJHGJHDF

**EB.DUPLICATE key is formed with the FT number reference**



## Skip DuplicateCheck

ProductDetermination (Heavy,Medium,Light)

EB.DUPLICATE.TYPE not configured in Output parameter

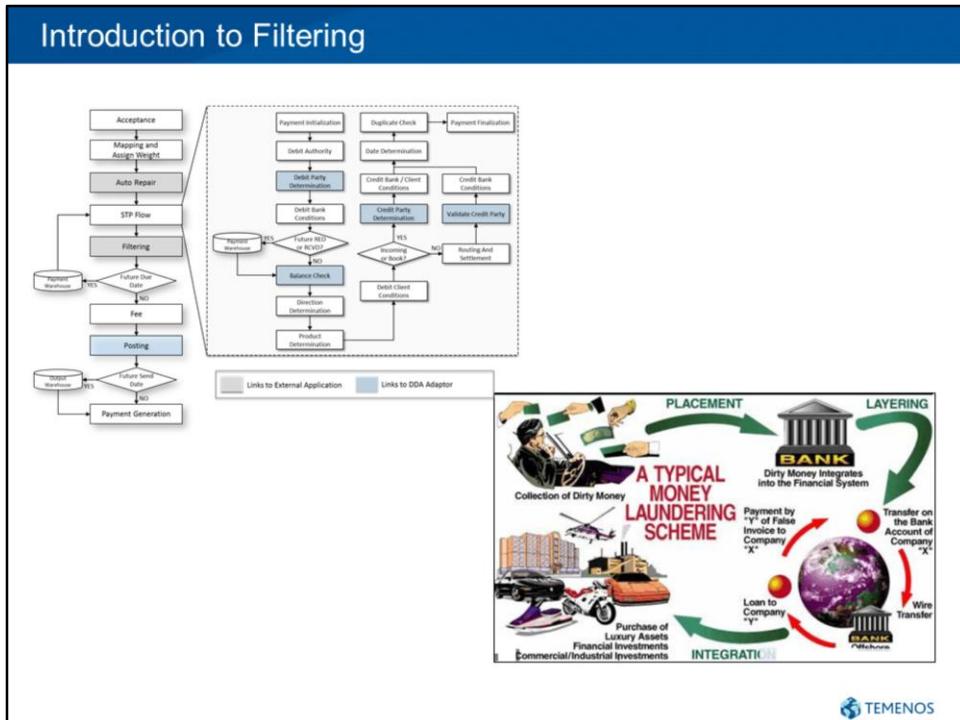


EB.DUPLICATE key will not be formed and Duplicate Check will not happen for the payment



Payment will not be considered for Duplicate Check. Duplicate Check will not happen for a payment

## Introduction to Filtering



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Financial institutions are required to filter or screen payment instructions before the funds are made available to avoid any breaching of sanctions, embargoes and other measures.

This filtering needs to happen real-time before booking the payment.

Therefore a system needs to be in place wherein all payments/transactions can be monitored and filtered in a timely manner.

### Filtering is necessary to stop transactions which aid

Terrorist financing, illegal activities financing etc. or fall under Office of Foreign Assets Control (OFAC) list or Specially Designated Nationals (SDN) list. This is an indicative list and every bank can have its own criteria for filtering. This information is stored on the external database and not internally within the component.

## Introduction to Filtering

- High Level Functionality of Filtering is:
  - Facilitates filtering of the payments by interfacing with an external/internal filter service.
  - Taking appropriate action on the payment based on the reply received
  - For regulatory reasons, payments in the warehouse have to be filtered daily even though the payment is filtered on the day of execution
  - On the day of payment execution (book date)



On the contrary, the Filtering component does not perform the actual filtering of the payment. It will send the payment details to an external/internal filter service in which the screening is done.

Main features of the component:

**Sending payment instruction to filter service with required information**

**Receiving Response from filter service**

**Acting on the 'Pass' or 'Fail' received**

Before sending the payment to warehouse where the calculated due date is in the future for below mentioned scenarios:

Routing & Settlement has bumped the due date to next working day because the cut off time for the selected channel has passed

Payment can be executed at a later date to meet the requested settlement date (CVD)

## Filtering

**Admin Menu > Payment Hub > Filtering GUI > Filtering Product**

ID	Company	Description
DEFAULT	BNK	Default Description
EBAINSTDO	BNK	Instant - Domestic
EBAINSTI	BNK	Instant - International
EBAINSTIP	BNK	For EBAINSTIP Domestic
EBAINSTIPI	BNK	For EBAINSTIP International
SCREEN	BNK	Sanction Screening
SEPADEF	BNK	SEPA Default Filtering Product

**Heavy Weight Product Conditions PPHPC150228R145-20160101**

**Output Parameters**

**Filtering Product Group.1**

Client Condition Group.1	DEFAULT	BNK
Source Product Group.1	S	G
Routing Product Group.1	LEDGER	BNK
Fee Product Group.1	BOOK	BNK
Posting Product Group.1	BOKOUR_STD	BNK
Filtering Product Group.1	DEFAULT	BNK
Ledger Product Code.1	MRBINO	BNK
Duplicate Type.1	PH-BOOK	Book Payments
Debit Book Code.1	1	
Debit Charge Book Code.1	1	
Debit VAT Book Code.1	1	
Regulatory Reporting Indicator.1	Y	
New Priority.1	Please Select	
Non STP Indicator.1	N	
PSD Compliant Flag.1	I	
EC Compliant Flag.1	Y	N
Forward Entry Flag.1	Y	N
STP Indicator Payment Order.1	Y	N
CurrencyMarket.1		

Configuration part needs to be explained in details. System dependency.

## Filtering

Filtering Payments List						
ID	CompanyID	Rank	OutputChannel	Message Type	Skip Indicator	
DEFAULT	BNK	1	SWIFT	103	N	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
		3	TARGET2	103	Y	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
		4	*	*	Y	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
SCREEN	BNK	1.1	*	*	N	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
SEPADEF	BNK	3.4	*	*	N	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
EBAINSTD	BNK	5	EBAINST	*	Y	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>
EBAINSTI	BNK	7	EBAINST	*	Y	<input checked="" type="checkbox"/> <input type="radio"/> <input type="radio"/>

Admin Menu > Payment Hub > Filtering GUI > Screening Conditions

Table	Filtering Payments
ID	EBAINSTI
Field Name	Field Value
Company Code	BNK
Rank.1	7.00
Output Channel.1	EBAINST
Message Type.1	*
Skip Indicator.1	<ul style="list-style-type: none"><li>● Y</li><li>● N</li></ul>



Filtering Component can be skipped based on the company code, Output Channel and Message Type.

## Filtering – IF.INTEGRATION.FLOW.CATALOG

IF.INTEGRATION.FLOW.CATALOG TPSAMLIntegration-TPSFlow

Please Select

Source Type	COMPONENT-SERVICE
Source Name	FilteringService doPaymentsScreening
Exit Point 1	FilteringService doPaymentsScreening
Flow Attributes.1	INCLUDE_EVENT_ID
Field Name	Field Type
<code>id</code>	String
<code>brokerId</code>	String
<code>ipaymentdetailsa</code>	PaymentDetailsA
<code>ipaymentdetailsb</code>	PaymentDetailsB
<code>ipaymentdetailsc</code>	PaymentDetailsC
<code>ionignalmessage</code>	String

**Flow Schema**

```

<?xml version="1.0" encoding="UTF-8"?><xs:schema xmlns="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified">
  <xs:element name="EventCommon">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="EventCommon">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="EventCommon">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="EventCommon">
                      <xs:complexType>
                        <xs:sequence>
                          <xs:element name="EventCommon">
                            <xs:complexType>
                              <xs:sequence>
                                <xs:element name="EventCommon">
                                  <xs:complexType>
                                    <xs:sequence>
                                      <xs:element name="EventCommon">
                                        <xs:complexType>
                                          <xs:sequence>
                                            <xs:element name="EventCommon">
                                              <xs:complexType>
                                                <xs:sequence>
                                                  <xs:element name="EventCommon">
                                                    <xs:complexType>
                                                      <xs:sequence>
                                                        <xs:element name="EventCommon">
                                                          <xs:complexType>
                                                            <xs:sequence>
                                                              <xs:element name="EventCommon">
                                                                <xs:complexType>
                                                                  <xs:sequence>
                                                                    <xs:element name="EventCommon">
                                                                      <xs:complexType>
                                                                        <xs:sequence>
                                                                          <xs:element name="EventCommon">
                                                                            <xs:complexType>
                                                                              <xs:sequence>
                                                                                <xs:element name="EventCommon">
                                                                                  <xs:complexType>
                                                                                    <xs:sequence>
                                                                                      <xs:element name="EventCommon">
                                                                                        <xs:complexType>
              
```

**Imported Header**

```

<?xml version="1.0" encoding="UTF-8"?><xs:schema xmlns="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified">
  <xs:element name="EventCommon">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="EventCommon">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="EventCommon">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="EventCommon">
                      <xs:complexType>
                        <xs:sequence>
                          <xs:element name="EventCommon">
                            <xs:complexType>
              
```

**Imported Footer**

```

<?xml version="1.0" encoding="UTF-8"?><xs:schema xmlns="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified">
  <xs:element name="EventCommon">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="EventCommon">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="EventCommon">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="EventCommon">
                      <xs:complexType>
                        <xs:sequence>
                          <xs:element name="EventCommon">
                            <xs:complexType>
              
```

IF events are generated when the payment is sent to filtering engine.

## Filtering – IF.INTEGRATION.FLOW.CATALOG (Contd)

The screenshot shows a web-based interface for managing integration flows. The main area displays an XML configuration for a service named 'PaymentDetail'. Below this, a form is used to create a new file, with fields for 'Case File' (set to '1'), 'Initiator' (set to 'T2A7'), 'Date Verif.' (set to '28 APR 18 16:55'), 'Authoriser' (set to '87749\_TRANSIT\_OFSN\_ICN'), 'Company' (set to '080010001'), and 'Dept Code' (set to '1'). The Temenos logo is located in the bottom right corner of the interface.

Continuation slide of IF events

## Filtering – IF.EXIT.POINTS

IF.EXIT.POINTS FilteringService doPaymentsScreening

Exit Point

SERVICE.OPERATION-TPSAMIntegration		TPSAMIntegration-TPSFlow
CurrNo	1	
Inputter.1	1_201507	
Date time.1	26 APR 18 16:54	
Authoriser	67749_TRAINS11_OF5_GCS	
Company	GB0010001	Model Bank
Dept Code	1	Implementation

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## Filtering process

- Select / Receive Payments Instructions
- Send mapped information to AML system (Filtering Engine)
- Receive response
  - APPROVED
    - Move Payment for further processing
  - REJECTED
    - Move Payment to Repair
  - POSSIBLE
    - Manual Authorisation or Rejection



**Receive payment** file from sending component:

A payment file with today's due date or future due date can be received from the **Payment Finalization component** of the STP flow.

The filter also receives payments on a daily basis from the **Warehouse**. (Payments with future due date for daily filtering)

**Send the mapped information** of the payment file made to the external filter service. Once sent the payment is moved to a **Pending queue** to await response. The FIFO model is used the component to send payments out to the external filter. The payment will not be processed further until the payment engine receives a response from the filter.

At this point a TRIP status message will be triggered that the payment has moved to a 'Pending Response Queue'. This will help to track the progress of the payment through this component.

**Following steps are performed:**

- 1- Pick all information of the Payment File with the original payment received
- 2- Assign a **Request ID** to the Payment
- 3- Send the payment to Filtering interface
- 4- Move the Payment to 'Pending Response' Queue

### **Request ID – Definition of length of the ID.**

This ID is required as receiving responses from external filter is an asynchronous process.

#### **Process:**

- 1- Receive the response from external filter service
- 2- Match the **Request ID** of the response file to the Request ID's in the 'Pending Response' Queue
- 3- Take action on the payment based on the response
- 4- Send all the 'Pass' payments to Future Due Date component

#### **Receive response** from the payment to proceed.

Payment Module will process only 'PASS' or 'FAIL' responses from the external filter service and update the payment statuses.

#### **Act on the response** for the payment to proceed.

If 'PASS' is the response then the payment is fine and it can proceed to the 'Future Due Date' check component. The asynchronous reply can be with a due date in the past, present or future.

E.g. Payment with due date 5<sup>th</sup> sent to filtering on 5<sup>th</sup> and reply received on 5<sup>th</sup> – Present

Payment with due date 7<sup>th</sup> sent on 5<sup>th</sup> and reply received on 5<sup>th</sup> – Future

Payment with due date 5<sup>th</sup> sent on 5<sup>th</sup> and reply received on 7<sup>th</sup> – Past

If 'FAIL' then the possible actions are- (based on banks choice of operation and investment)

#### **Seize of funds (for USD)**

This essentially means that the bank has the authority to seize the funds of the payment and route the funds to appropriate accounts. Also this type of seize can only be done by banks on US Dollar as the US Government requires all questionable transacted funds to be deposited with it by banks all over the world.

**Automatic Seize** – Here the filter will seize funds, change the credit party (internal account for the purpose) and book the payment automatically.

**Manual Seize** – Filter sends the payment to Repair. It's the operator's responsibility then to seize funds and place them in the internal account by changing the credit party.

Once the payment releases from the repair (payment has to be identified as Seize release) and comes to Filtering component again. Now it is being processed without any issues.

**Cancellation** – Any payment with CCY other than USD will be

cancelled.

**Automatic Cancellation** – Any Outgoing payment will be cancelled automatically as its still within the payments module and the transaction has not been booked.

**Manual Cancellation** – Any incoming or re-direct payment will be sent to repair and cancelled. Operations then have the option of creating a new entry through the Order Entry Screen to make return payments.

## Filtering process-Approved

Pending and Processed Payments												
Company	FT Number	Ccy	Amt	Acc Comp	Acc Num	Acc Ccy	Date	Cust Ref	Sender Ref	Status Code	Description	
BNK	BNK18107GM0FJMB	USD	34.00	BNK	11193	USD	17 APR 2018	BUC1MT013INC		602	Processing - Filtering Subflow - Screening STP payment	

POR.INTERFACE.REQUEST.RESPONSE BNK18107GM0FJMB		
Payment Status	NEW	
Send Date	17 APR 2018	17 APR 2018
Send Timestamp	20180417170837499	
User Acceptance Flag	N	
User Rejection Flag	N	
Late Response Flag	N	

### Receiving an Approved hit from FCM

POR.INTERFACE.REQUEST.RESPONSE BNK18107GM0FJMB		
Payment Status	APPROVED	
Send Date	17 APR 2018	17 APR 2018
Send Timestamp	20180417170837499	
Response Received Time	20180417113205235	
User Acceptance Flag	N	
User Rejection Flag	N	
Late Response Flag	N	



When the payment is sent to filtering engine, the transaction is parked with status code 602.

Once the payment is approved from filtering engine, system will continue the filtering process.

## Filtering process-Approved

Run BNK/CHECK.FILTER.STATUS.SERVICE

Pending and Processed Payments											
Company	FT Number	Ccy	Amt	Acc Comp	Acc Num	Acc Ccy	Date	Cust Ref	Sender Ref	Status Code	Description
BNK	BNK18107GM0FJFMB	USD	34.00	BNK	11193	USD	17 APR 2018	BUC1MT013INC		620	Completed - Filtering Subflow

Pending and Processed Payments											
Company	FT Number	Ccy	Amt	Acc Comp	Acc Num	Acc Ccy	Date	Cust Ref	Sender Ref	Status Code	Description
BNK	BNK18107GM0FJFMB	USD	34.00	BNK	11193	USD	17 APR 2018	BUC1MT013INC		999	Payment complete

**Repair View Screen : OE18107XSSP1**

Payment Processing Information

Status	999	Processing Company	BNK
Transaction Reference Number	BNK18107GM0FJFMB	Processing Date	17 APR 2018
Sender's Reference Number			17 APR 2018
Priority	1		
Source	SWIFT		
Output Channel	LEDGER		
Direction	I		
Transaction Currency	USD		
Transfer Type	C	Transaction Amount	34.00
Incoming Message Type	103	Charge Option	0
Balance Reservation	0	Sender Institution	CT10533

**Repair View Screen : OE18107XSSP1**

Debit Credit Info	Error Information	Change Information	Routing Information	Additional Information	Audit
Debit Account Holder	BNK			Credit Account Holder	BNK
Debit Account Number	33752			Credit Account Number	11193
Debit Account Currency	USD			Credit Account Currency	USD
Debit Amount	34.00			Credit Amount	34.00
Debit Value Date	17 APR 2018			Credit Value Date	17 APR 2018
Ordering Account	/OE18107GM0FJFMB/1/2018/20754			Beneficiary Account	11193
Ordering Name	Alpha Beta			Beneficiary Name	AAA
Ordering Address	New York			Beneficiary Address	123456789A N 00000
Ordering Town/Village	NY			Beneficiary Town/Village	BEAVERTON
				Beneficiary Country	US

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## Filtering process-Approved

Audit Trail			
Event Type	Event Description	Error Code	History Timestamp
INF	Message mapped according to parameters	HESWF	17 APR 2018 17:08:28,170
INF	Weight assigned successfully		17 APR 2018 17:08:28,170
INF	Inbound Codetord processed successfully		17 APR 2018 17:08:37,499
INF	SLA successfully determined	*	17 APR 2018 17:08:37,499
INF	Automated Repair Tool not required for this weight and specific weight	HESWF	17 APR 2018 17:08:37,499
INF	Payment Successfully Initiated		17 APR 2018 17:08:37,499
INF	Debit Authority successful - Debit Authority Indicator set	S	17 APR 2018 17:08:37,499
INF	Debit Party Successfully Determined	BNPQ23752USD	17 APR 2018 17:08:37,499
INF	Bank Condition read successfully	DEFAULT/20160101?**?	17 APR 2018 17:08:37,499
INF	Debit Bank Condition updated successfully		17 APR 2018 17:08:37,499
INF	Open Account successfully Determined	Y	17 APR 2018 17:08:37,499
INF	Direction and Transfer type successfully determined	BC	17 APR 2018 17:08:37,499
INF	Product determination successful	HRAJ/PNIPC/4112F7RH/C-20160101(SWIFT/DEFAULT/LEDGER/DEFAULT/7H/MCLG_C/DEFAULT)	17 APR 2018 17:08:37,499
INF	Credit Party successfully determined	11193 / BNP /	17 APR 2018 17:08:37,499
INF	Debit Main Account Successfully Validated	BNPQ23752USD	17 APR 2018 17:08:37,499
INF	Credit Main Account Successfully Validated	BNPQ11905USD	17 APR 2018 17:08:37,499
INF	The Funds Authorization process is skipped for the payment		17 APR 2018 17:08:37,499
INF	Client Condition read successfully	DEFAULT/TSWIFT*****?*(DEFAULT/TSWIFT?)*	17 APR 2018 17:08:37,499
INF	Requested Credit Value date is in past and it cannot be met	20180417/20160719	17 APR 2018 17:08:37,499
INF	Date Determination Successful	Proc.20180417 CVD.20180417 DVO.20180417 P950 CSD.80 20180417 EXD.20180417	17 APR 2018 17:08:37,499
INF	Duplicate check performed successfully		17 APR 2018 17:08:37,499
INF	FATF Regulations Successfully met		17 APR 2018 17:08:37,499
INF	STP successfully completed		17 APR 2018 17:08:37,499
INF	End of STP processing in single flow service	600 107	17 APR 2018 17:08:37,499
INF	The received screening response is: APPROVED!		
INF	Status code changed to ready for next FIRM		17 APR 2018 11:32:03,235
INF	Risk Filtering successful		17 APR 2018 11:42:00,219
INF	Record key - ClientCharges table used for peeling off	1-20180318 ***** BNP *****	17 APR 2018 11:43:02,537
INF	Fee Processing is successful		17 APR 2018 11:43:02,537
INF	The Balance Check with charges process is skipped for the payment		17 APR 2018 11:43:02,537
INF	Posting lines and statement lines generated successfully and passed to Ledger		17 APR 2018 11:43:02,537
INF	Posting completed successfully	BNK181070M0FJFMB	17 APR 2018 11:43:02,537
INF	Payment processing is complete		17 APR 2018 11:43:02,537



Highlighted field is to indicate the payment has hit filtering engine and received the approved status.

## Filtering process-Rejected

Pending and Processed Payments											
Company	FT Number	Ccy	Amt	Acc Comp	Acc Num	Acc Ccy	Date	Cust Ref	Sender Ref	Status Code	Description
BNK	BNK181070HDGCCKJ	USD	333.00	BNK	11193	USD	17 APR 2018	BUC1MT01BINC		602	Processing - Filtering Subflow - Screening STP payment

POR INTERFACE REQUEST RESPONSE BNK181070HDGCCKJ

Payment Status	NEW
Send Date	17 APR 2018
Send Timestamp	20180417170837499
User Acceptance Flag	N
User Rejection Flag	N
Late Response Flag	N

### Receiving a Reject hit from FCM

POR INTERFACE REQUEST RESPONSE BNK181070HDGCCKJ

Payment Status	REJECTED
Send Date	17 APR 2018
Send Timestamp	20180417170837499
Response Received Time	20180417115513522
User Acceptance Flag	N
User Rejection Flag	N
Late Response Flag	N



This is a sample message when a response is reject hit from Filtering engine

## Filtering process-Rejected

Run BNK/CHECK/FILTER/STATUS/SERVICE

The screenshot shows two windows side-by-side. The left window is titled 'Pending and Processed Payments' and lists one transaction: BNK18107DHGCGKJ, Status 235, Amt 333.00, Ccy USD, Acc Comp BNK, Acc Num 11193, Acc Ccy USD, Date 17 APR 2018, Cust Ref BUC1MT013INC, Sender Ref BNK, Status Code 235, Description Waiting - Payment moved to General Repair Queue. The right window is titled 'Repair View Screen' and shows detailed payment processing information. It includes fields for Transaction Reference Number (BNK18107DHGCGKJ), Processing Company (BNK), Processing Date (17 APR 2018), Priority (1), Source (SWIFT), Output Channel (LEDGER), Direction (I), Transaction Currency (USD), Transfer Type (C), Transaction Amount (333.00), Incoming Message Type (103), Charge Option (Sha), and Sender Institution (CITRUS33). At the bottom of the repair screen, there is an 'Error Information' tab with a red box highlighting the message: 'F10002 \*\* Payment is sent automatically to the Repair pending queue || Payment was'. The TEMENOS logo is visible in the bottom right corner.

Payment moved to repair queue when filtering engine response is reject

## Filtering process-Rejected

Audit Trail				
Event Type	Event Description	Error Code	Add Info	History Timestamp
INF	Message mapped according to parameters			17 APR 2018 17:21:51.963
INF	Weight assigned successfully	HISWF		17 APR 2018 17:21:51.963
INF	Inbound CodeWord processed successfully			17 APR 2018 17:08:37.499
INF	SLA successfully determined	*		17 APR 2018 17:08:37.499
INF	Automated Repair Tool not required for this weight and specific weight	HISWF		17 APR 2018 17:08:37.499
INF	Payment Successfully Initiated			17 APR 2018 17:08:37.499
INF	Debit Authority successful - Debit Authority Indicator set	S		17 APR 2018 17:08:37.499
INF	Debit Party Successfully Determined	BNK023752USD		17 APR 2018 17:08:37.499
INF	Bank Condition read successfully	DEFAULT-20160101??"		17 APR 2018 17:08:37.499
INF	Debit Bank Conditions updated successfully			17 APR 2018 17:08:37.499
INF	Own Account successfully Determined	Y		17 APR 2018 17:08:37.499
INF	Direction and Transfer type successfully determined	IIC		17 APR 2018 17:08:37.499
INF	Product determination successful	HWAIPHPC14112F7RHC-20160101 SWIFT DEFAULT LEDGER DEFAULT HKCLG_CD DEFAULT		17 APR 2018 17:08:37.499
INF	Credit Party successfully determined	11193 / BNK /		17 APR 2018 17:08:37.499
INF	Debit Main Account Successfully Validated	BNK023752USD		17 APR 2018 17:08:37.499
INF	Credit Main Account Successfully Validated	BNK11193USD		17 APR 2018 17:08:37.499
INF	The Funds Authorization process is skipped for the payment			17 APR 2018 17:08:37.499
INF	Client Condition read successfully	DEFAULTSWIFT***** ( DEFAULT SWIFT)??"		17 APR 2018 17:08:37.499
INF	Requested Credit Value date is in past and it cannot be met	2018041720160719		17 APR 2018 17:08:37.499
INF	Date Determination Successful	Proc.20180417 CV0.20180417 D0.20180417 PSD CS0 BD.20180417 EX0.20180417		17 APR 2018 17:08:37.499
INF	Duplicate check performed successfully			17 APR 2018 17:08:37.499
INF	FATF Regulations Successfully met			17 APR 2018 17:08:37.499
INF	STP successfully completed			17 APR 2018 17:08:37.499
INF	End of STP processing in Single flow service	600107		17 APR 2018 17:08:37.499
INF	The received screening response is: REJECT!			17 APR 2018 11:35:04.463
INF	The received screening response is: REJECTED!			17 APR 2018 11:55:13.532
WAR	Payment is sent to the Repair pending queue.	FLT10002	Payment was automatically send to Repair on 20180417 because Screening rejected it!	17 APR 2018 11:58:54.100

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Highlighted field is to indicate the payment has hit filtering engine and received the Reject status.

## RISKS

The risks normally apply to cross border SWIFT payment and relates to other banks and not customers.

- Checks for disallowed counterparties, country and currencies (this can be controlled using allowed exposure by limit and setting the limit as zero, which will disallow all payments)
- Allowed exposure by counterparty, country and currency for a payment transaction
- Allowed exposure by counterparty, country and currency based on time such as daily, weekly and monthly amount limits and also on the total number of payments for a defined period



Risk Filtering helps banks to monitor and control risks based on Country, Currency and Counterparty before payment is allowed to be booked successfully.

## RISKS - Configuration

Admin Menu > Payment HUB > RISK Filter GUI > Risk Filter Condition

Table	Risk Filter Conditions
ID	1-20180316
Field Name	Field Value
Company ID	BNK
Debit Credit Indicator	<ul style="list-style-type: none"> <li>• D</li> <li>• C</li> <li>• B</li> </ul>
Currency	USD
Message Type	103
Customer or Bank	<ul style="list-style-type: none"> <li>• C</li> <li>• B</li> <li>• *</li> </ul>
Bank Identification Code	CITIUS33
LimitCurrency	USD
Transaction Limit	100,000
Daily Amount Limit	1,000,000
Weekly Amount Limit	10,000,000
Monthly Amount Limit	100,000,000
Payments per Day	10
Payments per week	100
Payments per Month	1000
Override.1	
Reset Accumulator	
LinkID	CUSD103*CITIUS33-20180316
Start Date	16 MAR 2018
End Date	31 DEC 2099



In the above example, risk filter checks have been configured to check:

For credit leg of the payment

In currency GBP

Arising from any message type (SWIFT, Clearing etc)

Can be a customer or a bank transfer

Provided the receiver is CITIUS33

Amount limits mentioned in USD

Each transaction can be for a maximum of 100000 USD

Maximum credit per day is 100000 EUR

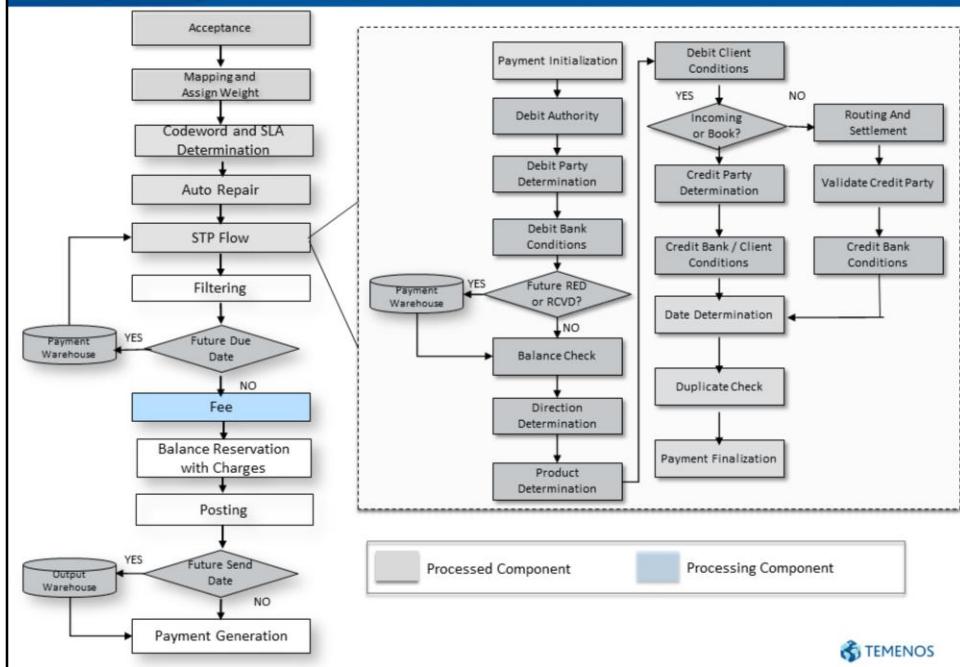
Maximum credit per week is 1000000 EUR

Maximum credit per month is 10000000 EUR

Maximum number of transactions per day is 10

No cap set on number of transactions per week/month

## Apply charges on a payment



The purpose of the Fee Determination component is to provide a very flexible and comprehensive definition of charges (fee).

It also supports the below functionalities.

Definition and maintenance of charges for clients and correspondent banks (sending and receiving banks)

Ability to identify the party(Debit/Credit) for which we need to apply charges for

Ability for an operator to impose fee which will override fee configured in the system

Ability to apply multiple charges to a payment transaction

Ability to support both conditional and unconditional charges

Ability to calculate charges while the payment is being processed

Ability to define different profit and loss accounts for each fee type

Ability to apply charges based on

Business line of customers (Group based on customer type)

A specific account and its currency which is used in payment transaction

Residency status of a customer

Type of payment (Internal transfer, intra company payment, outgoing payment etc)

## Apply charges on a payment

- Fees
  - Conditional
  - Unconditional
- Understanding BEN, OUR and SHA
- Fixed fee and variable fee
- Real fee and informational fee
- VAT on charge
- Credit accounts for Fee



Various types of charges can be applied to a payment. Few are listed below.

**Transaction Fee** – Charges levied by the Bank for processing the payment

**Phone Confirmation Fee** – Charges taken by the Bank for making call to the customer for the payment confirmation

**Manual Repair Fee** – Charges taken by the Bank to repair the payment and process it correctly.

These charges can be classified broadly into two categories.

**Unconditional** – Applied in all conditions.

**Conditional** – Applied only under certain conditions

### Charging options

All the 3 charges types namely SHA, BEN and OUR are supported by TPS

#### **BEN**

This charging option indicates that all charges are to be borne by the beneficiary.

#### **SHA**

This charging option indicates that charges are to be shared by the originating and beneficiary party.

#### **OUR**

This charging option indicates that charges are to be borne by the originating party.

Fee can be linked to transaction amount too. Low amount transactions will attract low fees whereas high amount transactions will attract high fees.

Fixed charges – A fixed amount which will not vary with the transaction amount.

Variable charges – As the name suggests, charges are linked to the transaction amount as certain percentage of transaction amount is taken as the charge amount.

Charges can be taken

By debiting the client (Debit/Credit) separately for the charges. Charges could be debited from the main client account or a separate charge account if there is one defined inside Client Conditions.

By debiting the client for both transaction amount and charges as a single debit for a payment

From transaction amount, eventually leading to lesser amount towards beneficiary.

## **Factors influencing Fees**

### **Product**

Combination of services offered by a bank can be packaged as a Product. Each payment product has certain characteristics. Hence it is important for a bank to take charges accordingly. As Product already takes into account all these characteristics before arriving at a product, we will take Product as one of the input to deciding the charges which gets applied to the payment.

### **Client Agreements**

Client specific charges are defined for the specific clients or it could be defined for a specific product & source combination, in which case it gets applied to all the clients who don't have specific charges defined.

### **Source**

Charges are not applied for payments originating from certain sources or apply preferential charges.

### **Business Line**

Each customer belongs to a specific group which is called business line. Each business line can have specific objective from the Fee perspective and accordingly they want to price the charges and hence it's very important to take business line into account while determining the charges.

### **Residency Status**

For most of the countries there is a VAT imposed by the government. This VAT is levied on the payment or the charges calculated. Residency Status is used to identify whether the customer is a resident of that country or not

### **PSD Compliance**

In case of PSD compliance, Charges are not allowed to be taken directly from transaction amount. Also the charges should be shared between the originating and beneficiary party.

## Apply charges on a payment

Charges could be taken from the different parties depending on the charging options.

BEN	SHA	OUR
All charges for the beneficiary	Charges are shared between originating and beneficiary party	All charges for the originating party except where special processing is requested by beneficiary.



### Charging options

All the 3 charges types namely SHA, BEN and OUR are supported by TPS

#### **BEN**

This charging option indicates that all charges are to be borne by the beneficiary.

#### **SHA**

This charging option indicates that charges are to be shared by the originating and beneficiary party.

#### **OUR**

This charging option indicates that charges are to be borne by the originating party.

## Factors influencing fee

- Client conditions
- Product determination
- Order Entry/Repair



### **Client Conditions**

Debit or credit confirmation controls e.g. phone confirmation, email confirmation, Fax confirmation

Billing flag

Non STP flag

VAT on principal amount

VAT on charges

Client Charges account – This doesn't affect the fee calculation directly but it affects the way charges are posted for the client.

### **Product Determination**

Fee Product code

Source or Source group to be used in peeling off

PSD Flag

### **Order Entry/Repair**

Manual repair performed

Charges waived or not (which could be both conditional or unconditional)

Imposed charges

VAT imposed flag (on Principal & Charge amount)

## Client and Bank Charges

- Fee calculation will be divided into two parts
- Client Charges
  - Client specific charges which will be defined for the specific clients or could be defined for a specific product & source combination, in which case it gets applied to all the clients who don't have specific charges defined.
- Bank Charges
  - In case of Inbound Our and Outbound Our payments, we either receive charges from the sending bank or we send charges to the receiving bank as all charges are borne by the originating party. These charges vary from bank to bank depending on our relationship with that bank and hence we need to define these charges separately.



### Client Charges

Client charges can be applied to Debit party or Credit party or both depending upon the direction.

#### Incoming payment

In this case debit party is the sending bank and credit party holds an account with us. We will be reading the client charges for the credit party which is with us.

#### Outgoing payment

In this case debit party is the customer holding an account with us and credit party is the bank. We will be reading the client charges for the debit party in this case.

#### Book payment

In this case both debit and credit party holds an account with us and we will be reading the client charges twice, once for the debit party for debit side charges and second time for the credit party for the credit side charges.

## Apply charges on a payment

Admin Menu > Payment Hub > Fee Determination GUI > Fee Type

Fee Type List

ID	Cond Indicator	BNF CHG Allowed	VAT %			
BENEFICIARYBANKREPAIRED	C	N	0.00	/	/	00
BOOKTRANSFERCREDITFEE	C	Y	0.00	/	/	00
BOOKTRANSFERDEBITFEE	C	N	0.00	/	/	00
CANCELLATIONCHARGES	C	Y	0.00	/	/	00
CHILDTRANSACTIONFEE	U	N	0.00	/	/	00
CLIENTCONDITIONNONSTP	C	Y	0.00	/	/	00
CREDITCHILDREVERSALFEE	C	Y	0.00	/	/	00
CREDITEMAILCONFIRMATIONFEE	C	Y	0.00	/	/	00
CREDITFAXCONFIRMATIONFEE	C	Y	0.00	/	/	00
CREDITPHONECONFIRMATIONFEE	C	Y	0.00	/	/	00
CREDITPOSTCONFIRMATIONFEE	C	Y	0.00	/	/	00
DDIREFUNDTEE	C	N	0.00	/	/	00

Table	Fee Type
ID	BENEFICIARYBANKREPAIRED
Field Name	Field Value
Conditional or Unconditional	<ul style="list-style-type: none"> <li>• C</li> <li>• U</li> </ul>
Beneficiary Charge Allowed	<ul style="list-style-type: none"> <li>• Y</li> <li>• N</li> </ul>
VAT%age	0.00
Tax ID	
Tax Type	
Fee Description	EN Beneficiary Bank Repaired
Override.1	



There could be various Fee types. We can segregate them in two categories

**Conditional Fee Types** – These are the Fee types which can only be applied for a transaction if there is a particular condition which is met. E.g. Non-STP Fee, this Fee can only be applied if the transaction has actually been processed non-STP. If the transaction is STP then we cannot take this charge even if it's defined in the Client Charges table.

**Unconditional Fee Types** – These are the Fee types which needs to be applied in all the cases if it's defined for the Client e.g. Transaction Fee

Calculating Tax for Charges is same as calculation of Tax for Principal:

- Tax Id or Tax Type Id should be defined in PP.FEETYPE. We can define different Taxes for different Fee types.
- Tax amount will be calculated separately for each fee that are defined in PP.CLIENT.CHARGES table. So, there will be a separate record in POR.APPLIEDFEE for each Tax.
- If same Tax defined in two or more Fee types, then total tax amount will

be calculated and stored in POR.APPLIEDFEE in a single record

Apply charges on a payment

Admin Menu > Payment Hub > Fee Determination GUI > Client Charges

The screenshot shows the 'Client Charges' screen with the following details:

- Company:** SWR
- Fee Product:** ReturnSOO
- Source Product:** SEPA
- Business Line:** \*
- Client ID:** \*
- A/C Company Code:** BNK
- A/C Number:** \*
- A/C Currency:** \*
- Residency Status:** Pr, Rs, Nr, Nn, \* (radio buttons)
- Fee Currency:** EUR
- Start Date:** 20170213
- End Date:** 20170213
- LINKID:** ReturnSOOSEPA\*\*\*-20170213
- Ranking\***: 10
- Fee Type\***: DORETURNFEE
- Always Apply Flag\***: Y
- Apply Me Only Flag\***: N
- Percentage VAT On Charge**: \*

Below the main form, there are several tabs:

- Fee Formula - Fixed Fee
- Fee Formula - Percentage Fee
- Fee Formula - BaseOrg/Doc/Rise
- Audit

Under the 'Fee Formula - Fixed Fee' tab, the following settings are visible:

Ranking*	Fee Type*	Fee Tier Range Lower Limit	Fixed Charge Amount	Minimum Charge Amount	Maximum Charge Amount	FeeChargeAmountFX
10	DORETURNFEE	0	10	0	999.999	1=4

The Temenos logo is visible at the bottom right of the interface.

## Client Charges

There can be multiple Fee types which can be attached to a single client charges record. These Fee types will have certain controls based on which it will be decided if a particular charge need to be taken from this client payment or not.

**Always Apply Flag** – If this flag is set to Y against a particular Fee type then that Fee will always be taken if evaluated for a particular payment. Both conditional and unconditional fees can be marked as 'Always apply'.

**Apply me only flag** – If we encounter any fee type with this flag then only this Fee type should be applied and rest of the fee type should be ignored except where Always apply flag is set as Y.

Each fee type could further be linked with a formula to calculate the actual charge; this could be a fixed charge formula or variable (percentage).

All Fee types linked with a Client charges record must have the same currency. The Client charges table is only read if fees module calculates the charges. This table will not be read in case OE imposes charges.

**ClientChargesFeeFormulaId:** Unique Id to identify the Client Charges Fee Formula Id. This would be a sequential number and increased by 1 for every record being added

in this table. This Id need not be available in the GUI.

**ClientChargesFeeTypeId:** This table is linked with the Client Charges Fee Type Table using this field. One Client charges Fee Type Id can be linked with multiple records in this table.

**FeeTierRangeLowerLimit.** This is the lower tier amount and if the transaction amount is greater than this limit (in case of FX, converted amount) and is lesser than the next tier (if there is any), then this record will be selected.

**FixedChargeAmount:** Fixed charge amount

**PercentageVariableFee:** In case of variable fee this will be defined as the percentage (up to 9 decimal places)

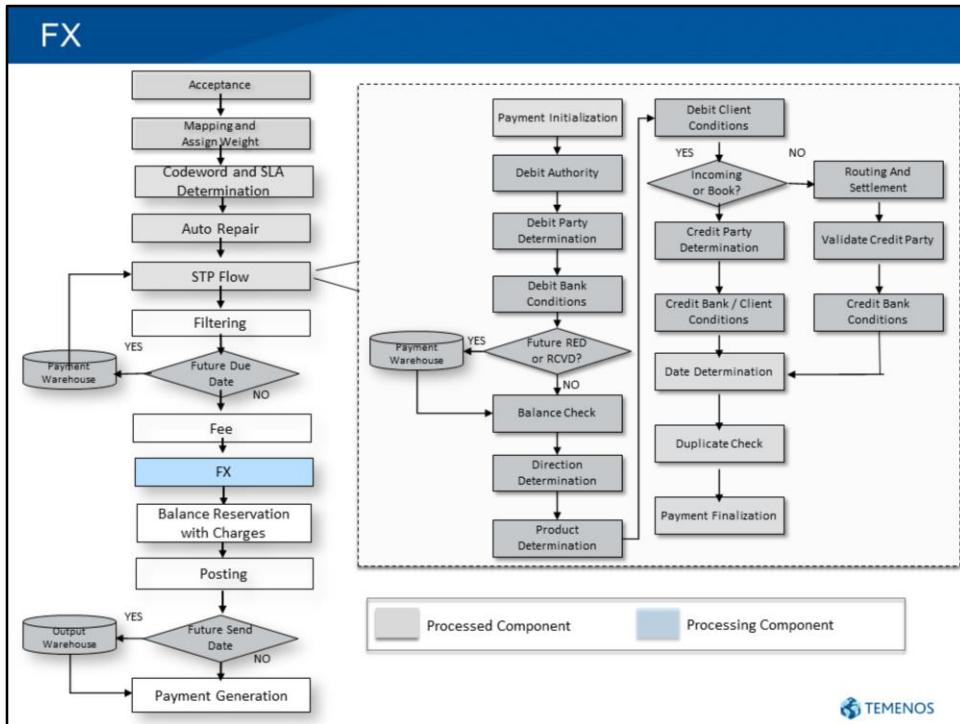
**BaseChargeAmount:** Fixed positive amount which would be added to charge amount in case of percentage charge.

**ChargeDiscountAmount:** Fixed positive amount which would be deducted from charge amount in case of percentage charge.

**ChargeRiseAmount:** Fixed positive amount which could be added to the calculated Fee (fixed or variable) to arrive at the final fee.

**MinimumChargeAmount:** Charge amount has to be equal to or greater than this minimum charge amount.

**MaximumChargeAmount:** Charge amount has to be equal to or lesser than this maximum charge amount.



PP supports processing payments in currencies other than the local currency. Debit account currency or credit account currency need to be the same as transaction currency. PP does not support all three to be different currencies. (In essence - FX can happen either on the debit side or on the credit side but not on both.)  
 PP fetches the FX rates from T24 CURRENCY table when a payment is processed. When FX needs to be performed on charges (Charge currency is different from the charge account currency), then, always midrate is used to calculate the charge amount.

## Special FX Rates

### Foreign Exchange Counter Rates

Currency	Selling	Buying	Buying	Currency	notes
	TT/OD	TT	OD		
	Selling	Buying			
1 Australian Dollar	3.2430	3.1610	3.1450	3.2720	3.0460
1 Brunei Dollar	2.5360	2.4710	2.4630	2.5400	2.3910
1 Canadian Dollar	3.0920	3.0270	3.0150	3.1260	2.9700
1 Euro	4.2030	4.0990	4.0790	4.2010	3.9980
1 New Zealand Dollar	2.6650	2.5720	2.5560	2.6900	2.4590
1 Papua N Guinea Kina	1.7070	1.3670	1.3510	NA	NA
1 Singapore Dollar	2.5355	2.4710	2.4630	2.5400	2.3910
1 Sterling Pound	4.8260	4.7290	4.7090	4.9270	4.6830
1 Swiss Franc	3.3950	3.3230	3.3080	3.4320	3.2590
100 Bangladesh Taka	4.0210	3.8200	3.6200	NA	NA
100 Danish Krone	57.9100	53.3900	53.1900	NA	NA
100 Hongkong Dollar	40.9300	38.8900	38.6900	40.9700	37.7400



To request for a new exchange rate from Treasury when the FX Threshold Limit exceeds.

There are number of banks which may require to not to have a manual process to enter the new rate and continue the foreign currency payment if FX Limit exceeds the limit specified by the bank. This functionality will enable STP by sending a request to Treasury for a new rate and process the payment with the new rate once the response is received from Treasury. This reduces the time delay in processing the payment and manual human error can be avoided.

## Special FX Rates - Configuration to set FX threshold

- Company Properties
- Client Conditions
- Currency



FX Threshold Limit for the Foreign currency payment can be configured/verified at 3 different levels:

1. Company
2. Client
3. Currency

If the Rate Request is configured as STP and FX Threshold limit is breached will be parked in a queue and request has been sent to T24-Treasury for new rate. Once the rate is received continue processing the payment and raise entries.

## PP.COMPANY.PROPERTIES – RATE REQUEST

Admin Menu > Payment Hub > Static Data GUI > Company Properties

The screenshot shows the 'PP COMPANY PROPERTIES BNK-20161031' configuration screen. On the left, there's a large panel with various file location settings like Trigger File Location, Insight Delivery Location, etc. On the right, there's a smaller panel for FX rate request settings, including fields for Threshold Non STP Amt, Threshold Auto FX Amt, and FX Tolerance Percentage (set to 10). The TEMENOS logo is visible at the bottom right.

Path: Payment Hub > Static Data GUI > Company Properties

Enable STP FX payment by setting Rate Request and FXRateReqCutOff fields in the company properties table. Rate Request value of "S" will enable STP for FX if threshold limit is breached

### Set the flag in Company Properties table:

Rate Request and FXRateReqCutOff are set in the Company Properties table. Rate Request takes a value of " " or M or S.

- Send a rate request to T24 Treasury provided system is within the FX rate cut off time, await rate from Treasury, use the Treasury rate received and arrive at the amount. This is the 'S'TP mode.
- Park the payment in the repair queue for an operator to intervene.
- Operator can then choose to impose a FX rate and continue.
- When FX rate is imposed, FX threshold check is not performed.
- System will only check if the rate is within the tolerance configured in PP.COMPANYPROPERTIES. In this case, this process is set to be 'M'anual.

The FX CutOff time to send the request to Treasury has been breached – payment will be routed to Repair queue for manual intervention

Failure in Treasury on processing the sent request – payment will be routed to Repair

queue for manual intervention

Utilization of the new rate provided by Treasury – send acknowledgement to Treasury

Non-Utilization of the new rate provided by Treasury – clean up the FX related data  
and process the payment as a new payment. Send acknowledgement to Treasury

## PP.CLIENT.CONDITION – FX LIMIT

Admin Menu > Payment Hub > Client Conditions GUI > Client Agreements

The screenshot shows the 'Client Condition Amend' screen with the identifier 'SEPADD\_SET-20170213'. The interface includes a toolbar with icons for save, cancel, print, and search, followed by a dropdown menu labeled 'Please Select' and a 'GO' button.

The main form contains the following fields:

- Company: BNK
- Client Condition Product: SEPADD-SET
- Source Product: SEPA
- Business Line: (empty)
- Client ID: (empty)
- Account Number: (empty)
- Account Currency: (empty)
- Account Company ID: (empty)
- Start date: 13 FEB 2017
- End date: DD MMMM YYYY (with a calendar icon)
- Language: 1
- Dr Statement Format Name: (empty)
- Cr Statement Format Name: (empty)
- Billing Indicator:  Y  N
- Separate Charge Booking:  Y  N
- Charge Posting in Detail:  Y  N
- VAT on Principal: 0.00
- Tax ID: (empty)
- Tax Type: (empty)

A 'ClientCondition' tab is selected at the top. Other tabs include Client Cond Advice, Client Cond FXDiscount, Client Cond Charge Account, and Audit. A 'TEMENOS' logo is visible in the bottom right corner.

Client level STP FX limit can be maintained.

Path: Payment Hub > Client Condition GUI > Client Conditions

## PP.CLIENT.CONDITION – FX LIMIT

VAT on charge	<input checked="" type="radio"/> Y <input type="radio"/> N
Non STP Flag	<input type="radio"/> Y <input type="radio"/> N <input type="radio"/> C <input type="radio"/> D
STP Limit	<input type="text"/>
Non STP FX Flag	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/> C <input type="radio"/> D
STP FX Limit	<input type="text" value="100"/>
Debit special instructions	<input type="text"/>
Credit special instructions	<input type="text"/>
CurrencyCode.1	
Incoming Lead Time.1	<input type="text"/>
Outgoing Lead Time.1	<input type="text"/>
Debit float	<input type="text"/>
Credit float	<input type="text"/>
Batch ACK NACK Indicator	<input type="radio"/> Ack <input type="radio"/> Nack <input type="radio"/> Both
Tran ACKNACK Indicator	<input type="radio"/> Ack <input type="radio"/> Nack <input type="radio"/> Both
Interim Status Indicator	<input type="radio"/> Y <input type="radio"/> N
Customer Status Msg Type	<input type="text"/>

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## PP.CURRENCY – FX LIMIT

**Admin Menu > Payment Hub > Static Data GUI > Currency**

Table	Currency
ID	EUR
Field Name	Field Value
Company	BNK
Country Code	EU
Currency Group	*
Currency Name	EURO
Fractional Digit	2
Country Name	EUROPE
FX Limit	999,999,999
Weekend Day1	Saturday
Weekend Day2	Sunday
Override Through Upload	<ul style="list-style-type: none"><li>● Y</li><li>● N</li></ul>



FX Limit for the currency can be defined.

Path: Payment Hub > Static Data GUI > Currency

## Special FX Rates – Send Request

Pending and Processed Payments

Company	FT Number	Ccy	Amt	Acc Comp	Acc Num	Acc Ccy	Date	Cust Ref	Sender Ref	Status Code	Description	⋮
BNK	BNK18107FKOLBMJC	EUR	160.00	BNK	10995	USD	17 APR 2018			645	Waiting - Rate Request Queue	⋮

Payment Information Results 1 - 1 of 1

Company ID :	BNK
FT Number :	BNK18107FKOLBMJC
Options	<b>Audit trail</b>

INF	Transaction amount exceeds the currency FX amount for debit home currency	FXC30010	EUR100	17 APR 2018 15:37:48.153
INF	FX threshold is breached. Rate request to Treasury will be sent post authorisation of payment	FXC30019		17 APR 2018 15:37:48.153

User Menu > Payment Hub > Payment Exceptions > Treasury Rate Request > Treasury Rate Request

Treasury Rate Request

Txn ID	Deal Type	Lm Order Type	Internal Ref	Int Rate Utilized	Ccy	Order Amount	Expiry Date	Execute Rate	⋮
FXLO1810733000	SP	INT	BNK18107FKOLBMJC		EUR	160.00			⋮

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After a payment is successfully submitted and Authorised (no screen/component errors left), the status of the payment is updated (and the Order Entry flow ends) to indicate that this payment can be picked up for further processing which will pass the payment through to the Filtering component. Filtering is the first component in the workflow to be invoked after the end of the STP-module followed by Fee, Posting and Payment Generation Components.

### ***FX Threshold limit***

“FX Threshold” limit and Rate Request as STP has been set at the company level. As payment transaction has been breached the FX Threshold limit, during payment status has been updated with status code “645” and also Payment has been parked under Pending FX Rate Request queue to get the rate from T24-Treasury system.

## Special FX Rates – Receive Rate

FXLIM ORDER | FXL01810733000

Limit Reference	11018	COCA-COLA ▾
Payment Through	10995	COCA-COLA ▾
Receive Through		▼
Counterparty Corrs Id		▼
Counterparty Corrs Address		▼
Dealer Desk	00	ALL ▾
Account Officer		▼
Executed Rate	1.15	
Execution Forward Rate		
Execute Order	<input checked="" type="radio"/> Yes	
Cancel the order	<input type="radio"/> Yes	
Expire Order	<input type="radio"/> Yes	
Order Status	ACTIVE	
Forex Contract Id.1		
Deal Date	17 APR 2018	17 APR 2018
T1 Ref No		
Dealer Name		
Notes.1		
Base Ccy	EUR	Euro ▾
Reserved9		
Reserved8		
Reserved7		
Reserved6		
Reserved5		
Reserved4		
Reserved3		
Reserved2		

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After successful completion of the rate request process from the T24-Treasury system, payment transaction status has been moved from “645” to continue other process in order to complete the payment. This concludes the FX rate request from TPH and obtains the rate from treasury system.

## Special FX Rates-Payment Generation

### Pending and Processed Payments

Company	FT Number	Ccy	Amt	⊖	Acc Comp	Acc Num	Acc Ccy	Date	Cust Ref	Sender Ref	Status Code	Description	⊖
BNK	BNK18107FKOLBMJC	EUR	160.00	⊖	BNK	10995	USD	17 APR 2018			646	Ready - FX processing	⊖

### Pending and Processed Payments

Company	FT Number	Ccy	Amt	⊖	Acc Comp	Acc Num	Acc Ccy	Date	Cust Ref	Sender Ref	Status Code	Description	⊖
BNK	BNK18107FKOLBMJC	EUR	160.00	⊖	BNK	10995	USD	17 APR 2018			687	Payment Generation Successful	⊖

### Time Stamp

### Status Code

20180417153748153	315
20180417153748153	319
20180417153748153	600
20180417155454258	645
20180417151921787	646
20180417174605937	687



## QUIZ

- Determine the direction when the TPH bank act as an intermediary.
- Which component decides the output of the payment based on the payment characteristics?
- Which table TPH fetches the FX rate?
- This the Fee type which can only be applied for a transaction if there is a particular condition which is met

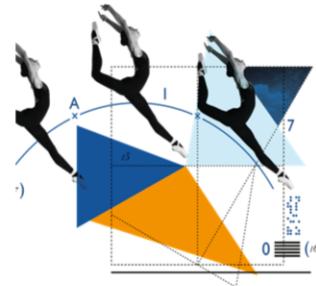
## QUIZ

- Which field worsen the cut off time for a specific client?
  
- Which option can be used to change the original value date of the payment
  
- Which type of contract is checked for the credit party in the payment?

## What Did We Learn?

### Conclusion

- Key features of TPH
  - Direction Determination
  - Product Determination
  - Routing and Settlement
  - Client Conditions
  - Dates Determination
  - Fee Determination
  - FX



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Thank You



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