MONTRAN

Afreximbank

PAPSS Participant Interface

PAPSS

Version: 1.06

Creation date: 2022-06-15

MONTRAN

DOCUMENT CONTROL

Title:	PAPSS Participant Interface
Code:	AFXM_PAPSS_Participant_Interface
Project:	PAPSS
Confidentiality:	Business Only
Integrity:	HIGH
Availability:	Medium
Version:	1.06
Date:	2022-06-15

DOCUMENT SIGNOFF

NATURE OF SIGNOFF	NAME	INSTITUTION	ROLE	DATE
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DOCUMENT HISTORY

DATE	VERSION	CHANGES
2019-02-15	0.01	First draft.
2019-04-09	0.02	Added description for Category Purpose and Purpose in pacs.008 payment message
2020-06-08	0.03	Non instant Payment added
2020-08-20	0.04	Participant Status function EscrowTransactions functions
2020-08-24	0.05	Multiple ammendments based on received feedback

DOCUMENT HISTORY

DATE	VERSION	CHANGES
2020-08-27	0.06	Changed customer HTTP header attribute from X-MONTRAN-RTP to X-PAPSS-
2020-09-16	0.07	RTPRequest to Pay and Request to Pay Response added
2020-10-22	0.08	Account Inquiry and Response added
2021-02-15	0.10	GetFXRate api
2021-04-08	0.11	Update participants.001 sample message
2021-05-17	0.12	Add missing Error Codes
2021-12-17	1.00 Approved	Final document
2022-01-05	1.01	URL descritons for APIs, fix acmt.024 sample
2022-01-28	1.02	Add clarification regarding accept statuses for instant/non-instant transactions
2022-02-11	1.03	Invoice Payments changes
2022-03-15	1.04	Updated message samples from Annex 1 (7.1)
2022-05-24	1.05	Remaining outputs
2022-06-14	1.06	Include estimated fee in FXRate API

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List of Acronyms

BIC	Bank Identifier Code
CB	Central Bank
CH	Clearing House
EPC	European Payments Council
HTTP	Hypertext Transder Protocol
IBAN	International Bank Account Number
MCM	Management and Control Module
NSI	Net Settlment Instruction
PM	Processing Module
RTP	Real-Time Payments
SEPA	Single European Payments Area
STP	Straight-Through-Processing
UTC	Universal Time Coordinated
IPS	Instant Payments System
UI	User Interface
PAPSS	Pan African Payment and Settlement System

1. Introduction

This document describes the technical specification of the **Straight-Through-Processing (STP)** communication interface that the central **Real-Time Payments (RTP)** system, a sub-system of the PAPSS, provides for the communication with Participant members of the PAPSS. The document contains the following information:

1. A general presentation of the system architecture
2. Functions provided by the STP interface
3. STP client library (for the JAVA programming language)
4. HTTP communication protocol

1.1. Glossary

TERM	DEFINITION
Technical Account	Participant's account, created and managed in the RTP system, through which the net multilateral position is constantly calculated and managed during a clearing session.
Message processing time	The time period from the moment the message is received by the system and the moment the system delivers a message to the next Participant from the processing chain.
Guarantee	Funds in the RTGS system (or pledges in the CSD system) created by a Participant, which are at the disposal of the central bank that acts as settlement agent, therefore guaranteing the Participant's net position settlement as calculated by the PAPSS RTP system.
Net Settlement Instruction (NSI)	The settlement of funds between Participants based on net positions.
IPS/RTP	Instant Payment(s) System/Real-Time Payments. IPS and RTP mean the same thing and used interchangeably in this document. It is a sub-system of the PAPSS.
Message	Payment instruction received by the RTP system. Notification of a processed payment instruction.
Available clearing balance	Value, automatically calculated by the system, as algebraic amount of net amount of sent and received payments, which is currently available to be used for initiating other payment or to defund the PAPSS account.
Processing Module	Component of the RTP system that processes the messages received from Participants.

Management and Control Module (MCM)	Component of the RTP system that implements the user interface and allows the execution of the system's management operations.
Settlement Moment	The moment the RTP system initializes the current settlement session.
Operator	PAPSS employee, who accesses all or only a part of the RTP system's functionalities based in its given access rights.
Participant	PAPSS participant Institution that is a payment service provider, who is directly connected to the RTP system and which processes messages on behalf of its Customers or itself. It can be a settlement agent Participant (central bank participant), who is responsible for both local currency settlement in its jurisdiction and foreign currency settlement with PAPSS Settlement Bank as well as optionally processes messages on behalf of its Customers or itself.
Direct Participant (Settlement Agent Participant)	PAPSS participant Institution that connects to the RTP system, sends and receives payment messages on behalf of its Customers or itself and has a settlement account in RTGS of its domestic Central Bank. This can also be a central bank if beyond acting as a settlement agent, it connects to the RTP system, sends and receives payment on behalf of its customers or itself.
Indirect Participant (Non-Settlement Participant)	PAPSS RTP system's participant Institution that connects to the RTP system, sends and receives payment messages on behalf of its customers or itself, but it does not have a settlement account in RTGS of its domestic Central Bank. The settlement of net positions is made through another system's Participant (Direct Participant) that has a settlement account in the RTGS of its domestic Central Bank.
Offline Period for Participant	Time period in which the Participant is not connected to the system and cannot send/receive/process any payment messages.
Guarantee Ceiling	Value of guarantees setup in RTGS for Participant. In the case of indirect (non-settlement) Participant, the guarantee ceiling is provided by the (Direct Participant) Participant's associated settlement agent.
Net Position	Algrebraic amount of a System Participant's payments and receipts settled, calculated following the exchange of payments instructions with the other Participants (Technical Account Balance). If the amount is negative, the net position is considered to be debtor. If the amount is positive, the new position is considered as creditor.
SCT Inst Rulebook	SEPA Instant Credit Transfer (SCT Inst) schema of the European Payments Council.
System	The system application for real-time payments.
User	RTP system's participant Institution's employee, who can access a part of the system's functionalities based in its given access rights.

1.2. Referenced Documents

NAME	AUTHOR
SCT Inst Rulebook v1.0	European Payments Council (EPC)
SEPA Instant Credit Transfer Interbank Implementation Guidelines v1.1	EPC

1.3. System Architecture

The Participant's information system contains the following components for accessing the RTP:

- **Back-office system** that generates and processes PAPSS RTP messages regarding: payments, processing confirmations, position queries, and guarantee ceilings configuration for their own non-settlement Participants (indirect participants). This component is developed and managed by each PAPSS RTP Participant.
- **STP application** through which PAPSS RTP messages are sent and received to and from the Central PAPSS RTP. This component is developed and managed by each PAPSS RTP Participant. The RTP client library provided by PAPSS PAPSS can be optionally used for the development of the STP application by all Participants.
- **User Workstation** through which the **Graphic User Interface (GUI)** of the Management and Control module can be accessed. This module is managed by PAPSS. The Participants manage the Workstation.

The central RTP system consists of two main modules:

1. The **Processing module (PM)** that offers the STP interface for Participants' payment messages.
2. The **Management and Control module** that provides the monitoring and control functions, using a graphical user interface.

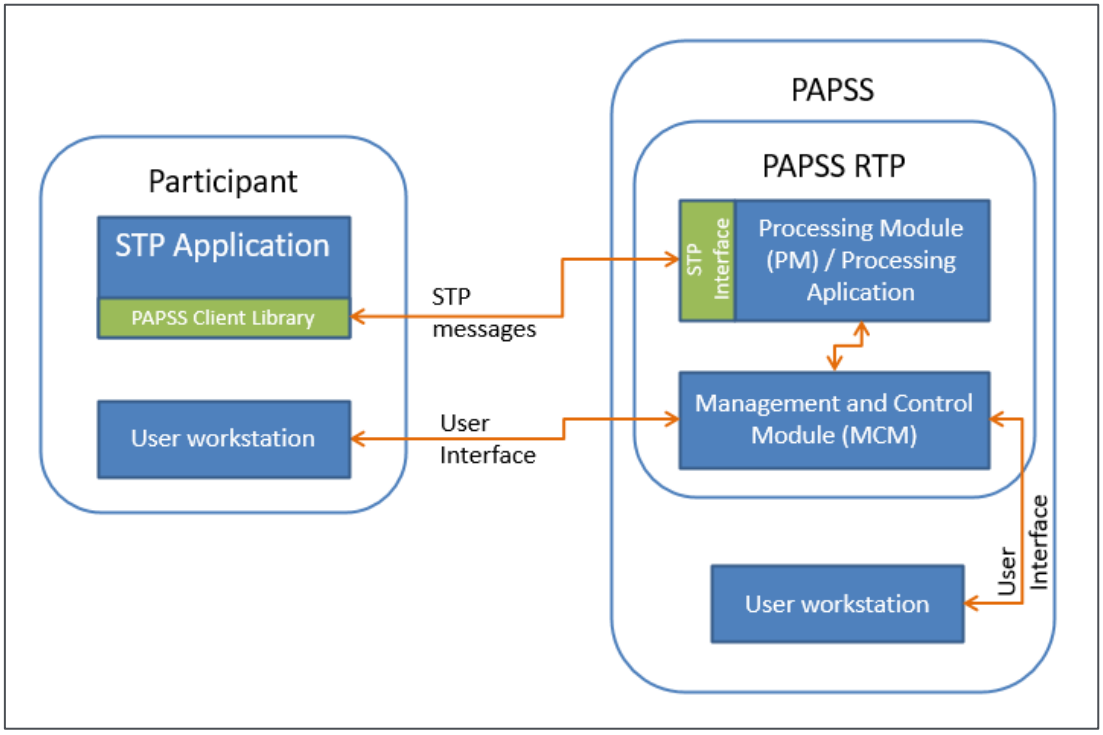


FIGURE 1. SYSTEM ARCHITECHTURE

2. Straight-Through-Processing Interface Operations

This describes the interface to be implemented by Participants in order to send/receive messages to/from PAPSS RTP system.

The STP Interface offers the following Participant operations:

- Send messages according to the PAPSS CT Inst schema.
- Receive messages (both from PAPSS CT Inst schema and additional reconciliation messages or general notifications generated by the central RTP system).
- Send confirmation message – pacs.002 for a received credit transfer instruction – pacs.008.
- Send confirmation of received message (only for messages different from pacs.008, pacs.008 confirmation is described above).
- Queries for: technical accounts' positions, guarantee ceiling and available clearing balance for own account.
- Queries for positions, query and configuration guarantee ceiling for non-settlement Participants.
- Queries for participant status

The STP interface is developed using the HTTP client-server protocol, through which the Participants' STP applications constantly request from the central RTP system to execute synchronous operations. This means that the Participant application initiates a request and awaits receiving an answer from the RTP.

RTP implements a duplication-detection algorithm so that sending and re-sending of a message to RTP means that RTP processes only the first received message.

The STP communication protocol is stateless, i.e. each operation is completely independent from the others. The interface allows a client application to execute a business operation by accesing a single function, without having to implement a complex protocol with multiple steps.

2.1. Sending Messages to RTP

In order to send a message to the RTP the Participant System makes a HTTP Request on a dedicated service URL (detailed below in the HTTP API section). The RTP processes the message and replies back with a response message. The participant system can issue multiple such requests in parallel, it does not have to wait for one request to complete before sending anohter message. Because each operation is synchronous, under normal operation conditions, for each request made to RTP there will be a response message. Each HTTP operation is independent from the others (stateless design)

and each requested is replied to with a response message, thus eliminating the need for complicate request/response matching processing on the Participant side.

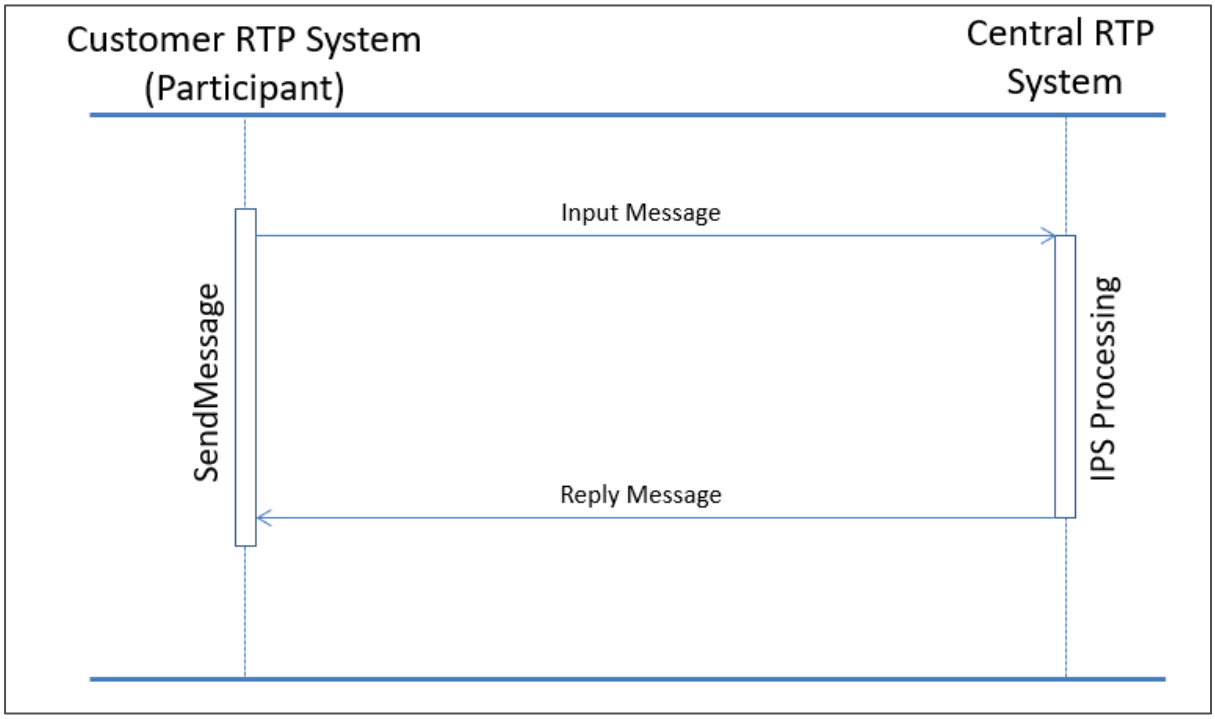


FIGURE 2. MESSAGE SENDING FLOW

The message types processed by the RTP system are presented in the table below. Next to the SCT Int Schema messages, the RTP also owns some messages.

TABLE 1. RTP RECEPTION – ACCEPTED MESSAGES

MESSAGE NAME	DESCRIPTION	RTP REPLY
pacs.008	Instant Credit Transfer ISO20022 message	pacs.002
pacs.004	Positive reply ISO20022 message to Request for Recall (cam.056)	pacs.002
pacs.002	Confirmation or Rejection ISO20022 message to Instant Credit Transfer (ConfirmationMessage)	pacs.002
camt.056	ISO20022 message for Request for Call of a Instant Credit Transfer	pacs.002
camt.029	ISO20022 rejection message to Request for Recall (cam.056)	pacs.002
pacs.028	ISO20022 message for information request about the status of a previously processed Instant Credit Transfer instruction	pacs.002

pain.013	ISO20022 message for “Request to Pay”	pacs.002
pain.014	ISO20022 message for “Request to Pay” Response, used only for Negative Response	pacs.002
camt.007	ISO20022 message for stopping and resuming for new CTP payments based on code included	pacs.002

The central RTP system sends a pacs.002 **ReplyMessage** when the sending, validation and processing have been executed. The receiver bank generates pacs.002 **ConfirmationMessage** to the central RTP system to report the result of internal verifications (timeout/account availability/AML/etc.). This way, the central RTP system will have all the information necessary to complete the transaction clearing.

In some cases, when messages different from pacs.008 and pacs.028 are used, the sender Participant receives a reply message from the central RTP system **immediately after the execution of the validation and processing of the initial message**. This processing **does not mean** that the receiver Participant received the message from the central RTP system but only that the outgoing messages has been places in a queue for the receiver participant to consume.

When a pacs.008 message initiates a real-time payment, the receiver Participant’s **time interval for the payment processing’s is between sending the initial message (InputMessage pacs.008) and receiving the reply from the sender Participant (ReplyMessage pacs.002).** Thus, the sending Participant receives only one final reply message about the status of the initiated payment.

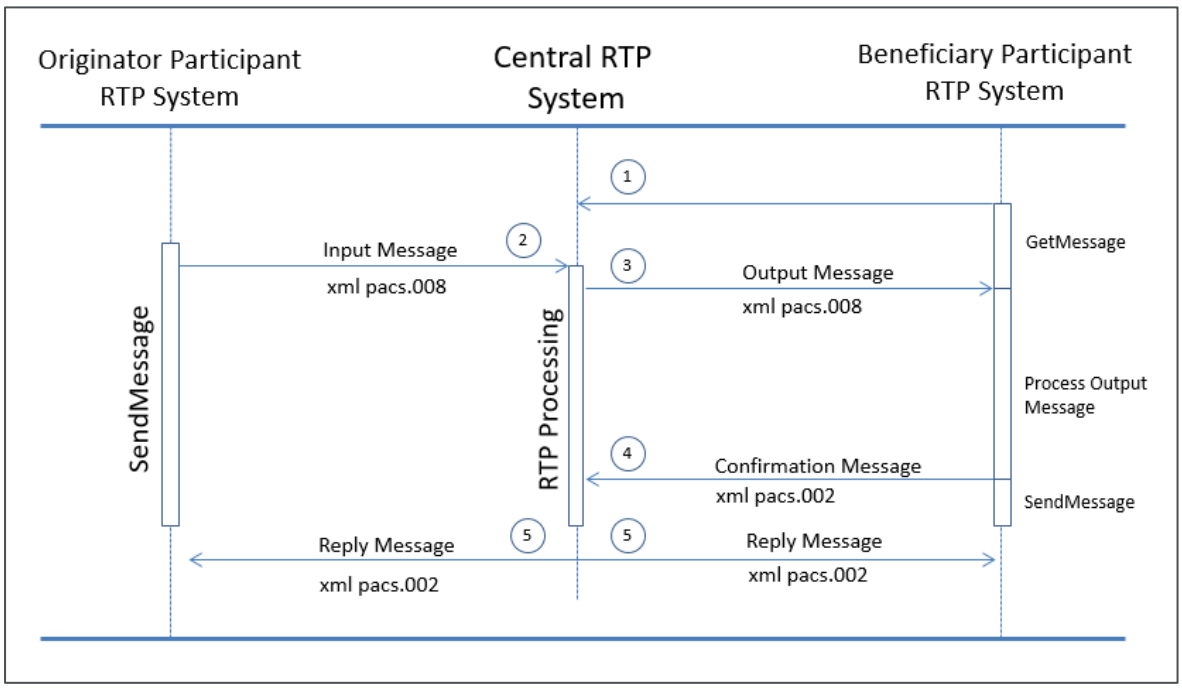


FIGURE 3. SENDING AND RECEIVING FLOW OF A PACS.008 PAYMENT MESSAGE BY PARTICIPANTS

In diagram presented above the first request initiated by the Beneficiary Participant to retreive a message is not part of the main flow for sending a transaction but it is part of the flow for receiving messages, described below.

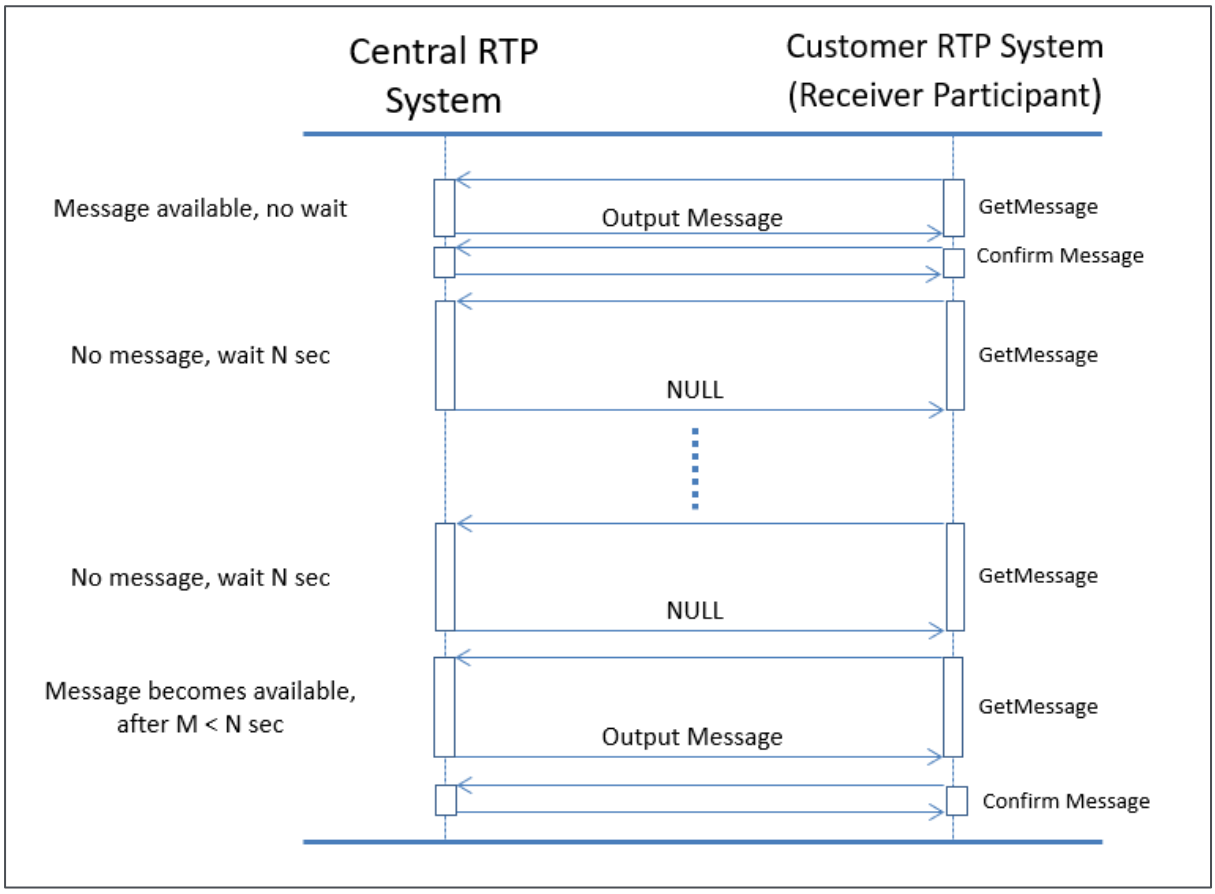
The actual flow is described in more detail in the pacs.008 detailed diagram. Also final pacs.002 messages sent by RTP to both participants are done in parallel.

2.2. Receiving Messages from RTP

The **Receive Message** function is implemented using to the long-poll mechanism. This means that messages are retrieved from the RTP by the Participant systems.

If the central RTP system has no message to deliver to Participants, the RTP system delays the reply for a certain time interval, in the event that a message becomes available, e.g. another Participant sends a payment instruction. When the **receive function** is in WAITING status, and a message is received, the message is immediately delivered to the calling Participant.

If no message is available for receive function by the end of the maximum awaiting time period[1], the receive function sends a zero value and the Participant's application tries again.



[1] Right now, this parameter (HTTP Long-Polling) is set in the central IPS to 5 seconds.

FIGURE 4. RECEIVE FUNCTION FLOW

This procedure permits monitoring the Participants' connection to the central RTP system. Technically, the Participant's application initiates a connection only when a message needs to be sent. But in the context of 24x7 operating time, for receiving messages, the STP application must be connected to the central RTP system permanently. The PAPSS PAPSS RTP system detects the receive operations' frequency of a Participant by calling the ONLINE status for a Participant that calls the receive message function at a time interval equal or less then 5 seconds[2]. If the STP application does not call the receive message function or it does not send any message within a time period of less then N seconds, the Participant's status becomes OFFLINE for the central PAPSS RTP system[3].

An OFFLINE Participant that sends a message becomes automatically ONLINE, even without executing a **GetMessage** operation.

The messages that Participants receive from the central RTP system must be **confirmed** using a specific function. The confirmation operation signals the central RTP system that the Participant's system succeeded to store and/or processes the message and therefore, the central RTP message can delete that message from its internal queues. If the central RTP system does not receive the Participant's confirmation, the central RTP will resend the unconfirmed messages to the receiver Participant after a few seconds.

The confirmation operation must be executed for:

- All XML message types belonging the the ISO20022 schema, except for the execution of pacs.008, for which, according to the processing flow, the Participant system must send a confirmation/rejection pacs.002 message. This pacs.002 message also confirms receiving the pacs.008 message.
- Reconciliation message: rcon.001.

The messages that are ready to be delivered to the participants and those that were received but not yet confirmed are presented in the UI in status PENDING.

[2] System parameter
[3] Payment messages (pacs.008) with an Offline receiving participant are rejected by the IPS

3. Message Procesing

3.1. Message Structure

The RTP system uses XML messages that containt two different parts:

1. A common header, with an identical structure for all messages.
2. A message body, different for each message type.

The Business Application Header respects the ISO 20022 head.001.001.01 schema and entails the following:

1. Routing information: sender and receiver institution.
2. Digital signature information.
3. Type of business message.

Please see a detailed presentation of the header in section 7.1.1.

The message body is specific to each message type handled by the RTP system: pacs.008, pacs.002, pacs.004, camt.056, camt.029, pacs.028, pain.013, pain.014, recon.001 and positions.001.

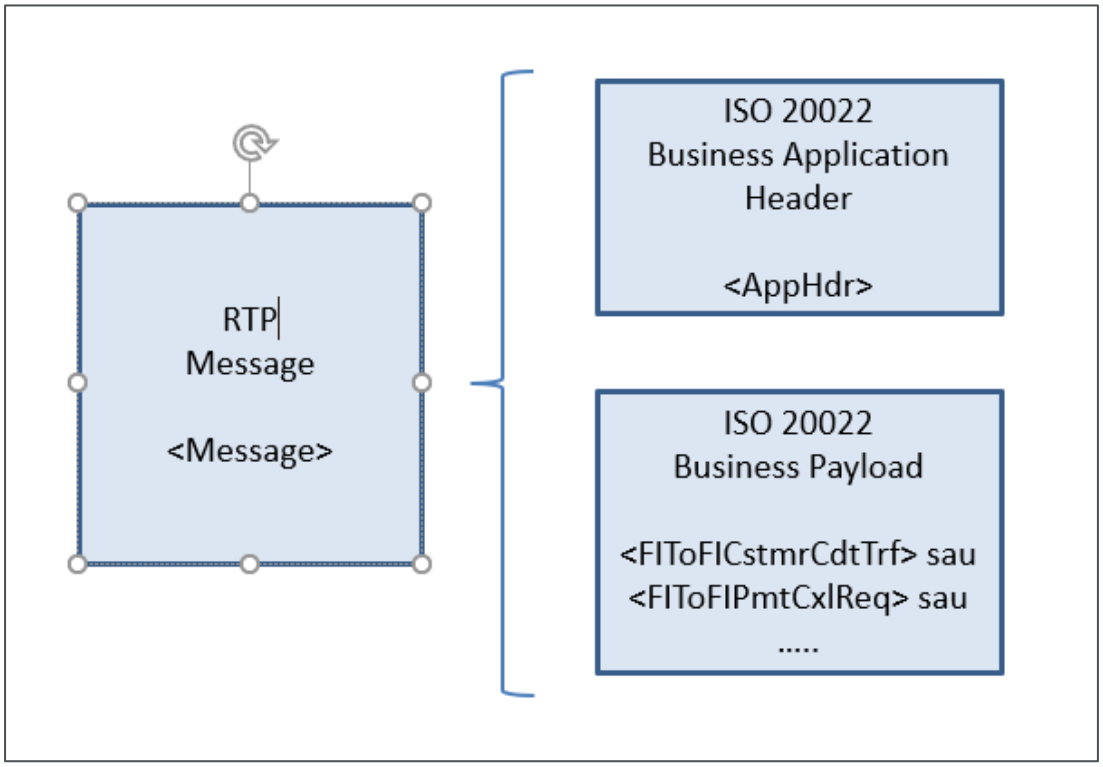


FIGURE 5. MESSAGE STRUCTURE

3.2. PAPSS CT Inst Schema Message Diagrams

The messages processed by the RTP system must respect the XSD schemas according to the ISO20022 standard. Additionally, there are set of validation that are performed by PAPSS according to the business rules of the system

Below are the list of generic message elements (in XML) which are validated by PAPSS and whose values, if not compliant, will trigger the message rejection

XSD ELEMENT	ALLOWED VALUE
Allowed currency (ActiveCurrencyCode)	Three-letter currency code (ISO 4217) according to list of currencies configured in PAPSS
Account Identification	IBAN
	Othr > Id, Othr > SchmeNm > Cd > BBAN
Clearing system Indentification	PAPSS
Local Instrument > Code	<according to Payment schemas defined in PAPSS by admin>
Financial Institution Id	Participants are identified in messages using their PAPSS ID, assigned by the Administrator. The ID is transmitted in **FinInstnId > ClrSysMmbId > MmbId,** together with scheme identification **FinInstnId > ClrSysMmbId > ClrSysId > Prtry = "PAPSS"**

In addition, next to the XSD level executed validations, the following message fields are explicitly verified by the RTP system and must have the values:

FIELD NAME	ALLOWED VALUE
Clearing System > Proprietary	PAPSS
Service Level > Proprietary	INST
Charge Bearer	SLEV
Settlement Method	CLRG
Financial Institution Clearing System Id (FinInstnId > ClrSysMmbId > ClrlSysId > Prtry)	PAPSS

3.3. Message Validation within the Central Real-Time Payments System

The central RTP system validates the messages received from Participants and generates a pacs.002 message that comprises the validation result. The pacs.002 messages are received by calling the receive message function.

3.3.1. PAPSS CT Inst and Non-Inst Validation – pacs.008

This message is used to initiate a Credit Transfer (CT) transaction from the Originator Participant to the Beneficiary Participant on behalf of their respective customers. This is the ISO20022 equivalent of MT103 SWIFT Message. It can be processed in an instant mode with low latency or in a non-instant fashion with delayed execution (T+1). The actual processing mode depends on each country regulation.

The RTP system's validation process for the received pacs.008 payment messages follows the steps:

1. Parsing and validation of XML message according to the XSD schema – if this step is not succesfully completed, RTP replies a pacs.002 message.
2. Message business fields' validation:
    a. **TtlIntrBkSttlmAmt** – payment amount and currency. These must be valid according to the predefined payment schema.
    b. **IntrBkSttlmDt** – payment date, must be the current calendar day (exception is described in the note below).
    c. Static message fields: **ClearingSystem**, **ServiceLevel**, **LocalInstrument.**
    d. **InstgAgt** – PAPSS ID of sender Participant. This must be an ACTIVE Participant in the system. This ID must identify the sender Participant detected at the sending channel.
    e. **DbtrAgt** – PAPSS ID of debtor Participant. This must be equal to **InstAgt**.
    f. **CdtrAgt** – PAPSS ID of creditor Participant. This must identify an ACTIVE Participant that is connected to the system (ONLINE).
    g. **IntrBkSttlmAmt** – values equal to the ones in **TtlIntrBkSttlmAmt**.
    h. **DbtrAcct** and **CdtrAcct** – if the acounts are using the IBAN format then the codes must be valid: structure and checksum (ISO 7064).
3. Timestamp validation, expired message – the system checks if the time in the field **Acceptance Date Time** (AT-50) is not exceeded by the current processing time with more than the Timeout parameter configured in the payment schema.

4. Duplicate message verification. For this purpose, the RTP system compares the message reference (field **TxId**) with all references of same type messages that the system received from the same Participant (DebtorAgent) during the last 24 hours.
5. Validation of digital signature – according to the description at section 4.2.

During this validation process, the RTP system reports only the first detected error by replying a pacs.002 message. The message is placed in REJECTED status and the processing is completed.

Note: Detailed validation of payment date: The system accepts payments initiated by a Participant even before 00:00, e.g. 23:59:59 on payment date T-1, if these messages are received and processed on date T until 00:00+“grace-time”, where “grace-time” is a parameter equal to Timeout Deadline (default 20 seconds). In this case, the system only accepts payments instructions with payment date (**IntrBkSttlmDt**) equal to T-1 ist 00:00:20.

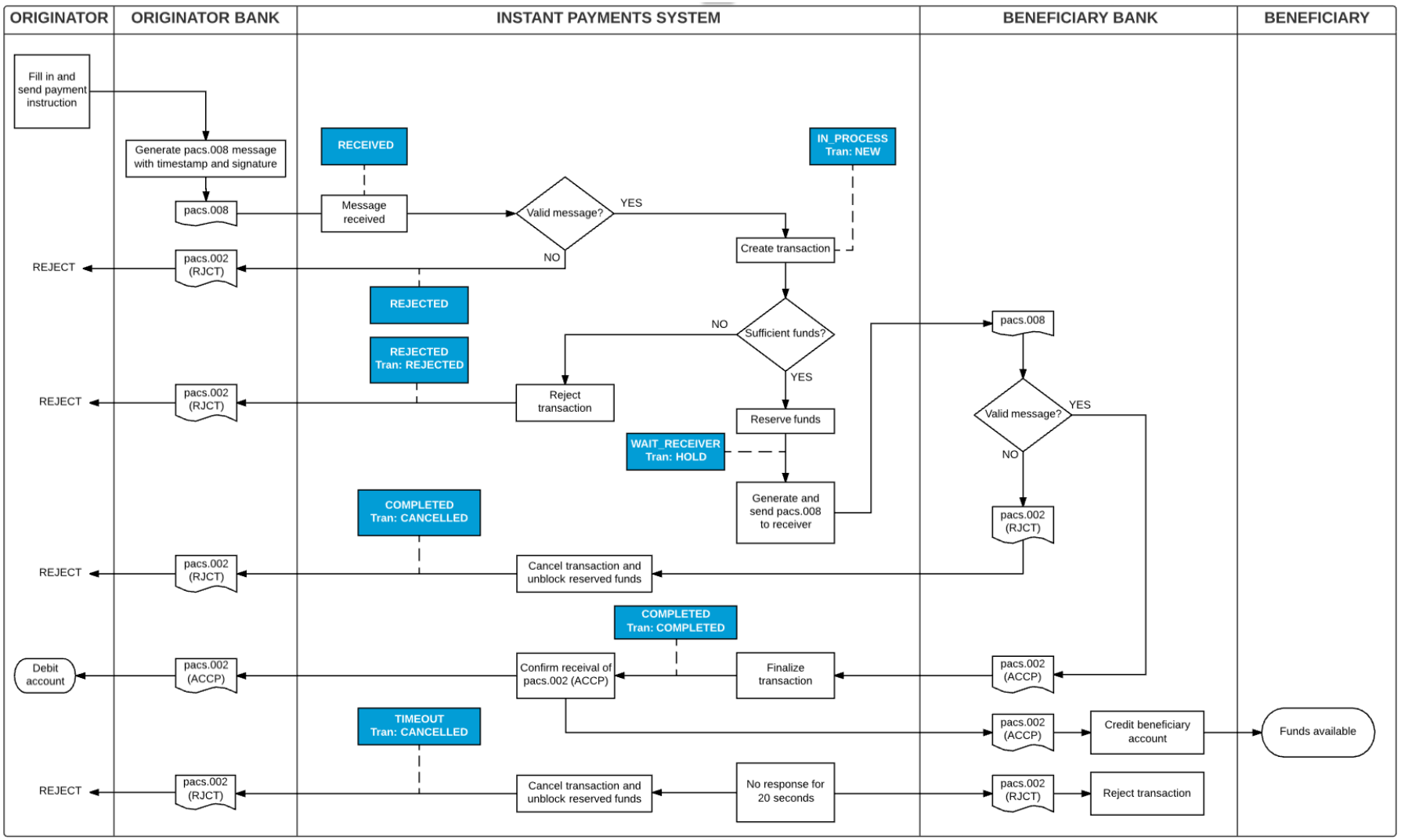


FIGURE 6. STATUS TRANSITION FLOW OF PACS.008 PAYMENT MESSAGE IN CASE OF AN INSTANT TRANSACTION

In case of a non-instant transaction (if the sender or the receiver of the transaction have the non-instant flag) the diagram is a little different:

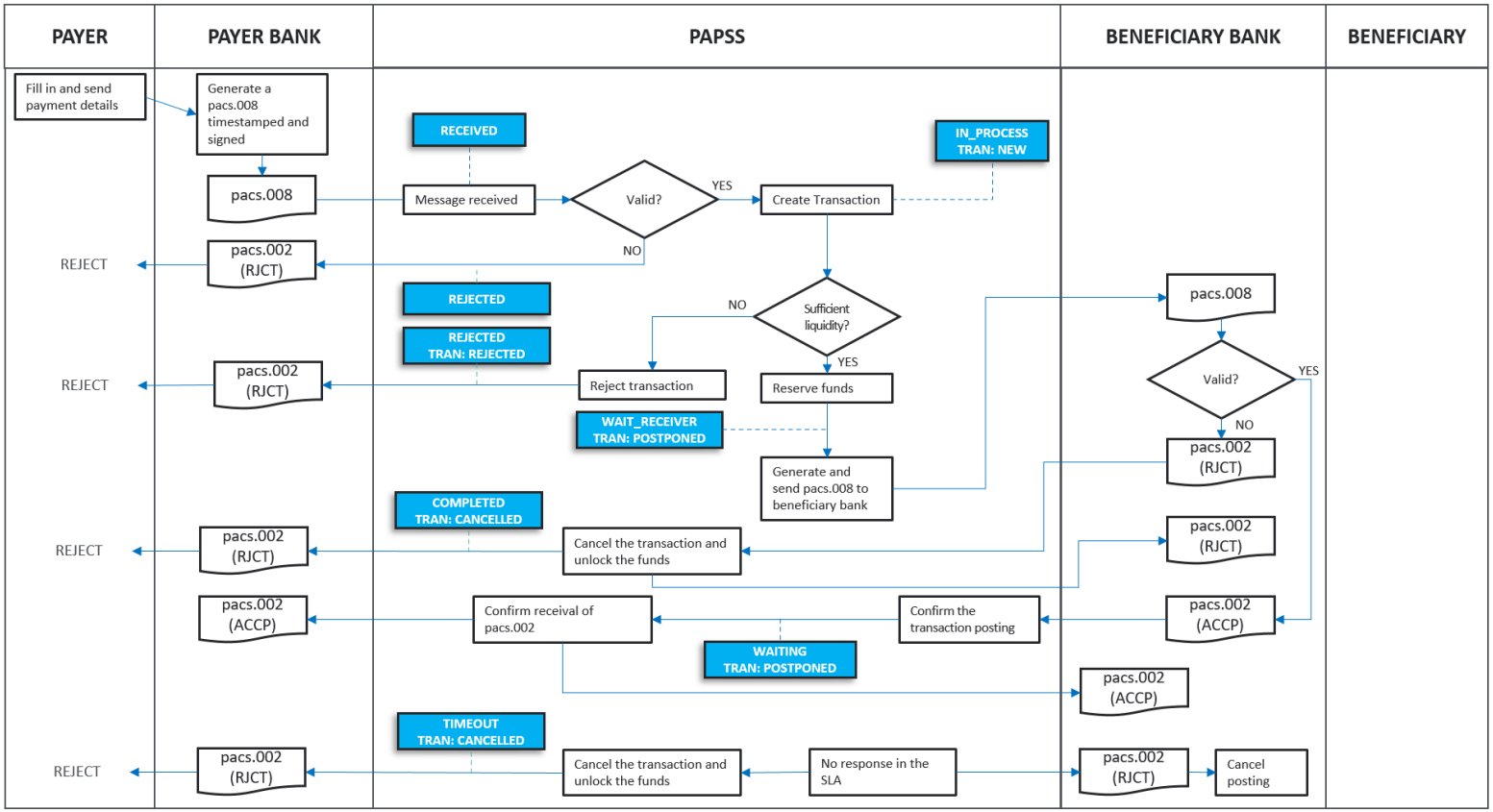


FIGURE 7. STATUS TRANSACTION FLOW OF PACS.008 PAYMENTMESSAGE IN CASE OF A NON-INSTANT TRANSACTION

The transaction is automaticaly completed in the next day if no other action is done on it like: cancelation or stopping.

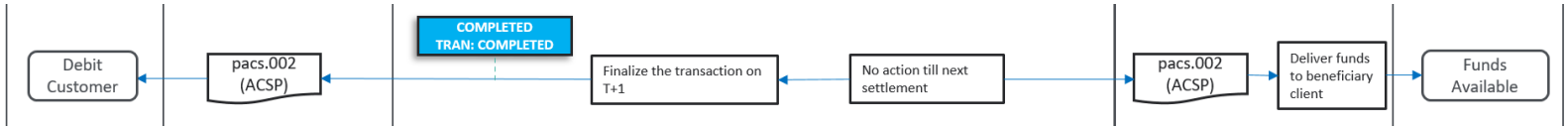


FIGURE 8 AUTOMATICALY COMPLETION OF A POSTPONED TRANSACTION AFTER CUTOFF TIME AT CLEARING EVENT

3.3.2. PositiveAnswer to Recall Validation – pacs.004

This message is used by a Beneficiary Bank to return the funds received from an Originator Bank. The message (and the corresponding transction) can be initiated as a (positive) response to a Recall message (camt.056) sent by the Originator Participant.

The RTP system's validation process for the received pacs.004 payment messages follows the steps:

1. Parsing and validation of XML message according to the XSD schema – if this step is not succesfully completed, RTP replies a pacs.002 message.
2. Message business fields' validation:
    a. **TtlIntrBkSttlmAmt** – payment amount and currency. These must be valid according to the predefined payment schema.
    b. **IntrBkSttlmDt** – payment date, must be the current calendar day (exception is described in the note from section 3.3.1. –PAPSS CT Inst Validation pacs.008).
    c. Static message fields: **ClearingSystem**, **ServiceLevel**, **LocalInstrument**.
    d. **InstgAg**t – PAPSS ID of sender Participant. This must be an ACTIVE Participant in the system. This ID must identify the sender Participant detected at the sending channel.
    e. **DbtrAgt** (from OrgnlTxRef) – PAPSS ID of debtor Participant (original). This must identify an ACTIVE Participant.
    f. **CdtrAgt** (from OrgnlTxRef) – PAPSS ID of creditor Participant (original). This must be equal to **InstAgt**.
    g. **RtrdIntrBkSttlmAmt** – values equal to the ones in **TtlIntrBkSttlmAmt**.
    h. **DbtrAcct** and **CdtrAcct** (from OrgnlTxRef) – if the acounts are using the IBAN format then the codes must be valid: structure and checksum (ISO 7064).
    i. The code of the Instititution that generated the reply message filled in field **Orgtr > Id > OrgId > Othr > Id** must be equal to **InstgAgt**.
    j. Reason Code – only FOCR code is allowed.
3. Duplicate message verification. For this purpose, the RTP system compares the message reference (field **RtrId**) with all references of same type messages that the system received from the same Participant (DebtorAgent) during the last 24 hours.
4. Validation of digital signature – according to the description at section 4.2.

During this validation process, the RTP system reports only the first detected error by replying a pacs.002 message. The message is placed in REJECTED status and the processing is completed.

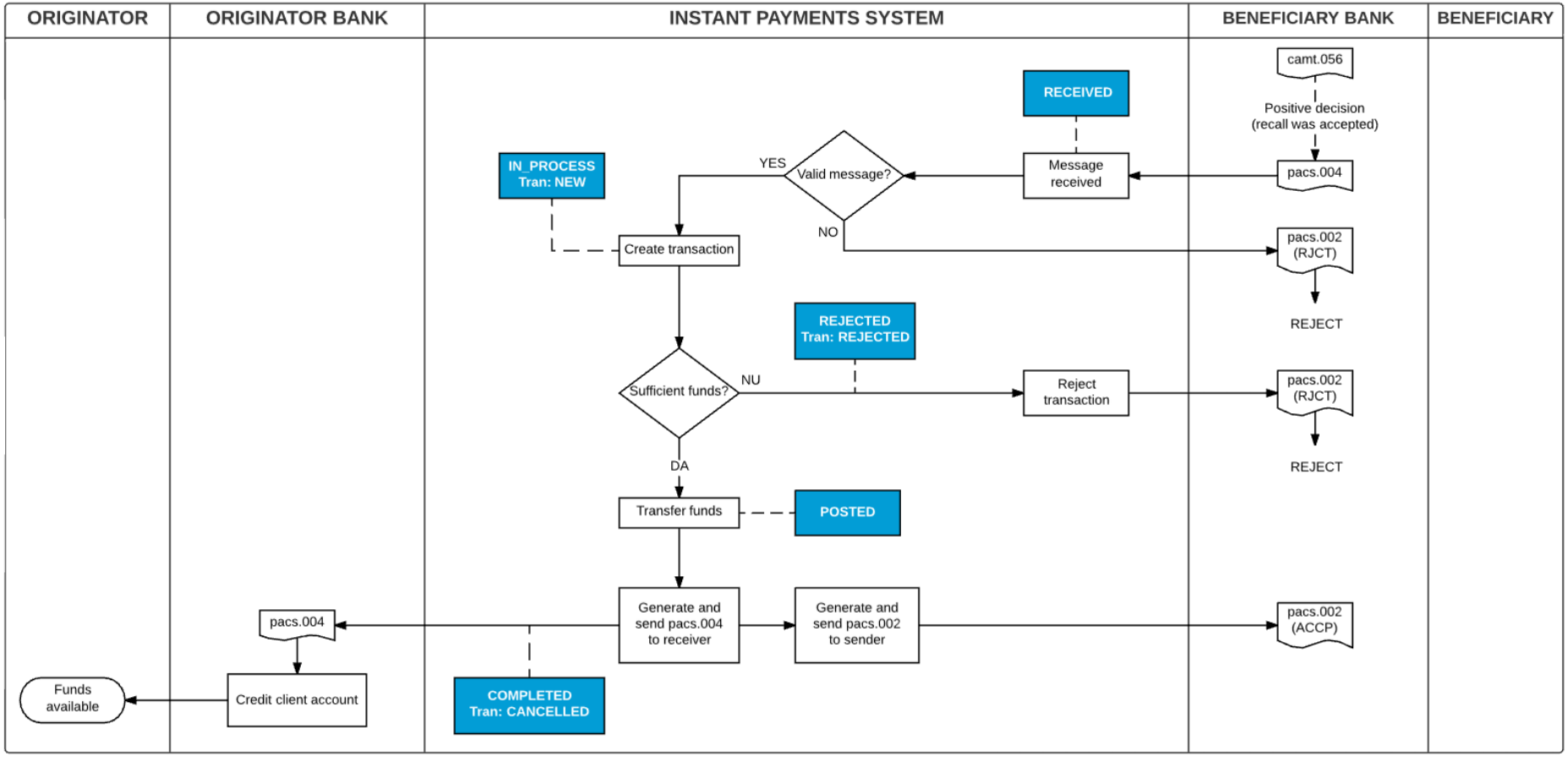


FIGURE 9. STATUS TRANSITION FLOW OF PACS.004 PAYMENT MESSAGE

3.3.3. Recall Message Validation – camt.056

The camt.056 Recall Message is used by the Originator Participant to ask the cancellion or return of a transction submitted previously. The recall message thus refers the original payment message (pacs.008) and contains some fields indicating the reasons for the recall. The recall itself is not unconditional and it is processed by the Beneficiary Participant according to the operating rules, resulting in either the payment being returned using a pacs.004 message or the recall request being rejected using a camt.029 message.

The RTP system's validation process for the received camt.056 payment messages follows the steps:

1. Parsing and validation of XML message according to the XSD schema – if this step is not succesfully completed, RTP replies a pacs.002 message.
2. Message business fields' validation:
    a. Static message fields: **ClearingSystem**, **ServiceLevel**, **LocalInstrument**.
    b. **Reason for Cancellation** – must be the ones allowed by the schema: DUPL for Cd, TECH or FRAD for Prtry.
    c. **Assigner** – PAPSS ID of sender Participant. It must identify an ACTIVE Participant in the system.
    d. **Assignee** – ID of the PAPSS system.
    e. **OrgnlIntrBkSttlmDt** – date of original payment. It must fall within the parameters of the payment schema (T-10).
    f. **DbtrAgt** (from OrgnlTxRef) – PAPSS ID of debtor Participant (original). This must be equal to **Assigner**.
    g. **CdtrAgt** (from OrgnlTxRef) – PAPSS ID of creditor Participant (original). This must identify an ACTIVE Participant.
    h. **DbtrAcct** and **CdtrAcct** (from OrgnlTxRef) – if the acounts are using the IBAN format then the codes must be valid: structure and checksum (ISO 7064).
    i. The code of the Instititution that generated the reply message filled in field **Orgtr > Id > OrgId > Othr > Id** must be the same with the one filled in field **InstgAgt**.
    j. Reason Code – only FOCR code is allowed.
3. Duplicate message verification. For this purpose, the RTP system compares the message reference (field **CxlId**) with all references of same type messages that the system received from the same Participant during the last 24 hours.
4. Validation of digital signature – according to the description at section 4.2.

During this validation process, the RTP system reports only the first detected error by replying a pacs.002 message. The message is placed in REJECTED status and the processing is completed.

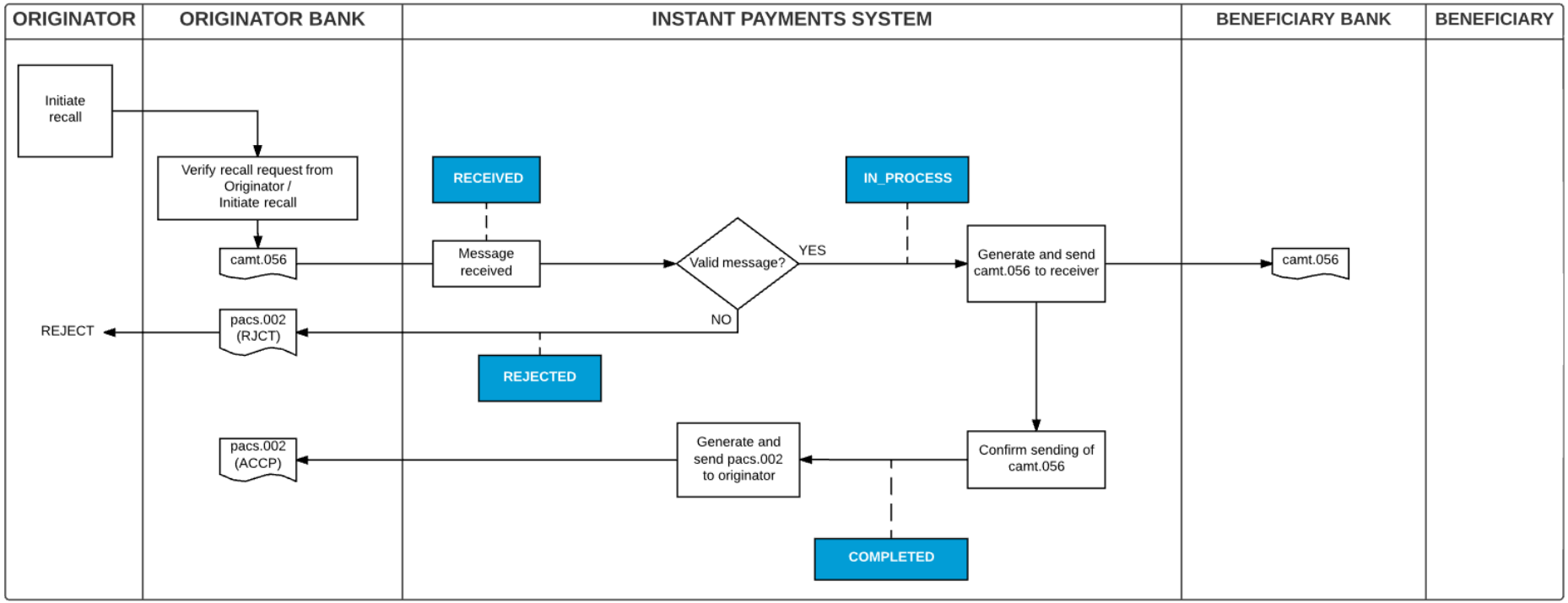


FIGURE 10. STATUS TRANSITION FLOW OF CAMT.056 PAYMENT MESSAGE

3.3.4. Negative Answer to Recall Message Validation – camt.029

The camt.029 is used by the Beneficiary Participant to inform the Originator Participant about the rejection of the recall request submitted previously. It is just non-financial reply to the camt.056 message containing the rejection reason. One reason for rejecting a recall message is when the Beneficiary Participant cannot return the payment without the Beneficiary Customer consent according to the local regulations and the consent is not given. Such situations will be handled outside of the system. Another reason could be when the Beneficiary Participant fails to find the original transction referred by the recall message.

The RTP system's validation process for the received camt.029 payment messages follows the steps:

1. Parsing and validation of XML message according to the XSD schema – if this step is not succesfully completed, RTP replies a pacs.002 message.
2. Message business fields' validation:
    a. Static message fields: **ClearingSystem**, **ServiceLevel**, **LocalInstrument**.
    b. **Reason for negative answer** – must be the ones allowed by the schema: CUST or LEGL for Cd, ARDT, AC04, AM04, NOAS or NOOR for Prtry.
    c. **CxlStsRsnInf > Additional Information** – only for code ELGL.
    d. **Assigner** – PAPSS ID of sender Participant. It must identify an ACTIVE participant in the system. Also, the code must identify the sender Participant detected at the communication channel level.
    e. **Assignee** – ID of the PAPSS system.
    f. **IntrBkSttlmDt** (from OrgnlTxRef) – date of original payment. It must fall within the parameters of the payment schema.
    g. **DbtrAgt** – PAPSS ID of debtor Participant (original). This must be equal to **Assigner**.
    h. **CdtrAgt** – PAPSS ID of creditor Participant (original). This must identify an ACTIVE Participant.
    i. **RtrdIntrBkSttlmAmt** – values equal to the ones in **TtlIntrBkSttlmAmt**.
    j. **DbtrAcct** and **CdtrAcct** – if the acounts are using the IBAN format then the codes must be valid: structure and checksum (ISO 7064).
3. Duplicate message verification. For this purpose, the RTP system compares the message reference (field **CxlStsId**) with all references of same type messages that the system received from the same Participant (DebtorAgent) during the last 24 hours.
4. Validation of digital signature – according to the description at section 4.2.

During this validation process, the RTP system reports only first detected error by replying a pacs.002 message. The message is placed in REJECTED status and the processing is completed.

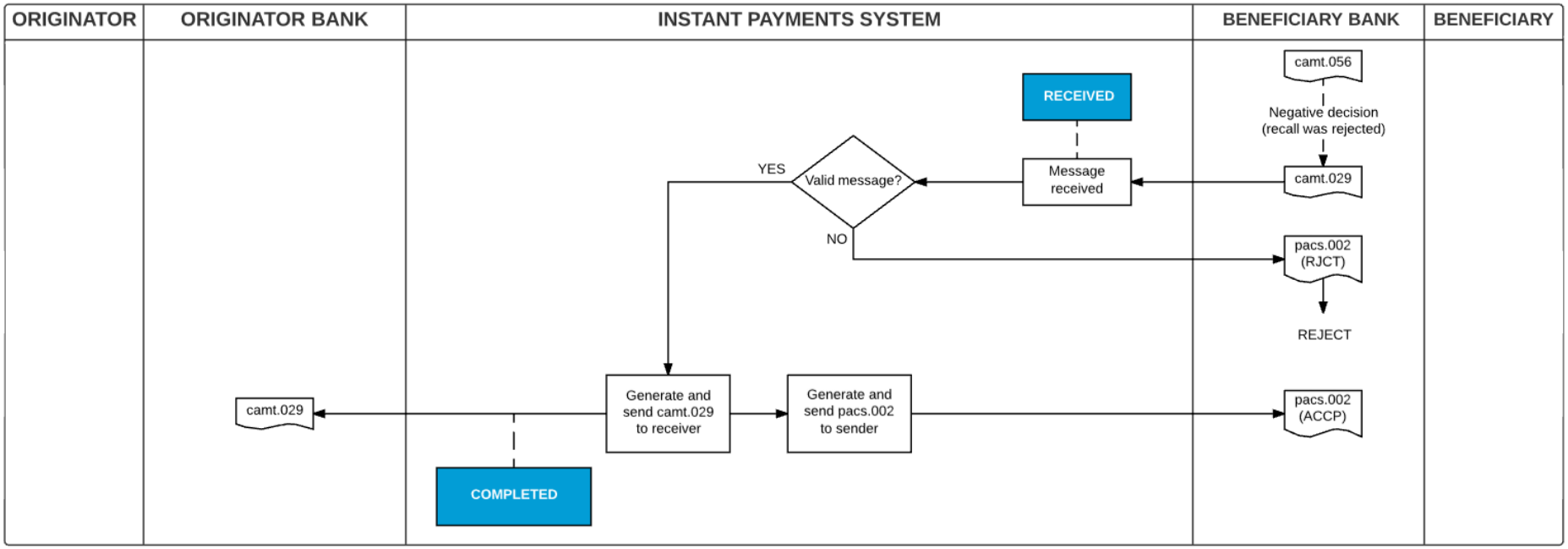


FIGURE 11. STATUS TRANSITION FLOW OF CAMT.029 PAYMENT MESSAGE (SIMILAR TO CAMT.056)

3.3.5. Request to Pay Message Validation – pain.013

The request to pay message is used to enable debit flows where a participant can ask for another to pay an amount. The flow is completed at a business level using the Credit Transfer once the receiving participant does all the checks (probably also clearing this with the account owner). The system does not enforce this, it is up to the bank to either send the credit or to send the Negative Answer to Request to Pay Message.

The IPS system's validation process for the received pain.013 payment messages follows the steps:

1. Parsing and validation of XML message according to the XSD schema – if this step is not succesfully completed, IPS replies a pacs.002 message.
2. Message business fields' validation:
    a. Static message fields: **ClearingSystem**, **ServiceLevel**, **LocalInstrument, CtgyPurp**.
    b. **Assigner** – PAPSS ID of sender Participant. It must identify an ACTIVE Participant in the system.
    c. **Assignee** – ID of the PAPSS system.
    d. **NbOfTxs** – value of this field should be 1.
    e. **Ustrd** (from RmtInf) – Information supplied to enable the matching/reconciliation of an entry with the items that the payment is intended to settle, such as commercial invoices in an accounts' receivable system, in an unstructured form. This information should appear in the pacs.008 sent to settle the request to pay.
    f. **DuePyblAmt** (from RmtInf) – due payable amount and currency; fields must exist and have valid values.
    g. **ReqdExctnDt** – requested execution date.
    h. **DbtrAgt** (from CdtTrfTx) – PAPSS ID of debtor Participant. This must identify an ACTIVE Participant.
    i. **CdtrAgt** (from CdtTrfTx) – PAPSS ID of creditor Participant. This must be equal to **Assigner**.
    a. **DbtrAcct** and **CdtrAcct**– if the acounts are using the IBAN format then the codes must be valid: structure and checksum (ISO 7064).
    j. The code of the Instititution that generated the reply message filled in field **BICOrBEI** must be the same with the one filled in field **InstgAgt**.
3. Duplicate message verification. For this purpose, the IPS system compares the message reference (field **PmtInfId**) with all references of same type messages that the system received from the same Participant during the last 24 hours.
4. Validation of digital signature – according to the description at section 4.2.

During this validation process, the IPS system reports only the first detected error by replying a pacs.002 message. The message is placed in REJECTED status and the processing is completed.

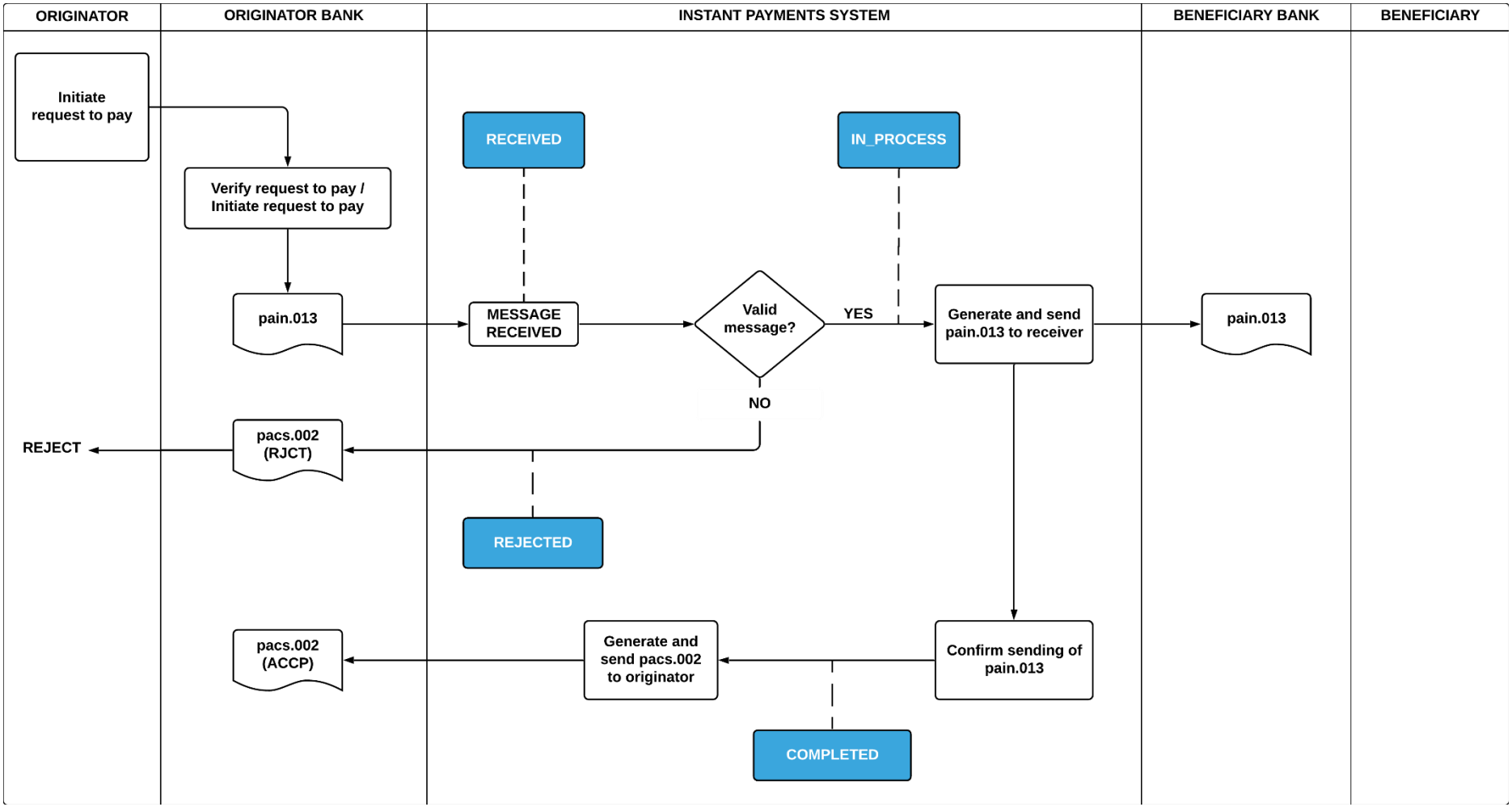


FIGURE 12. STATUS TRANSITION FLOW OF PAIN.013 MESSAGE

3.3.6. Negative Answer to Request to Pay Message Validation – pain.014

This message is used to refuse the Request to Pay previously received by the bank due to business reasons, like insufficient funds or client not authorizing the request

The IPS system's validation process for the received pain.014 payment messages follows the steps:

1. Parsing and validation of XML message according to the XSD schema – if this step is not succesfully completed, IPS replies a pacs.002 message.
2. Message business fields' validation:
    a. Static message fields: **ClearingSystem**, **ServiceLevel**, **LocalInstrument, CtgyPurp**.
    b. **Assigner** – PAPSS ID of sender Participant. It must identify an ACTIVE Participant in the system.
    c. **Assignee** – ID of the PAPSS system.
    d. **OrgnlMsgId** (from OrgnlGrpInfAndSts) – message id of original request to pay.
    e. **OrgnlMsgNmId** (from OrgnlGrpInfAndSts) – should be pain.013.001.07.
    f. **OrgnlCreDtTm** (from OrgnlGrpInfAndSts) – date of original request to pay.
    g. **OrgnlNbOfTxs** (from OrgnlGrpInfAndSts) – should be 1.
    h. **TxSts –** reported status for the initial request to pay; use RJCT
    i. **Sts** (from TxInfSts > StsRsnInf) – use an error code, as in the Error codes annex at the end of this document.
    j. **InstdAmt** - value equals to the ones in the original request to pay.
    k. **ReqdExctnDt** - value equals to the ones in the original request to pay.
    l. **Ustrd** – value equals to the ones in the original request to pay.
    m. **DuePyblAmt** – value equals to the ones in the original request to pay.
    n. **DbtrAgt** – PAPSS ID of debtor Participant (original). This must be equal to **Assigner**.
    o. **CdtrAgt** – PAPSS ID of creditor Participant (original). This must identify an ACTIVE Participant.
    b. **DbtrAcct** and **CdtrAcct** – – if the acounts are using the IBAN format then the codes must be valid: structure and checksum (ISO 7064).
3. Duplicate message verification. For this purpose, the IPS system compares the message reference (field **StsId**) with all references of same type messages that the system received from the same Participant (DebtorAgent) during the last 24 hours.

4. Validation of digital signature – according to the description at section 4.2.

During this validation process, the IPS system reports only first detected error by replying a pacs.002 message. The message is placed in REJECTED status and the processing is completed.

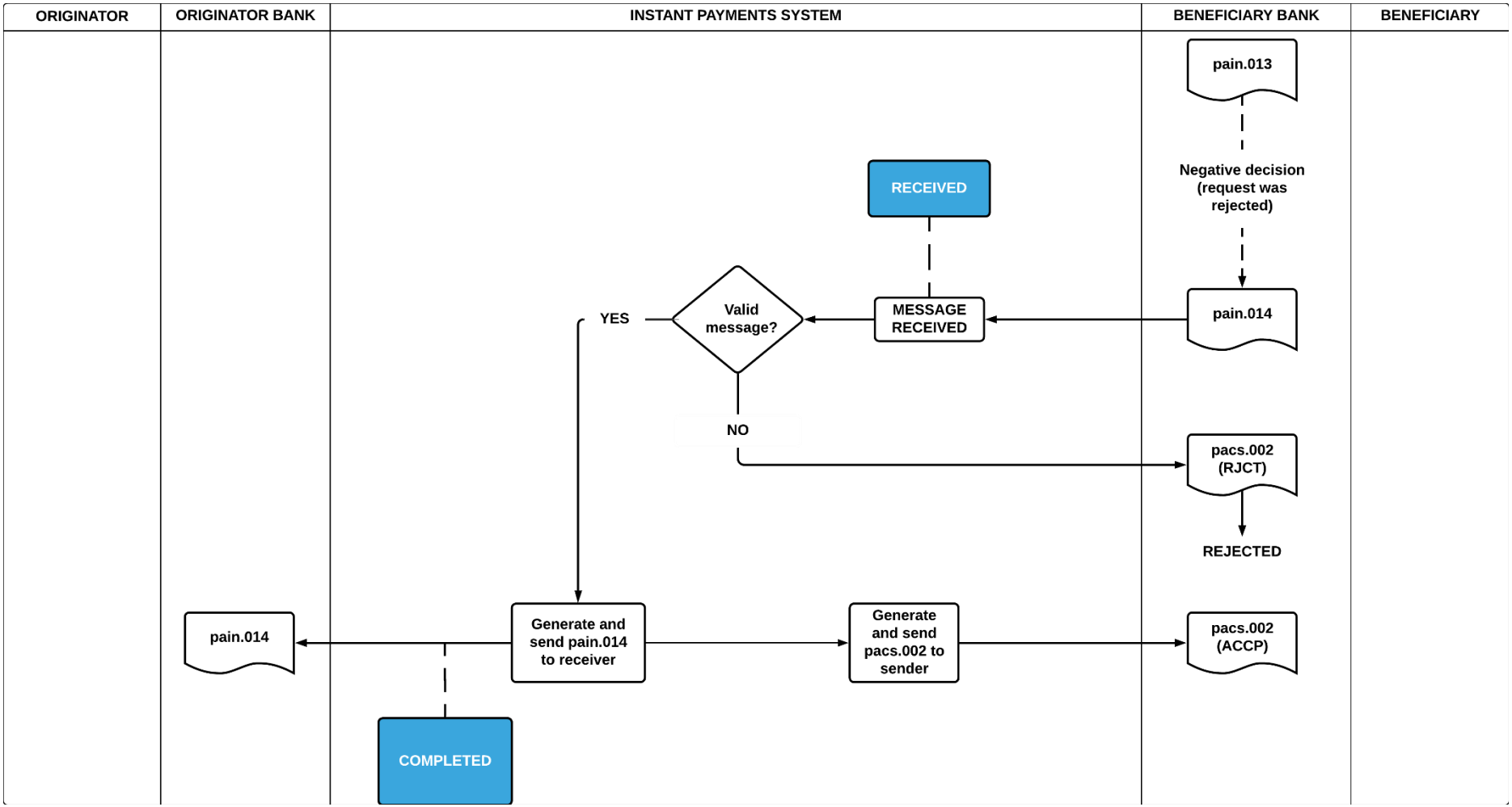


FIGURE 13. STATUS TRANSITION FLOW OF PAIN.014 MESSAGE (SIMILAR TO PAIN.013)

3.3.7. Investigation Message Validation – pacs.028

This message can be used by a Participant to find the status of transaction submitted previously using the pacs.008 message. This shall be used when the Originator Participant has not received a pacs.002 from the RTP with the transaction status as part of the normal pacs.008. The investigation flow should be initiated automatically by the Participant System after a number of seconds (configurable) after the payment timeout parameter as specified in the System Rules and the agreed schema.

The RTP system's validation process for the received pacs.028 payment messages follow the steps:

1. Parsing and validation of XML message according to the XSD schema – if this step is not succesfully completed, RTP replies a pacs.002 message.
2. Message business fields' validation:
    a. **InstgAg**t – PAPSS ID of sender Participant. This must be an ACTIVE participant in the system. This ID must identify the sender Participant detected at the sending channel.
    b. **Original Message Identification** – must identify a pacs.028 message generated by Instructing Agent. The transaction (pacs.008) is based on this reference and it verifies its status. If the RTP system does not find the corresponding transaction, then the message is rejected.
    c. **Original Message Name Identification** – must be "pacs.008.001.07".
    d. **Original Transaction ID** – validation with the original transaction reference.
    e. Static message fields (PmtTpInf): **ServiceLevel**, **LocalInstrument.**
    f. **DbtrAgt** (from OrgnlTxRef) – PAPSS ID of debtor Participant (original). This must be equal to **InstAgt**.
    g. The ID of the instititution that generated the reply message is equal to **InstgAgt**.
3. Timestamp validation, expired message – the system checks if the time in the field **Acceptance Date Time** (AT-50) is equal to the one in the original pacs.008 message.
4. Duplicate message verification. For this purpose, the RTP system compares the message reference (field **StsReqId**) with all references of same type messages that the system received from the same Participant (DebtorAgent) during the last 24 hours.
5. Validation of digital signature – according to the description at section 4.2.
6. RTP must have succesfully received and processed within the last 24 hour the pacs.008 message (payment instruction) referred to in the pacs.028 message. If not, RTP will reply a pacs.002 message with code RJCT and error code AG09 (internal code 1016).

During this validation process, the RTP system reports only the first detected error by replying a pacs.002 message. The message is placed in REJECTED status and the processing is completed.

The flow below is based on the EPC Rulebook flow.

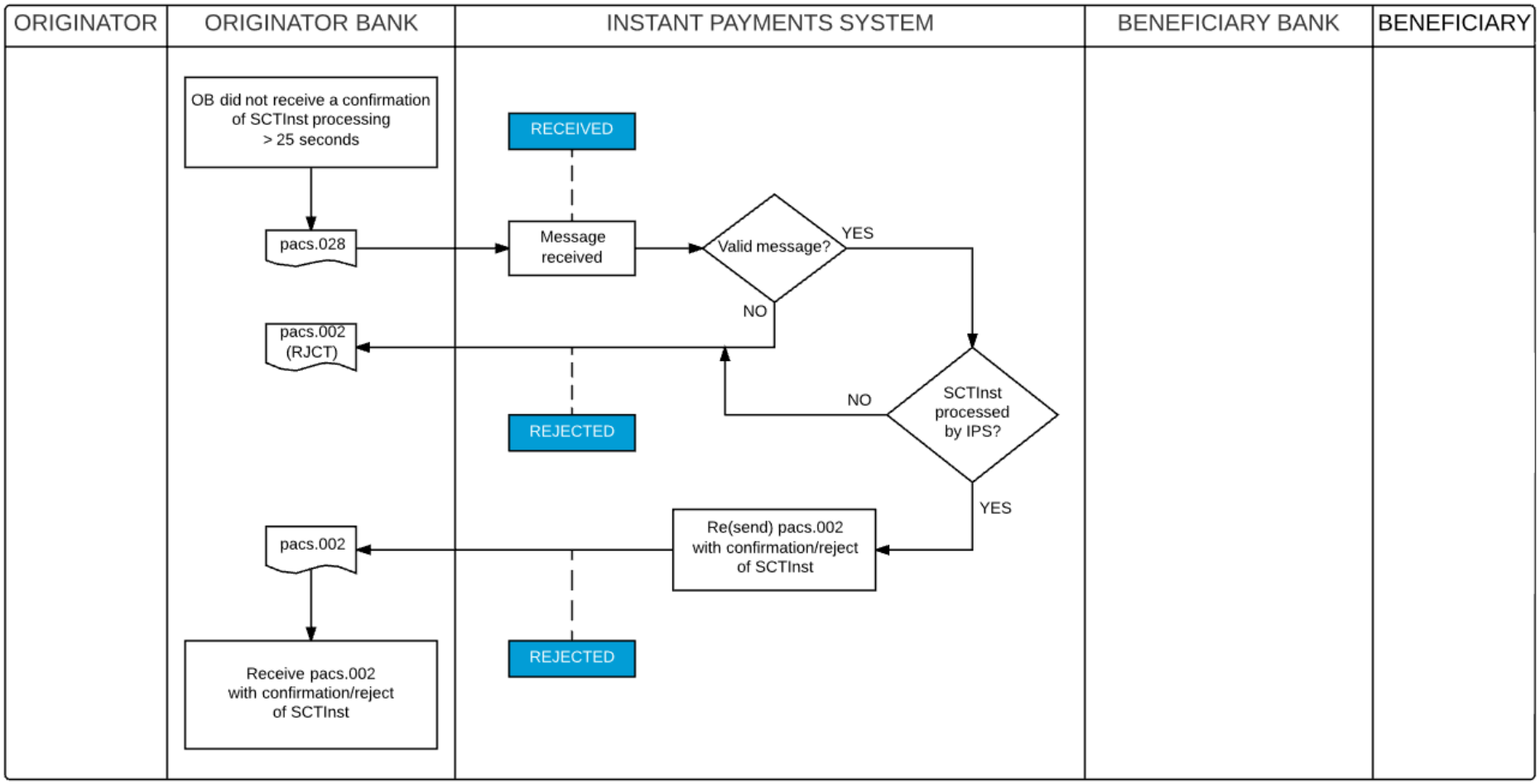


FIGURE 14. STATUS TRANSITION FLOW OF PACS.028 PAYMENT MESSAGE

3.3.8. Payment Confirmation/Rejection Message Validation – pacs.002

This message is used by the Beneficiary Participant to inform the RTP about the acceptance or rejection of received payment (pacs.008).

The RTP system's validation process for the received pacs.002 payment confirmation/rejection messages follow the steps:

1. Parsing and validation of XML message according to the XSD schema – if this step is not succesfully completed, RTP replies a pacs.002 message (ReplyMessage).
2. Message business fields' validation:
    a. **InstgAg**t – PAPSS ID of sender Participant. This must be an ACTIVE Participant in the system. This BIC must identify the sender Participant detected at the sending channel.
    b. **Original Message Identification** – must identify a pacs.008 message generated by the system and sent to receiver Participant. The transaction (pacs.008) is based on this reference and it verifies its status. If the RTP system does not find the corresponding transaction, then the message is rejected.
    c. **Original Message Name Identification** – must be "pacs.008.001.07".
    d. **Original Transaction Reference**– validation with the original transaction reference.
    e. Static message fields (PmtTpInf): **ServiceLevel**, **LocalInstrument.**
    f. **DbtrAgt** (from OrgnlTxRef) – PAPSS ID of debtor Participant (original). This must be equal to **InstAgt**.
    g. **IntrBkSttlmDt** – original payment date, must fall within the payment schema's paramaeters.
    h. The PAPSS ID of the instititution that generated the reply message is equal to **InstgAgt.**
    i. Group Status and Tran Status – ACCP or RJCT.
    j. Reason code – according to the SCT Inst schema.
3. Timestamp validation, expired message – the system checks if the time in the field **Acceptance Date Time** (AT-50) is equal to the one in the original pacs.008 message.
4. Validation of digital signature – according to the description at section 4.2.

During this validation process, the RTP system reports only the first detected error by replying a pacs.002 message. The message is placed in REJECTED status and the processing is completed.

The status transition flow of pacs.002 payment message is similar to the one presented above for camt.056 message.

This confirmation or rejection message (ConfirmationMessage) of a received pacs.008 payment instruction can be sent several times by the payment receiver Participant, in case the RTP's reply message (ReplyMessage) for the message processing is not received or processed by the receiving bank.

The processing of a pacs.002 ConfirmationMessage received by the RTP system from a Participant follows the steps:

a) Message validation, including the authentication of the referred transaction.

b) If the referred instruction (pacs.008) has WAIT_RECEIVER status, the system processes the transaction according to the reply received from the receiver bank (ACCP or RJCT).

c) The RTP system generates and sends a pacs.002 ReplyMessage to the receiver bank, which entails the transaction status:

   a. ACCP for a completed instant transaction or ACSC for a postponed non-instant transaction

   b. RJCT for a cancelled transation (including because of timeout cause, e.g. if the pacs.002 ConfirmationMessage is received after the expiration of the timeout parameter).

   c. Error code if it is the case.

d) The system generates the pacs.002 ReplyMessages to the sender Participant and to the receiver Participant at the moment of transaction completion (COMPLETE or CANCELLED). The Group Status and Tran Status of the ReplayMessges is ACSC if the transaction was cleared meaning that the status of it is COMPLETED or ACSP if the transaction was accepted but not yet cleared for non-instant transaction meaning that the status of the transactions is POSTPONED. In cases of non-instant transaction multiple ReplyMessages could be send by PAPSS every time the transaction is changes. If the transaction gets COMPLETED the Status will be ACSC.

e) In case, the receiver Participant does not receive the RTP generated message from step 3, it can send pacs.002 ConfirmationMessage again, in which case the RTP will process the message executing only steps 1 and 3, 2 and 4 being executed after the system received the initial pacs.002 message.

3.3.9. Identification Modification Advice Validation – acmt.022

The IdentificationModificationAdvice message is sent by an assigner to the Central Address Module. The assigner must be the owner of the account, in order to be allowed to initiate a proxy management operation for the respective account.

This message is used for all proxy management operations, as specified below:

- proxy registration – only UpdtdPtyAndAcctId element is present;
- proxy removal – only OrgnlPtyAndAcctId is present;
- proxy update – both OrgnlPtyAndAcctId and UpdtdPtyAndAcctId elements are present.

Proxy Registration Operation

The Proxy Registration Operation allows banks to:

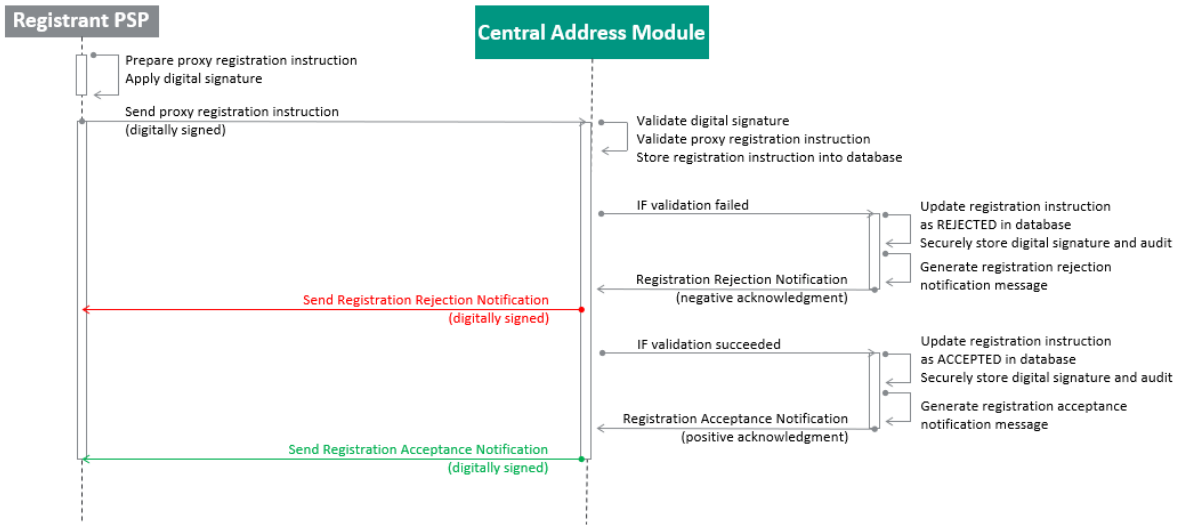
- Register new individual entities (IBAN – secondary identifier correspondence);
- Register additional secondary identifiers for already registered individual entities.

Participants are permitted to register proxy information only for owned accounts. The Banks will need ensure the correctness of the submitted information outside of the Central Address Module, prior registering individual entities.

When processing the registration operations, the Central Address Module will perform data validation in order to ensure ownership of the account and prevent duplication of information.

The Proxy Registration Operation supports single or batched registrations. A batch registration allows uploading secondary identifiers in batches. A batch update is split into atomic components, which are validated and, if all updates are valid, the batch modification is applied; otherwise, all the changes are rejected.

The Proxy Registration Operation flow is presented in the following diagram:



Proxy Removal Operation

The Proxy Removal Operation allows banks to:

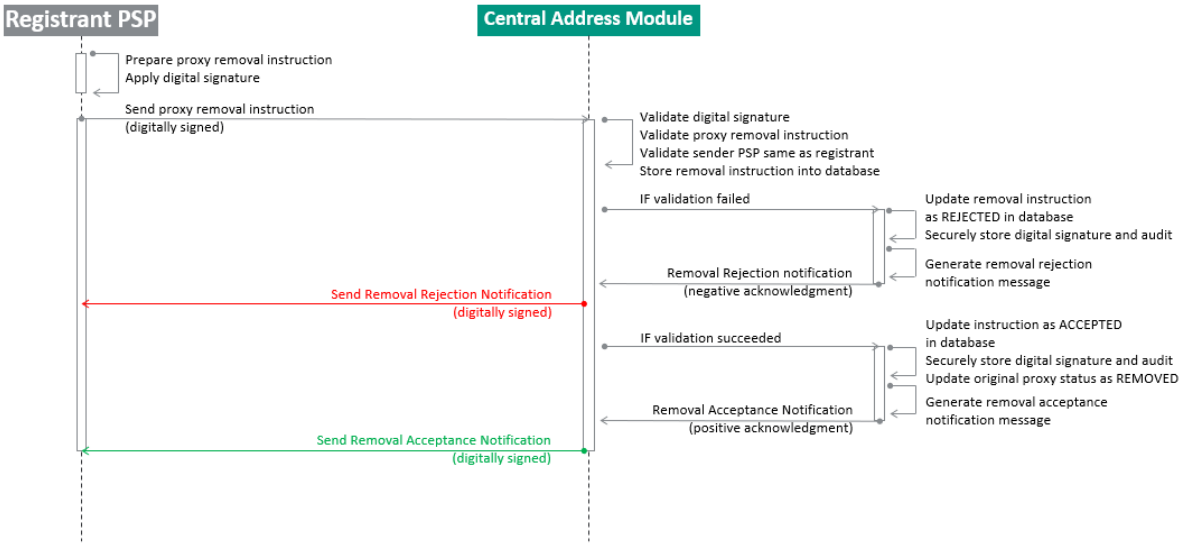
- Remove all proxy information regarding a specified IBAN;
- Remove some secondary identifiers for a specified IBAN.

Participants are permitted to remove proxy information only for owned accounts.

When processing the registration operations, the Central Address Module will perform data validation in order to ensure ownership of the account.

The Proxy Removal Operation supports single removals only. No batch removal is allowed.

The Proxy Removal Operation flow is presented in the following diagram:



Proxy Update Operation

The Proxy Update Operation allows banks to:

- Update all proxy information regarding a specified IBAN;
- Update some secondary identifiers for a specified IBAN.

Participants are permitted to update proxy information only for owned accounts. The Banks will need ensure the correctness of the submitted information outside of the Central Address Module, prior updating individual entities.

When processing the update operations, the Central Address Module will perform data validation in order to ensure ownership of the account and prevent duplication of information.

The Proxy Update Operation supports single updates only. No batch update is allowed.

3.3.10. Indentification Verification Request Validation – acmt.023

This message is sent by an assiner to an assignee. It is used to request the verification of an account identification information.

This message can be sent before the sending of one or several transactions messages. After the validation the message is forwarded to the assignee party that will respond with an Identification Verification Report message.

The RTP system's validation process for the received acmt.023 payment messages follows the steps:

1. Parsing and validation of XML message according to the XSD schema – if this step is not succesfully completed, RTP replies a acmt.024 message.

2. Message business fields' validation:
    a. **Assgnr** – PAPSS ID of sender Participant. This must be an ACTIVE participant in the system. This ID must identify the sender Participant detected at the sending channel.
    b. **Assgne** - PAPSS ID of receiver Participant. This must be an ACTIVE participant in the system. The Assgne must be different from Assignr. Also the Assgne Partifipant must be online.
3. Duplicate message verification. For this purpose, the RTP system compares the message reference (field **StsReqId**) with all references of same type messages that the system received from the same Participant (DebtorAgent) during the last 24 hours.
4. Validation of digital signature – according to the description at section 4.2.

During this validation process, the RTP system reports only the first detected error by replying a amt.024 message. The message is placed in REJECTED status and the processing is completed.

The flow below is based on the EPC Rulebook flow.

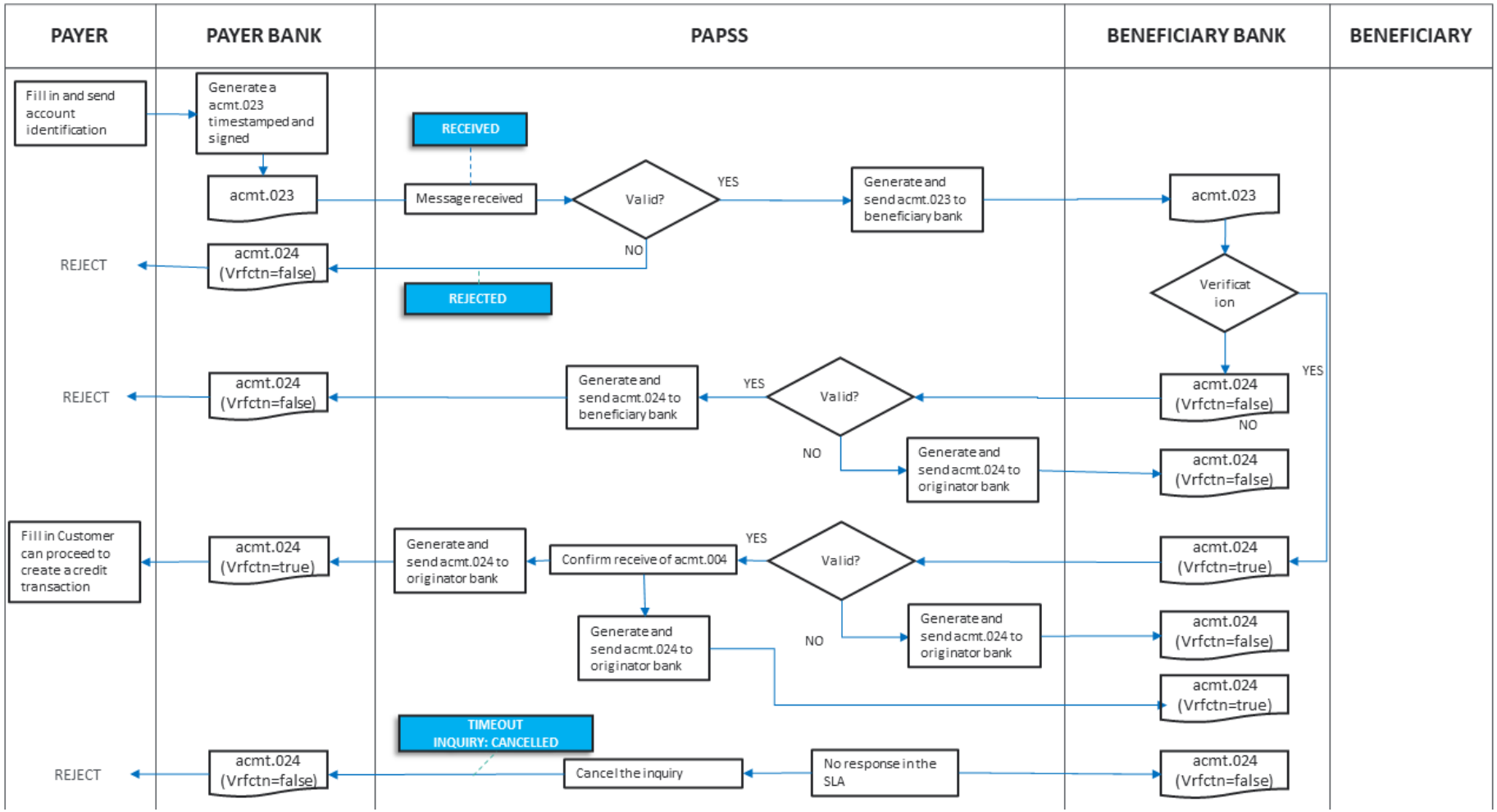


FIGURE 15. IDENTIFICATION VALIDATION REQUEST FLOW

3.3.11. Identification Verification Report Validation – acmt.024

This message is sent by a Participant as a respons to Identification Verification Request message – amt.023. It is also used as an response from RTP Central when an acmt.023 or acmt.024 is not valid.

The RTP system's validation process for the received acmt.023 payment messages follows the steps:

1. Parsing and validation of XML message according to the XSD schema – if this step is not succesfully completed, RTP replies a acmt.024 message.
2. Message business fields' validation:
    a. **Assgnr** – PAPSS ID of sender Participant. This must be an ACTIVE participant in the system. This ID must identify the sender Participant detected at the sending channel.
    b. **Assgne** - PAPSS ID of receiver Participant. This must be an ACTIVE participant in the system. The Assgne must be different from Assignr. Also, the Assgne Partifipant must be online.
    c. **OrgnlAssgnmt/MsgId –** The Id of the original acmt.023 request message mut exista in the RTP and it has to be recent.
3. Duplicate message verification. For this purpose, the RTP system compares the message reference (field **StsReqId**) with all references of same type messages that the system received from the same Participant (DebtorAgent) during the last 24 hours.
4. Validation of digital signature – according to the description at section 4.2.

During this validation process, the RTP system reports only the first detected error by replying a amt.024 message. The message is placed in REJECTED status and the processing is completed.

The usage of this message is covered by the previous flow (acmt.023).

3.3.12. Non-instant transactions

Non-instant credit transfer transactions are a special category of payments which are NOT cleared in real-time. According to some country regulation these payments are placed by the RTP in a POSTPONED status after they are confirmed by the Beneficiary Participant. The funds related to this transaction are also blocked on the debtor Participant account, so they cannot be used for other purposes. Normally these POSTPONED transactions are settled (COMPLETED) by RTP after a configurable interval (e.g. T+1).

The decision of postponing a transaction is taken by the Central System (PAPSS) based on how the regions involved in the transaction were set previously. The receiver of the Credit Transfer has to respond to PAPSS with Status ACCP after they successfully validate the payment message (pacs.008) and wait for the ReplyMessage (pacs.002) from PAPSS to set the status of the transaction internally.

If PAPSS respond with status ACSP it means that the transaction was accepted by the system but it was not yet cleared and its status is PORPONED.

At the moment of clearing of a POSPONED transaction, PAPSS will generate ReplyMessages to the sender and also to the receiver notifying about the final status of the transaction. The status in the notification (pacs.002 message) will be ACSC in the transaction was cleared and COMPLEETED or RJCT if the transaction was CANCELLED.

While the transactions are in POSTPONED status they can be STOPPED for clearing or even CANCELLED by the Originator. A STOPPED transaction is not considered for clearing unless it is resumed by the Originator when it returns to POSTPONED status. A STOPPED transaction is automatically CANCELLED by the system (PAPSS RTP) if it is older than a configurable expiration interval, usually longer than 24h.

Cancelling non-instant transactions – camt.056

A non-instant payment can be canceled at any time before the settlement. The cancellation can be requested by the Originator participant either by using the Web GUI or by sending a **camt.056** (Recall) message. The payment must be in POSTPONED or STOPPED status. If the payment was already settled then the recall message is handled as in the case of instant payments, that is the recall is forwarded to the Beneficiary Participant.

When the transaction is canceled PAPSS RTP send notifications in form of **pacs.002** messages to both Participants informing them about the status of the transaction.

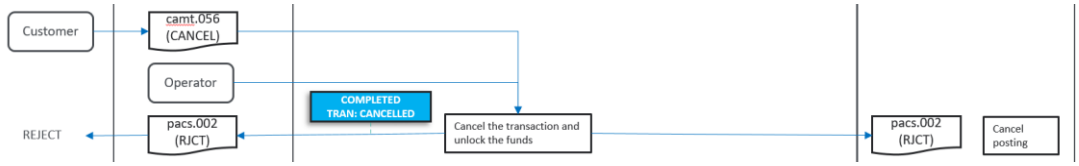


FIGURE 16. STATUS TRANSITION FLOW OF CAMT.056 FOR CANCEL

Stop/Resume non-instant payment - camt.007

While POSTPONED, the Originator Participant can send a STOP message to RTP in order to exclude a particular transaction from the settlement. A STOPPED transaction can either be resumed (to POSTPONED) and considered for the next settlement or CANCELLED. PAPSS RTP uses the same message (camt.007) for both operation types and the Originator must fill in the related information which uniquely identifies the transction and the desired new status (STOPPED or POSTPONED).

A resumed payment can be stopped again by using the same camt.007 message.

The RTP system's validation process for the received camt.007 payment confirmation/rejection messages follow the steps:

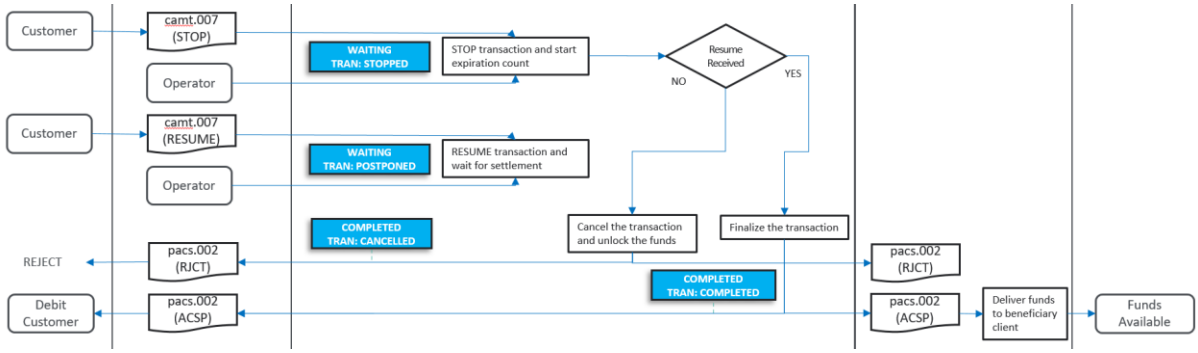
1. Parsing and validation of XML message according to the XSD schema – if this step is not succesfully completed, RTP replies a pacs.002 message (ReplyMessage).
2. Message business fields' validation:

a. **Assgnr -** PAPSS ID of sender Participant. It must be the same Participant that sent the original pacs.008 and what now to change the satatus of it.

b. **OrgnlTxId –** Original Credit Transfer message reference

c. **OrgnlMsgId -** Original message type.

d. **InstrForDbtrAgt –** Desired Transaction Status.



3.3.13. Invoice Payments

The Invoice Payments are IPS payments that are used to pay an invoice document. In this case the Receiver Customer needs to receive a fixed amount in its currency. In order to perform this, PAPSS is computing the Settlement amount (in USD) and the sender amount based on the receiver amount.

In order to specify to PAPSS that a payment instruction is an Invoice Payment the sender institution must specify a specific Category Purpose and a specific Purpose Code in the payment initiation message pacs.008.

The IPS system's extra validation process for the received pacs.008 invoice payment messages follow the steps:

1. All previous validation for pacs.008 payments.
2. Extra message business fields' validation:
    a. **CtgyPurp/Cd** - The code must be SUPP. Parent tag is **PmtTpInf**
    b. **Purp/Cd** - The code must be RCPT. Parent tag is **CdtTrfTxInf**

PAPSS offers the plausibility for the Participant to choose if it prefers to be informed by the effective accounting that was performed by PAPSS as a result of sending and receiving Direct Payments or Invoice Payments. The option is called **Amount Notification** and can be switch On/Off from the Participant screen. If the Participant chooses to be notified by the final accounting performed by PAPSS 2 new XML tags will be added to the final notification message pacs.002.

1. **IntrBkSttlmAmt** - Debit amount for the sender Participant under the tag **OrgnlTxRef**
2. **Amt/InstdAmt** - Credit amount for the receiver Participant under the tag **OrgnlTxRef**

3.3.14. Time and Date Information

The XML messages used by the RTP system include fields that contain information about date and time. For a correct processing, please take into consideration the following details:

- Field **CreDt** from **AppHdr** must contain the date and hour in UTC format, indicated by the presence of 'Z' as suffix. The format of this field is essential because it is validated according to the XML schema, but the content (actual value of the field) is not validated by the RTP.
- Fields **CredDtTm** and **AccptncDtTm** from the messages must contain the corect time zone information, in the allowed format of type:

  xs:dateTime: YYYY-MM-DDTHH:mm:ss[{+/-}HH:mm].

Although the time zone information from the two fields mentioned above is optional for XML standards, the RTP system uses these, in order to eliminate ambiguities that might occur due to the summer/winter time change. Thus, RTP uses this information if the XML messages contain it. If not, RTP uses the system's existing time zone information at the moment of validation, even though it might be different from the time zone at the moment of payment generation by the Originator.

Please see an example below:

MOMENT	XML TIMESTAMP VALUE WITHOUT TIME ZONE INFORMATION	XML TIMESTAMP VALUE WITH TIME ZONE INFORMATION
On 2018-03-25 at 02:30:00, the Originator generates and sends an XML message	XML information: 2018-03-25T02:30:00	XML information: 2018-03-25T02:30:00+02:00
At 02:30:01, RTP receives the message and interpretes the XML values this way:	RTP Interpretation: Date: 2018-03-25 Local hour: 02:30:00 UTC hour: 00:30:00 The system's existing time zone at the moment of validation is used.	RTP Interpretation: Date: 2018-03-25 Local hour: 02:30:00 UTC hour: 00:30:00 The time zone indicated in the XML value is used.

In this case, the difference between the system's UTC time and the message's UTC time is of 1 second, regardless of the presence of time zone in the XML message.

In the case of messages processed at the moment of summer time change (**03:00:00 becomes 04:00:00**):

MOMENT	XML TIMESTAMP VALUE WITHOUT TIME ZONE INFORMATION	XML TIMESTAMP VALUE WITH TIME ZONE INFORMATION

Originator generates and sends an XML message at 02:59:55, local time or 00:59:55 UTC time	XML information**:** 2018-03-25T02:59:55	XML information**:** 2018-03-25T02:59:55**+02:00**
03:00:00 becomes 00:04:00 The sent message (see above cell) is received by RTP at 04:00:01, local time or 01:00:01, UTC time (after 6 seconds) and it interpretes the XML value this way:	**RTP Interpretation:** Date and UTC hour: 2018-03-24 23:59:55 (previous day) Date and local hour: 2018-03-25 02:59:55 The system's existing time zone at the moment of validation is used to obtain the UTC value, to which the new system's time zone is added.	**RTP Interpretation:** Date and UTC hour: 2018-03-25 00:59:55 Date and local hour: 2018-03-25 03:59:55 The time zone information indicated in the XML file is used to obtain the UTC time, to which the local system's time zone is added.
	The time difference between the file time value and the validation moment is 1 hour and 6 seconds.	The time difference between the file time value and validation moment is 6 seconds.

4. Security

The security mecanisms used by the RTP system guarantees confidentiality, integrity and authenticity of the data transferred between the systems. Technically, the RTP has two security levels:

1. SSL[4] technology for the encryption of the communication channel between the Customer application of Participants and the central RTP system.
2. Digital signature of the PAPSS CT Inst payment messages schema.

Each level of security requires a different digital certificate. The digital certificate must be uploaded into the central RTP system so that the Participants' STP application can use it. The private key of each digital certificate must be kept only at the Participant, being used by applications for securing the communication.

4.1. Communication Channel Encryption

The encryption of the communication channel is made using the SSL (TLS 1.2) protocol. This ensures the confidentiality, integrity and authenticity of the systems. The mutual authentication of the systems is carried out as described below.

The **authentication of the RTP system by the Participant STP application** is made by verifying some elements of the RTP's public certificate:

1. Field Common Name (CN) must match the RTP domain name (from the login URL).
2. RTP's Certificate must be issued by a trusted Certification Authority (configured in truststore).
3. Certificate must not be expired.

The **authentication of the Participant STP application to the RTP system** is made through:

1. Verifying the certificate's presence in the certificate list uploaded in RTP for communication authentification purpose.
2. Certificate validation in terms of expiration and revocation.

This second authentication allows RTP to precisely identify the Participant that initiaties the connection.

Within the use of the RTP system, both systems require their own digital certificate:

1. TLS server certificate issued for RTP.

[4] In fact, the TLS 1.2 standard is employed, a newer version of the SSL protocol. SSL (3.0) was considered vulnerable and deprecated since 2015.

2. Client TLS server certificate for Participant's STP application.

4.2. Digital Signature

All SCT Inst schema payment messages are digitally signed, by both the bank and the central RTP system. The XML messages contain a **Timestamp** field that is validated by the central system. Thus, the digital signature must be executed in real time, before sending the message.

The standard for XML Signature type digital signature is described at the URL https://www.w3.org/TR/xmldsig-core1/ and it is configured with the following parameters:

- Content enconding: http://www.w3.org/TR/2001/REC-xml-c14n-20010315
- ENVELOPED Transformation: http://www.w3.org/2000/09/xmldsig#enveloped-signature
- Signature enconding: http://www.w3.org/2006/12/xml-c14n11
- Digest: http://www.w3.org/2001/04/xmlenc#sha256
- Signature: http://www.w3.org/2001/04/xmldsig-more#ecdsa-sha256

The Participant's STP application uses a private key to apply the digital signature. The digital certificate that contains the public key associated to the private key must be issued by a certificate authority approved by the PAPSS and uploaded into the central RTP system so that it can be used to validate signatures.

When receiving messages, the Participant's STP application validates the messages' digital signature applied by the central RTP system. Upon validation, the application will have access to the RTP digital certificate either in the form of a keystore or imported into the operating system.

The STP Java Client Library offers two optional features that implement the digital signature application and validation procedures. An example of digital signature in XML format is shown below:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<env:Message xmlns:env="urn:montran:message.01">
 <env:AppHdr xmlns="urn:iso:std:iso:20022:tech:xsd:head.001.001.01">
.......
  <Sgntr>
          <Signature xmlns="http://www.w3.org/2000/09/xmldsig#">
               <SignedInfo>
                    <CanonicalizationMethod
Algorithm="http://www.w3.org/TR/2001/REC-xml-c14n-20010315"/>
                    <SignatureMethod
Algorithm="http://www.w3.org/2001/04/xmldsig-more#rsa-sha256"/>
                    <Reference URI="">
                         <Transforms>
                              <Transform
Algorithm="http://www.w3.org/2000/09/xmldsig#enveloped-signature"/>
                              <Transform
Algorithm="http://www.w3.org/2006/12/xml-c14n11"/>
```

```
                              </Transforms>
                              <DigestMethod
Algorithm="http://www.w3.org/2001/04/xmlenc#sha256"/>
      <DigestValue>eOx0P4SFJGCxoIxS/3idUySW4i78hNe6ZMX+0J6vb58=</Dig
estValue>
                         </Reference>
                    </SignedInfo>
      <SignatureValue>Lx8ZoNAi5WNRuIVquEO5k7eBMTEu75Q1cjjjidtpLCEm0X
LtPPm0IvcSNYb7ipUPocQt3cWXNKoxdyp8QDxtjaw/CDohlV8d19ce2uJVwXkcrFkAzi
WZp9tR9v9igPDdJv8ymxrwInts0w46ct4rO5tAS3yjRVy1CJQGieLF++ThMRPWMr956C
rV3F8+49rvzRS/9069UEfYH2agyN1IN7x4Z/TCf7vBsuxgicbzVb0I6pxKYLz/XTqcG4
PnxgD25Qt9C3sNpTwEHKA1RM3LkIjE6o7SKPw14P9quebSRETWXKTI
RqIzDc7HCU1WDpMnScemkjziXxACRVB7b64EpQ==</SignatureValue>
           <KeyInfo>
                <X509Data>
                <X509SubjectName>EMAILADDRESS=xyz@email.com, CN=DDDD
C1, OU=RTP Development, O=Montran, ST=Cluj, C=RO</X509SubjectName>
                         <X509IssuerSerial>
                              <X509IssuerName>EMAILADDRESS=
xyz@email.com, CN=RTP CA, OU=RTP Development, O=Montran, L=Cluj-
Napoca, ST=Cluj, C=RO</X509IssuerName>
                              <X509SerialNumber>5</X509SerialNumber>
                         </X509IssuerSerial>
                </X509Data>
           </KeyInfo>
      </Signature>
</Sgntr>
</env:AppHdr>
 <env:FIToFICstmrCdtTrf
xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.008.001.07">
  <GrpHdr>
   <MsgId>MREF6b6faef8ed434</MsgId>
....
</env:Message>
```

5. Straight-Through-Processing Application and RTP Client Library

The Participants' RTP consists of the following elements:

1. The internal RTP application – payment messages generation/processing solution that interfaces with the STP application.
2. The STP application – module that implements the message transmission/reception functions by implementing the HTTP protocol (described in chapter 6) or through the RTP client library (developed in Java).

For easier access to the STP interface, the RTP system provides a client library for the Java programming language. This library implements the HTTP communication protocol provided by the interface, thus replacing the task of implementing this protocol by the applications from Participants with the simple integration of the library and the use of some methods.

The library is composed of a set of Java classes and interfaces, the most important of which is the interface called **EngineConnection**. This describes the details of the functions used for sending and receiving messages. Many of the features listed below use the **RTPMessage** class to enclose the actual message content along with some additional properties. The document references directly the RTP client library as a means of accessing the STP interface. For participants who want to implement their own HTTP protocol, using the RTP client library is optional.

The Customer STP application initiates permanent[5] requests to the STP interface and awaits a response from it. The Customer STP application must wait the RTP response longer than the timeout parameter set by the payment schema - `Timeout Deadline`.[6] This response period can be configured by Participants through the RTP client library.

Resending a message by the Customer STP application without receiving a reply from the STP interface must be executed explictly by the solution that implements the RTP client library, without being included in the transimission protocol.

In order for the RTP system to receive messages, the Customer STP application developed through the implementation of the RTP client library must use the receive message function **GetMessage**. The receive message function is implemented according to the HTTP Long-Polling method, through which the Customer application initiates a receive request from the server system. If there is an available message in the central RTP application, this will be immediately delivered and the STP application initiates a new receive request for the next message in the shortest time period. If there is no available message in the STP interface, the central RTP system delays the zero value reply to the requesting Participant for maximum 5 seconds.

[5] This is a necessity for detecting the online status of the receiver Participant.
[6] For now, the parameter is 20 seconds. This value can be adjusted depending on the timeout parameter established by the SCT Inst schema.

5.1. RTP Client Library Configuration

The configuration of the client library can be done in two ways:

1. Using a configuration file named **client-config.txt**. this is uploaded by the RTP client library when a library class if first used.
2. Dynamically, through the field change of the **ClientConfig** class of the library.

The configurable parameters are presented in the table below:

NAME	VALUE EXAMPLE	DESCRIPTION
BASE_URL	BASE_URL=https://pm.prd.papssnet.papss.com	URL address of RTP's STP interface.
MY_DNSxxx	MY_DNSpapss.org=10.1.1.1,10.1.1.2	Local translation of the IP address (in the library).
RTP_BIC	RTP_BIC=XA00001	BIC of the central RTP system.
HTTP_CONNECTION_TIMEOUT	HTTP_CONNECTION_TIMEOUT=2	Maximum allowed time (seconds) for establishing a connection to the central RTP system.
HTTP_SEND_MESSAGE_TIMEOUT	HTTP_SEND_MESSAGE_TIMEOUT=25	Maximum allowed time (seconds) for sending a message. It must be larger than the maximum allowed time according to the payment schema.
HTTP_RECEIVE_MESSAGE_TIMEOUT	HTTP_RECEIVE_MESSAGE_TIMEOUT=10	Maximum allowed time (seconds) for receiving a message from the central system.

At the first reference of the **ClientConfig** class, the class reads the configured values from the configuration file. Later, these values can be modified directly within the class. The values become concrete for connections (**EngineConnenction** instances) obtained later from **ConnectionFactory.**

The configuration of keystore files and of certificates used by the Customer application is made through setting some properties in the configuration file **security.properties**. Similar to **client-config.properties**, this must be present in the application's classpath. Its reload is made through the Java class loading mechanism. Properties to be configured in this file are:

1. **keyPass** – password for all configured keystore files.

2. **SSLkeyFile** – path to the keystore that holds the own SSL type certificate (client) for the authentication to the central RTP system. The client library will use the private key certificate from the keystore certificate suggested by the sslKeyAlias parameter when a connection was created.
3. **SSLtruststore** – path to the keystore that holds public certificates of servers and of server certificate issuer entities to which the RTP system connects. It is used by the Customer application to authenticate the central RTP system.
4. **DSkeyFile** – path to the keystore that holds the own Digital Signature certificate used for the signature of messages sent to the RTP. The certificate used by the application is indicated by the keyAlias parameter.
5. **DSTruststore** – path to the keystore that holds the servers' public certificate or certificates of server certificate issuer entitites to which the RTP application connects. It is used by the Customer application for the verification of the digital signature of messages sent by the central RTP system.
6. **keyAlias** – private key alias used for the digital signature.

5.2. RTP Message Class

The RTP Message Class contains the following fields:

- **Type**: String – it represents the type of reply message that the central RTP sends. Its possible values are: camt.029, camt.056, pacs.008, pacs.004, pacs.002, pacs.028, recon.001.
- **Sequence**: long – sequence of the message received by Participant from the central RTP system. This sequence is assigned by the system when messages are generated.
- **Content**: String – XML content of the received/sent message from/to the central RTP system.
- **ErrorCode**: integer – the internal error code reported by the system for the sent message. Please see details in section 7.2.
- **ReportedStatus**: String – ACCP or RJCT code for a pacs.002 type message received from the central system.
- **ProcessingDuration**: long – total processing time of a message send to the central system, expressed in nanoseconds.

5.3. EngineConnection Interface

5.3.1. SendNewMessage

Description: The method is used for sending a new message to the central RTP system. The supported message types are the ones belonging to the SCT Inst schema, except message type pacs.002, which is sent using a specific method.

Method signature:

```
public RTPMessage sendNewMessage(RTPMessage message) throws IOException;
```

Input parameters: pacs.002 message to be sent, enclosed into an object of type RTPMessage.

Configuration parameters:

- HTTP_SEND_MESSAGE_TIMEOUT – the maximum allowed time (seconds) for receiving a reply from the central RTP system. If this time is exceeded, an exception of type **org.apache.http.NoHttpResponseException** is raised.

Result: pacs.002 reply message, received from the central RTP system, if sending was succesfully executed.

Exceptions: In case of communication errors with the central RTP system, the client librare will raise an exception type **IOException**.

5.3.2. ReplyToPayment

Description: The method is used by receiver Participant to reply positively or negatively to a payment message received from the central system.

Method signature:

```
public RTPMessage replyToPayment(RTPMessage responseMessage) throws IOException;
```

Input parameters: pacs.002 message to be sent, enclosed into an object of type RTPMessage.

Configuration parameters:

- HTTP_SEND_MESSAGE_TIMEOUT – the maximum allowed time (seconds) for receiving a reply from the central RTP system. If this time is exceeded, an exception of type **org.apache.http.NoHttpResponseException** is raised.

Result: pacs.002 reply message, received from the central RTP system, if sending was succesfully executed.

Exceptions: In case of communication errors with the central RTP system, the client librare will raise an exception type **IOException**.

5.3.3. GetMessage

Description: The method is used by a Participant for receiving a message from the central RTP system. If there is no available message for the Participant, the method replies the value **null**. In both cases, if calling this function returns a message or not, the **Participant must initiate a new call**

immediately (within maxim 5 seconds[7]), because this function is used by the central RTP system to check the ONLINE status of Participants (check availability of pacs.008 messages).

Method signature:

```
public RTPMessage getMessage() throws IOException;
```

Input parameters: none.

Configuration parameters:

- HTTP_RECEIVE_MESSAGE_TIMEOUT – the maximum allowed time (seconds) for receiving a reply from the central RTP system. If this time is exceeded, an exception of type **org.apache.http.NoHttpResponseException** is raised.

Result: message received from the central RTP system or **null** if there is no available message.

Exceptions: In case of communication errors with the central RTP system, the client librare will raise an exception type **IOException**.

5.3.4. ConfirmMessage

Description: The method is used by a Participant to confirm receiving a message. A message received from the central RTP system must be confirmed explicitly by the Participant by using this method. Contrary, or if the confirmation is executed after a period of time larger then RTP's Output Redelivery Time, the system will automatically resend the unconfirmed messages by placing them in the message queue processed by the function GetMessage.

Method signature:

```
public void confirmMessage(long sequence) throws IOException;
```

Input parameters: sequence of received message. This is to be found in the object of RTPMessage received as the result of **GetMessage** function's execution.

Configuration parameters:

- HTTP_SEND_MESSAGE_TIMEOUT – the maximum allowed time (seconds) for receiving a reply from the central RTP system. If this time is exceeded, an exception of type **org.apache.http.NoHttpResponseException** is raised.

Result: none.

Exceptions: In case of communication errors with the central RTP system, the client librare will raise an exception type **IOException**.

[7] This parameter is defined by the IPS central system and controlled by the operator exclusively. It should rarely be changed; a yearly review is typical. The value is communicated to the participants to use in the STP application configuration.

5.3.5. GetPositions

Description: The method is used by a Participant to get the position of: the technical account, the guarantee ceiling and the available amount limit for their own account.

Method signature:

```
public String getPositions() throws IOException;
```

Input parameters: missing.

Result: A XML message that contains the current values of technical accounts' balances at the time of the call. The XML message format is described at section 5.1.2.

Exceptions: In case of communication errors with the central RTP system, the client librare will raise an exception type **IOException.**

5.3.6. GetIndirectPositions

Description: The method is used by a settlement agent Participant to obtain the guarantee ceilings for associated non-settlement Participants.

Method signature:

```
public String getIndirectPositions() throws IOException;
```

Input parameters: missing.

Result: An XML message that contains only the current values of guarantee ceilings for all associated not direct Participants at the time of the call. The XML message format is described in Annex 1.

Exceptions: In case of communication errors with the central RTP system, the client librare will raise an exception type **IOException.**

5.3.7. GetParticipantStatus

Description: The method is used by any Participant to obtain the status and the connection status of another Participant and also the payment schema information for the respective Particiapnt

Method signature:

```
String getParticipantStatus(ParticipantIdType idType, String id)
throws IOException;
```

Input parameters:

1. idType – the type of the participant identifier. The possible values for it are: PAPSS_ID, BIC
2. id – The actual Participant identifier

Result: An XML message that contains statuses information for the required Participant. The XML message format is described in Annex 1.

5.3.8. GetAllParticipantStatus

Description: The method is used by any Participant to obtain the status and the connection status of all Participants and also the payment schema information for each Particiapnt

Method signature:

```
String getAllParticipantsStatus(Boolean online, ParticipantType type)
throws IOException;
```

Input parameters:

1. online – if it is not null it will filter the list of participants depending of the connectivity status
2. type – if it is not null it will filter the list of the participants based on their type. The list of participant types is: ADMINISTRATOR, CENTRL_BANK, BANK, MOBILE_NETWORK_OPERATOR, VIRTUAL_ACCOUNT_OPERATOR, CARD_OPERATOR.

Result: An XML message that contains statuses and payment schema information for all filterred Participants. The XML format is similar with GetParticipantStatus XML format with multiple <participant> entries.

5.3.9. GetEscrowTransactions

Description: The method is used to obtain a list of escrow transaction which ware in RESERVER status and which were originated by the caller participant

Method signature:

```
public String getAllParticipantsStatus(String deptorAccount) throws
IOException;
```

Result: An XML message that contains a list of all required transactions. The XML message format is described in Annex 1.

5.3.10. GetFXRate

Description: The method is used to obtain a specific FX Rate that is currently applied between sender Countrt/Currency and receiver Country/Currency and for a specific local instrument.

Method signature:

```
String getFXRate(String senderCurrency, String senderCountryCode,
String receiverCurrency, String receiverCountryCode, String
receiverBank, String localInstrument, String amount, boolean
invoicePayment)throws IOException;
```

Result: An XML message that contains the the necessary rates used to determine the final rate between selected currencies and the computed final rate. The XMl message format is described in Annex 1.

The same result can be optained by a HTTP API call:

```
GET
<PAPSS_URL>/FXRate?SenderCountry=NG&ReceiverCountry=GS&SenderCurrency=NGN&R
eceiverCurrency=GHS&ReceiverBank=<BIC>&LclInstrm=ET&amount=<AMT>&isInvoice=
false
```

5.4. ConnectionFactory Class

The **ConnectionFactory** class offers a set of static methods that allow getting concrete instances that implement the **EngineConnection** interface.

5.4.1. GetEngineConnection Method

Description: The method is used for obtaining an object that implements the EngineConnect interface and that can be used later to access the central RTP system's functions.

Method signature:

```
public static EngineConnection getEngineConnection(String
channelName, String sslKeyAlias);
```

Input parameters:

1. Communication channel's identifier that must be the Participant's BIC.
2. Name (alias) of the SSL private key used by the Participant to authenticate the central RTP system. The public certificate associated to this key must be uploaded into the central RTP system.

Configuration parameters:

- HTTP_CONNECTION_TIMEOUT – the maximum allowed time (seconds) for establishing a connection to the central RTP system. If the client library cannot establish the TCP connection for any call of a function of the central RTP system interface, then an exception of type **java.net.ConnectException** is raised.

Result: instance that implements the EngineConnection interface.

Exceptions: In case of library configuration or integration error, the method will raise an exception of type **RuntimeException**.

5.5. Digital Signature Application and Verification Functions

The RTP library also provides Participants with a set of functions for appliying and verifying the digital signature of messages exchanged with the central RTP system. These functions are offered by the **XMLSignatureUtils** class and are described in the next sections.

5.5.1. GenerateSignature Method

Description: The method is used for applying the digital signature to an XML message before it is sent to the central RTP system. The alias of the private key used for the signature is configurated in **security.properties**.

Method signature:

```
public String generateSignature(String xmlContent) throws SignatureException;
```

Input parameters:

- XML message in String format. The message structure must be according to the montran.message.01 schema, which contains a **head:BusinessApplicationHeader** structure defined by ISO 20022, where the digital signature is to be inserted.

Result: digitally signed XML message, String format.

Exceptions: In case of library configuration or signature entry error, the method will raise an exception of type **SignatureException.**

5.5.2. ValidateSignature Method

Description: The method is used for applying the digital signature to an XML message, represented as a DOM document, before it is sent to the central RTP system. The alias of the private key used for the signature is configurated in **security.properties**.

Method signature:

```
public String generateSignature(Document xmlContent) throws SignatureException;
```

Input parameters:

- XML message in org.w3c.dom.Document format. The message structure must be according to the montran.message.01 schema, which contains a **head:BusinessApplicationHeader** structure defined by ISO 20022, where the digital signature is to be inserted.

Result: digitally signed XML message, String format.

Exceptions: In case of library configuration or signature entry error, the method will raise an exception of type **SignatureException.**

5.6. Use Cases

Please find below some basic examples for the use of the RTP client library for sending and receiving messages. The purpose of these examples is to present the initial use and it does not entail a complete and sufficient solution for connecting to the central RTP system. The examples below do not handle all operation exceptions or communication error with the central system that could occur.

5.6.1. Example of Send Message

```
String participantBIC=”ECOCNGLA”;
EngineConnection conn =
ConnectionFactory.getEngineConnection(participantBIC);

String xmlContent = “<?xml …”;      // IPS Message
String signedMessage = XMLSignatureUtils.generateSignature(xmlContent,
“signer”);
RTPMessage message = new RTPMessage(signedMessage);
// send message
RTPMessage replyFromIPS = conn.sendNewMessage(message);
String replyContent = replyFromIPS.getContent();
// validate DS
try {
      XMLSignatureUtils.validateSignature(replyContent);
} catch (SignatureValidationException sve) {
      // handle Exception, DS validation failed
}
// handle reply either based on content or use replyFromIPS.getErrorCode()
```

5.6.2. Example of Receive Message

```
String participantBIC=”ECOCNGLA”;
EngineConnection conn =
ConnectionFactory.getEngineConnection(participantBIC);

while (alive) {
      RTPMessage receivedMessage = conn.getMessage();
      String replyContent = receivedMessage.getContent();

      // validate DS
      try {
            XMLSignatureUtils.validateSignature(replyContent);
      } catch (SignatureValidationException sve) {
            // handle Exception, DS validation failed
      }
```

```
        // handle receivedMessage, persist
        // then either reply by sending a pacs.002 for a pacs.008
        // or use conn.confirmMessage(receivedMessage.getSequence());
}
```

6. HTTP Communication Protocol Description

Invoking the operations offered by the RTP system is done by sending requests (GET, POST) from specific secure URLs. The details of these URLs and the methods are described below:

OPERATION	URL	HTTP METHOD
Send message	<BASE_URL>/Message	POST
Receive message	<BASE_URL>/Message	GET
Confirm received message	<BASE_URL>/MessageAck	POST
Position query	<BASE_URL>/Positions	GET
Guarantee ceiling query for associated Indirect Participants	<BASE_URL>/IndirectPositions	GET
Guarantee ceiling configuration for associated Indirect Participants	<BASE_URL>/ IndirectPositions	POST

BASE_URL is the main RTP URL and its form is: <PROTOCOL>://<HOSTNAME>[<PORT>]/<APP> where:

- PROTOCOL is HTTPS.
- HOSTNAME is the name of the domain where the RTP system is installed.
- PORT is the TCP port, including 443. This field may be missing if there is a default value.
- APP is the path to the application.

A complete BASE_URL example is: https://pm.prd.papssnet.papss.com.

Apart from the above operations, RTP also offers a set of API calls. The details URLs and the list of attributes are described below:

OPERATION	URL	HTTP METHOD	HTTP ATTRIBUTES
API call for optaining participant status	<BASE_URL>/api/participants/BIC/{BIC}	GET	**BIC** – The BIC code of the participant
API call for optaining participant status	<BASE_URL>/api/participants/PAPSSID/{PAPSSID}	GET	**PAPSSID** – The PAPSS ID of the participant

API call for optaining all participants statuses	<BASE_URL>/api/participants	GET	**online** – (optional) If the Participant is conencted or not (true|false) **type** – (optional) The type of the participants (CENTRAL_BANK, BANK, MOBILE_NETWORK_OPERATOR, VIRTUAL_ACCOUNT_OPERATOR, CARD_OPERATOR)
API call for optaining escrow transactions	<BASE_URL>/api/escrow	GET	**dbtrAccount** – The debtor account
API call to optaining FX rate information	<BASE_URL>/FXRate	GET	**SenderCountry** – The sender country code **ReceiverCountry** – The receiver country code **SernderCurrency** – The sender currency code **ReceiverCurrency** – The receiver curency code **ReceiverBank** – The PAPSS-ID of the receiver institution **LclInstrm** – The Local Intrument code

HTTP Atributes marked as *optional* may not be present in the API URL.

Example of getting the list of all Bank Participants with their status:

<BASE_URL>/participants?type=BANK

Example of getting the list of all online Bank Participants with theier status:

<BASE_URL>/participants?type=BANK&online=true

Example of getting information about a specific Participant (Central Bank of Nigeria):

<BASE_URL>/participants/PAPSSID/NG00001

6.1. Common Elements of Messages Exchange with RTP

6.1.1. HTTP Header Attributes of Messages sent to RTP

All requests sent by the Customer application to the central RTP system must contain the following attributes in the HTTP header:

- **X-PAPSSRTP-Channel** – PAPSS ID of sender Participant.
- **X-PAPSSRTP-Version** – protocol version, this is 1 for now.

6.1.2. HTTP Answer Codes

- **200 (HTTP OK)** – if the request was successfully processed. This does not imply that a message was accepted or that a payment was completed, it only implies that no technical errors occurred during the processing.
- **400 (HTTP Bad Request)** – error occurred for sending an incorrect receive confirmation message, if the confirmation message is a pacs.008 one (see section 2.2 for explanation).
- **401 (HTTP Unauthorized)** – error occurred during Participant authentification (BIC present in X-PAPSSRTP-Channel cannot identify an ACTIVE Participant or the Participant's TLS certificate is not accepted by RTP).
- **500 (HTTP Internal Server Eror)** – in case of a generic error during the processing of a message by RTP.
- **503 (HTTP Service Unavailable)** – in case the service is not available (node hot-standby).

6.2. Send Message to RTP

This method is used by both operations implemented by the client library:

1. The generic send message.
2. The confirmation of received pacs.008 messages.

Service URL: <BASE_URL>/Message

Method: POST

Parameters: nothing.

Sent message HTTP Atribute Header:

- **X-PAPSSRTP-Channel** – PAPSS ID of sender Participant.
- **X- PAPSS-RTP-Version** – **Protocol Version**.

Content: XML message in the format accepted by RTP.

Response Code:

- 200 (HTTP OK) – if RTP the received and processed the message.

Replied Content:

- If RTP successfully completed the message processing, then the response code will be 200 and the RTP system will send a reply pacs.002 message, according to the SCT Inst schema. The pacs.002 message indicates that the message was either accepted or rejected by the system.
- If the response code is different then 200, then the system will send not send a pacs.002 reply message.

HTTP Atribute Header for reply:

- **X-PAPSSRTP-ReqSts** – Status of sent message:
  - ACCP – sent message was accepted and successfully processed.
  - RJCT/<ErrorCode> – sent message was rejected because of validation reasons or it was not successfully completed, e.g. payment was rejected by receiver or timeout. The error code is according to section 5.2.
- **X-PAPSSRTP-MessageSeq** – sequence of reply message.
- **X-PAPSSRTP-MessageType** – Type of reply message. Possible value is pacs.002.
- **X-PAPSSRTP-Version** – Protocol version.

6.3. Receive Message from RTP

Service URL: <BASE_URL>/Message

Method: GET

Parameters: nothing.

HTTP Atribute Header:

- **X-PAPSSRTP-Channel** – PAPSS ID of sender Participant.
- **X-PAPSSRTP-Version** – **Protocol Version**.

Content: nothing.

Response Code:

- 200 (HTTP OK) – if RTP sucessfully processed the message.

Replied Content:

- XML message if the request was successfully processed (response code HTTP 200) and there is an available receive message for Participant.

- Nothing, if there is no available receive message for the Participant that makes the call. In this case, the HTTP reply message will entail **X-PAPSSRTP-ReqSts** in the attribute header with value EMPTY.

HTTP Atribute Header for reply:

- **X-PAPSSRTP-ReqSts** – Value EMPTY, if there is no available message.
- **X-PAPSSRTP-PossibleDuplicate** – if this attribute is present, its value is true and it indicates that the message was delivered to the Participant at least once. This can happen if a message received earlier was not confirmed by RTP.
- **X-PAPSSRTP-MessageSeq** – sequence of received message. This is generated by RTP and it is used to confirm that the message was received.
- **X-PAPSSRTP-MessageType** – Type of reply message. Possible values are: pacs.008, pacs.004, pacs.028, camt.056, camt.029, recon.001, pacs.002.
- **X-PAPSSRTP-Version** – Protocol version.
- **X-PAPSSRTP-RemainingOutputs** – The number of unconfirmed messages for channel.

6.4. Received Message Confirmation

Service URL: <BASE_URL>/MessageAck

Method: POST

Parameters: nothing.

HTTP Atribute Header:

- **X-PAPSSRTP-Channel** – PAPSS ID of sender Participant.
- **X-PAPSSRTP-MessageSeq** – sequence of message that needs to be confirmed.
- **X-PAPSSRTP-Version** – **Protocol Version**.

Content: nothing.

Response Code:

- 200 (HTTP OK) – if RTP sucessfully processed the request.
- Other codes, according to 6.1.2.

Replied Content: nothing.

HTTP Atribute Header for reply:

- **X-PAPSSRTP-Version** – Protocol version.

Content: “Stored” message in case of succes or “NotFound”, if the message referred to in the sequence sent is not found. In both cases, the HTTP reply is 200.

6.5. Own Positions Queries

Service URL: <BASE_URL>/Positions

Method: GET

Parameters: nothing.

HTTP Atribute Header:

- **X-PAPSSRTP-Channel** – BIC of sender Participant.
- **X-PAPSSRTP-Version** – **Protocol Version**.

Content: nothing.

Response Code:

- 200 (HTTP OK) – if RTP if RTP sucessfully processed the request.
- Other codes, according to 6.1.2.

Reply: XML message according to 7.1.2.

HTTP Atribute Header for received reply:

- **X-PAPSSRTP-Version** – Protocol version.

6.6. Guarantee Ceiling Quries for Associated Indirect Participants

Service URL: <BASE_URL>/IndirectPositions

Method: GET

Parameters: nothing.

HTTP Atribute Header:

- **X-PAPSSRTP-Channel** – PAPSS ID of sender Participant.
- **X-PAPSSRTP-Version** – **Protocol Version**.

Content: nothing.

Response Code:

- 200 (HTTP OK) – if RTP if RTP sucessfully processed the request.
- Other codes, according to 6.1.2.

Reply: XML message according to 7.1.2.

HTTP Atribute Header for received reply:

- **X-PAPSSRTP-Version – Protocol version.**

7. Anexxes

7.1. Annex 1 – XML Format Description

7.1.1. Message Header (App Hdr) – head.001.001.01.xsd

The format of this message is described in ISO20022, but the RTP solution uses a specific set of fields that is described below:

ELEMENT	TYPE	DESCRIPTION
Fr > FIId > FinInstnId > ClrSysMmbId > MmbId	PAPSS ID	ID of the sender participant
To > FIId > FinInstnId > ClrSysMmbId > MmbId	PAPSS ID	ID of the receiver participant
BizMsgIdr	Max35Text	Message identifier
MsgDefIdr	Max35Text	Message type
CreDt	ISONormalisedDateTime	Moment of message creation
Sgntr		Element that entails the digital signature.

Example of message with header that contains pacs.008 bussines message:

```
<?xml version="1.0" encoding="UTF-8"?>
<hdr:Message xmlns:hdr="urn:montran:message.01">
      <hdr:AppHdr xmlns="urn:iso:std:iso:20022:tech:xsd:head.001.001.01">
            <Fr>
                  <FIId>
                        <FinInstnId>
                              < ClrSysMmbId>
                                    <ClrSysId>
                                          <Prtry>PAPSS</Prtry>
                                    </ClrSysId>
                                    <MmbId>NG0002</MmbId>
                              </ ClrSysMmbId>
                        </FinInstnId>
                  </FIId>
            </Fr>
            <To>
                  <FIId>
                        <FinInstnId>
                        <FinInstnId>
                              < ClrSysMmbId>
                                    <ClrSysId>
```

```
                                        <Prtry>PAPSS</Prtry>
                                    </ClrSysId>
                                    <MmbId>XA0001</MmbId>
                                </ ClrSysMmbId>
                            </FinInstnId>
                            </FinInstnId>
                        </FIId>
                </To>
                <BizMsgIdr>test034</BizMsgIdr>
                <MsgDefIdr>pacs.008.001.07</MsgDefIdr>
                <BizSvc>RTP</BizSvc>
                <CreDt>2018-03-26T10:12:13Z</CreDt>
                <Sgntr>
                      .....
                </Sgntr>
        </hdr:AppHdr>
        <hdr:FIToFICstmrCdtTrf
xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.008.001.07">
                <GrpHdr>
                .....
                </GrpHdr>
                <CdtTrfTxInf>
                .....
                </CdtTrfTxInf>
        </hdr:FIToFICstmrCdtTrf>
</hdr:Message>
```

7.1.2. Credit Transfer – pacs.008.001.07

The format uses the standard ISO schemas in the following structure. A restriction of a single credit is enforced

INDEX		MESSAGE ITEM	XML TAG	MULTIPLICITY
1	Message Root		<FIToFICstmrCdtTrf>	[1..1]
2		Group Header	<GrpHdr>	[1..1]
3		Credit Transfer Transaction Information	<CdtTrfTxInf>	[1..1]

Group Header

INDEX	MESSAGE ITEM				XML TAG	MULTIPLICITY	TYPE
1.1.	Group Header				<GrpHdr>	[1..1]	
1.2.		Message Identification			<MsgId>	[1..1]	Max35Text
1.3.		Creation Date Time			<CreDtTm>	[1..1]	ISODateTime
1.4.		Number Of Transactions			<NbOfTxs>	[1..1]	1
1.5.		Total Interbank Settlement Amount			<TtlIntrBkSttlmAmt>	[1..1]	ActiveCurrencyAndAmount
1.6.		Interbank Settlement Date			<IntrBkSttlmDt>	[1..1]	ISODate
1.7.		Settlement Information			<SttlmInf>	[1..1]	
1.8.			Settlement Method		<SttlmMtd>	[1..1]	Fixed value:”CLRG”
1.9.			Clearing System Reference		<ClrSys>	[1..1]	
1.10.				Proprietary	<Prtry>	[1..1]	Fixed value:”PAPSS”
1.11.		Payment Type Information			<PmtTpInf>	[1..1]	
1.12.			Service Level		<SvcLvl>	[1..1]	
1.13.				Proprietary	< Prtry>	[1..1]	Fixed value:”INST”
1.14.			Local Instrument		<LclInstrm>	[1..1]	
1.15.				Code	< Cd>	[1..1]	Empty or according to Payment schema defined in PAPSS

1.16.		Instructing Agent			<InstgAgt>	[0..1]	Present only for incoming files, generated by Participants
1.17.			Financial Institution Identification		<FinInstnId>	[1..1]	
1.18.				Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructing participant
1.19.		Instructed Agent			<InstgAgt>	[0..1]	Present only for outgoing files, generated by PAPSS
1.20.			Financial Institution Identification		<FinInstnId>	[1..1]	
1.21.				Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructed participant

Item Details

The table below displays only the fields from that are validated by PAPSS. The complete ISO20022 message contains many more fileds, which are only validated against the XML schema. With the exception of the “Interbank Settlement Amount” all the other fields are forwarded by PAPSS to the beneficiary participant unmodified, as received from the originator party. The “Interbank Settlement Amount” is modified by PAPSS in order to reflect the amount in the local currency of the beneficiary country.

In order to customize your business procedures the following xml tags were introduced:

- Because of CAM purposes the following optional fields were introduced:
  - Creditor/Contact Details/Phone number
  - Creditor/Contact Details/Email address
  - Creditor/Contact Details/Other Information – here, in order to indicate that a translation was made, the text ‘CAM’ must be used

INDEX	MESSAGE ITEM			XML TAG	MULTI.	TYPE
2.1.	Credit Transfer Transaction Information			<CdtTrfTxInf>	[1..1]	
2.2.		Payment Identification		<PmtId>	[1..1]	
2.3.			Instruction Id	<InstrId>	[0..1]	Max35Text
2.4.			End To End Identification	<EndToEndId>	[1..1]	Max35Text
2.5.			Transaction Identification	<TxId>	[1..1]	Max35Text, Tran reference
2.6.		Payment Type Information		< PmtTpInf>	[0..1]	
2.7.			Service Level	SvcLvl	[1..1]	Prtry: INST
2.8.			Local Instrument	LclInstrm	[0..1]	Selects the transaction type according to the defined Payment Schema. If no local instrument is selected, then the

						default Payment schema for that settlement region is used
2.9.			Category Purpose	CtgyPurp	[0..1]	Standard ISO 20022 codes, or proprietary (non-standard) value
2.10.		Interbank Settlement Amount		<IntrBkSttlmAmt>	[1..1]	Settlement amount in the local currency of the originator
2.11.		Acceptance Date and time		<AccptncDtTm>	[1..1]	ISODateTime
2.12.		Instructed Amount		<InstdAmt>	[1..1]	Instructed amount in the currency of the beneficiary
2.13.		Exchange Rate		XchgRate	[1..1]	Must be present, but the value will be ignored for incoming payments, filled by PAPSS for payments forwarded to beneficiary party
2.14.		Charge Bearer		<ChrgBr>	[1..1]	Fixed text:"SLEV"
2.15.		Debtor		<Dbtr>	[1..1]	
2.16.			Name	<Nm>	[1..1]	Max140Text
2.17.			Postal Address	<PstlAdr>	[1..1]	
2.18.				Country	<Ctry>	[1..1]	2-letter Country Code
2.19.				Address Line	<AdrLine>	[1..7]	Max70Text
2.20.		Debtor Account		<DbtrAcct>	[1..1]	
2.21.			Identification	<Id>	[1..1]	

2.22.				IBAN	<IBAN>	[0..1]	Debtor Account identification as IBAN
2.23.				BBAN	<Othr><Id> + <Othr><SchmeNm><Cd>	[0..1]	Debtor Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = “BBAN”
2.24.		Debtor Agent			<DbtrAgt>	[1..1]	
2.25.			Financial Institution Identification		<FinInstnId>	[1..1]	
2.26.				Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Debtor participant
2.27.		Creditor Agent			<CdtrAgt>	[1..1]	
2.28.			Financial Institution Identification		<FinInstnId>	[1..1]	
2.29.				Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Creditor participant
2.30.		Creditor			<Cdtr>	[1..1]	
2.31.			Name		<Nm>	[1..1]	Max140Text
2.32.			Postal Address		<PstlAdr>	[1..1]	
2.33.				Country	<Ctry>	[1..1]	2-letter Country Code
2.34.				Address Line	<AdrLine>	[1..7]	Max70Text
2.35.			Contact Details		<CtctDtls>	[0..1]	
2.36.				Phone Number	<PhneNb>	[1..1]	PhoneNumber
2.37.				Email Address	<EmailAdr>	[1..1]	Max2048Text

2.38.				Other Information	<Othr>	[0..1]	Max35Text
2.39.		Creditor Account			<CdtrAcct>	[1..1]	
2.40.			Identification		<Id>	[1..1]	
2.41.				IBAN	<IBAN>	[0..1]	Either IBAN or BBAN
2.42.				BBAN	<Othr><Id> + <Othr><SchmeNm><Cd>	[0..1]	Creditor Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = “BBAN”
2.43.		Purpose			<Purp>	[0..1]	Choice of standard ISO 20022 purpose codes or non-standard value (proprietary) – Max35Text
2.44.		Remittance Information			<RmtInf>	[0..1]	Remittance Information, transmitted without changes between all parties
2.45.			Unstructured		<Ustrd>	[0..N]	
2.46.			Structured		<Strd>	[0..N]	

Sample

A credit transfer from StanbicIBTC Bank (PAPSS Id: NG1035) to GCB Bank PLC (PAPSS Id: GH1004) with the original amount of 2,600.00 NGN.

a. input: Message sent by StanbicIBTC Bank to PAPSS system

```
<hdr:FIToFICstmrCdtTrf
xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.008.001.07">
        <GrpHdr>
            <MsgId>20220310NG10351646906209952</MsgId>
            <CreDtTm>2022-03-10T09:56:49Z</CreDtTm>
            <NbOfTxs>1</NbOfTxs>
            <TtlIntrBkSttlmAmt Ccy="NGN">2600.0</TtlIntrBkSttlmAmt>
            <IntrBkSttlmDt>2022-03-10</IntrBkSttlmDt>
            <SttlmInf>
                <SttlmMtd>CLRG</SttlmMtd>
                <ClrSys>
                    <Prtry>PAPSS</Prtry>
                </ClrSys>
            </SttlmInf>
            <PmtTpInf>
                <SvcLvl>
                    <Prtry>INST</Prtry>
                </SvcLvl>
                <LclInstrm>
                    <Cd>ET</Cd>
                </LclInstrm>
                <CtgyPurp>
                    <Cd>GOVT</Cd>
                </CtgyPurp>
            </PmtTpInf>
            <InstgAgt>
                <FinInstnId>
                    <BICFI>SBICNGLX</BICFI>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>NG1035</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstgAgt>
        </GrpHdr>
        <CdtTrfTxInf>
            <PmtId>
                <InstrId>20220310NG10351646906209952</InstrId>
                <EndToEndId>141332397017</EndToEndId>
                <TxId>20220310NG10351646906209952</TxId>
            </PmtId>
            <IntrBkSttlmAmt Ccy="NGN">2600.0</IntrBkSttlmAmt>
            <AccptncDtTm>2022-03-10T09:56:49Z</AccptncDtTm>
            <InstdAmt Ccy="GHS">39.0</InstdAmt>
            <XchgRate>0.015</XchgRate>
            <ChrgBr>SLEV</ChrgBr>
            <UltmtDbtr>
```

```
            <Nm>nusfgs</Nm>
        </UltmtDbtr>
        <Dbtr>
            <Nm>KINGSLEY NZECHUKWU ANOKAM</Nm>
            <PstlAdr>
                <Ctry>NG</Ctry>
                <AdrLine>Stanbic IBTC</AdrLine>
            </PstlAdr>
        </Dbtr>
        <DbtrAcct>
            <Id>
                <Othr>
                    <Id>0026214860</Id>
                    <SchmeNm>
                        <Cd>BBAN</Cd>
                    </SchmeNm>
                </Othr>
            </Id>
        </DbtrAcct>
        <DbtrAgt>
            <FinInstnId>
                <BICFI>SBICNGLX</BICFI>
                <ClrSysMmbId>
                    <MmbId>NG1035</MmbId>
                </ClrSysMmbId>
            </FinInstnId>
        </DbtrAgt>
        <CdtrAgt>
            <FinInstnId>
                <BICFI>GHCBGHAC</BICFI>
                <ClrSysMmbId>
                    <ClrSysId>
                        <Prtry>PAPSS</Prtry>
                    </ClrSysId>
                    <MmbId>GH1004</MmbId>
                </ClrSysMmbId>
            </FinInstnId>
        </CdtrAgt>
        <Cdtr>
            <Nm>ASAMOAH GYAN</Nm>
            <PstlAdr>
                <Ctry>GH</Ctry>
                <AdrLine>000160</AdrLine>
            </PstlAdr>
        </Cdtr>
        <CdtrAcct>
            <Id>
                <Othr>
                    <Id>0242017608</Id>
                    <SchmeNm>
                        <Cd>BBAN</Cd>
                    </SchmeNm>
                </Othr>
            </Id>
        </CdtrAcct>
        <UltmtCdtr>
            <Nm>bsvmp</Nm>
```

```
            </UltmtCdtr>
            <RmtInf>
                <Ustrd>Send Money</Ustrd>
            </RmtInf>
        </CdtTrfTxInf>
        <SplmtryData>
            <Envlp>
                <AuditInfo>
                    <IP>10.234.135.41</IP>
                    <PC>ungredbox02a</PC>
                </AuditInfo>
            </Envlp>
        </SplmtryData>
</hdr:FIToFICstmrCdtTrf>
```

b. output: Message forwarded by PAPSS to GCB Bank PLC

```
<hdr:FIToFICstmrCdtTrf
xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.008.001.07">
        <GrpHdr>
            <MsgId>CT0202203100000009602</MsgId>
            <CreDtTm>2022-03-10T09:56:50Z</CreDtTm>
            <NbOfTxs>1</NbOfTxs>
            <TtlIntrBkSttlmAmt Ccy="GHS">39.01</TtlIntrBkSttlmAmt>
            <IntrBkSttlmDt>2022-03-10</IntrBkSttlmDt>
            <SttlmInf>
                <SttlmMtd>CLRG</SttlmMtd>
                <ClrSys>
                    <Prtry>PAPSS</Prtry>
                </ClrSys>
            </SttlmInf>
            <PmtTpInf>
                <SvcLvl>
                    <Prtry>INST</Prtry>
                </SvcLvl>
                <LclInstrm>
                    <Cd>ET</Cd>
                </LclInstrm>
                <CtgyPurp>
                    <Cd>GOVT</Cd>
                </CtgyPurp>
            </PmtTpInf>
            <InstdAgt>
                <FinInstnId>
                    <BICFI>SBICNGLX</BICFI>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>GH1004</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstdAgt>
        </GrpHdr>
        <CdtTrfTxInf>
            <PmtId>
                <InstrId>20220310NG10351646906209952</InstrId>
                <EndToEndId>141332397017</EndToEndId>
```

```
            <TxId>20220310NG10351646906209952</TxId>
        </PmtId>
        <IntrBkSttlmAmt Ccy="GHS">39.01</IntrBkSttlmAmt>
        <AccptncDtTm>2022-03-10T09:56:49Z</AccptncDtTm>
        <InstdAmt Ccy="NGN">2600.00</InstdAmt>
        <XchgRate>0.015</XchgRate>
        <ChrgBr>SLEV</ChrgBr>
        <UltmtDbtr>
            <Nm>nusfgs</Nm>
        </UltmtDbtr>
        <Dbtr>
            <Nm>KINGSLEY NZECHUKWU ANOKAM</Nm>
            <PstlAdr>
                <Ctry>NG</Ctry>
                <AdrLine>Stanbic IBTC</AdrLine>
            </PstlAdr>
        </Dbtr>
        <DbtrAcct>
            <Id>
                <Othr>
                    <Id>0026214860</Id>
                    <SchmeNm>
                        <Cd>BBAN</Cd>
                    </SchmeNm>
                </Othr>
            </Id>
        </DbtrAcct>
        <DbtrAgt>
            <FinInstnId>
                <BICFI>SBICNGLX</BICFI>
                <ClrSysMmbId>
                    <MmbId>NG1035</MmbId>
                </ClrSysMmbId>
            </FinInstnId>
        </DbtrAgt>
        <CdtrAgt>
            <FinInstnId>
                <BICFI>GHCBGHAC</BICFI>
                <ClrSysMmbId>
                    <ClrSysId>
                        <Prtry>PAPSS</Prtry>
                    </ClrSysId>
                    <MmbId>GH1004</MmbId>
                </ClrSysMmbId>
            </FinInstnId>
        </CdtrAgt>
        <Cdtr>
            <Nm>ASAMOAH GYAN</Nm>
            <PstlAdr>
                <Ctry>GH</Ctry>
                <AdrLine>000160</AdrLine>
            </PstlAdr>
        </Cdtr>
        <CdtrAcct>
            <Id>
                <Othr>
                    <Id>0242017608</Id>
```

```
                        <SchmeNm>
                            <Cd>BBAN</Cd>
                        </SchmeNm>
                    </Othr>
                </Id>
            </CdtrAcct>
            <UltmtCdtr>
                <Nm>bsvmp</Nm>
            </UltmtCdtr>
            <RmtInf>
                <Ustrd>Send Money</Ustrd>
            </RmtInf>
        </CdtTrfTxInf>

<SplmtryData><Envlp><AuditInfo>SECRET</AuditInfo></Envlp></SplmtryData>
</hdr:FIToFICstmrCdtTrf>
```

c. receiver confirmation: Message from GCB Bank PLC to PAPSS confirming the acceptance of the payment

```
<hdr:FIToFIPmtStsRpt xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.002.001.07">
        <GrpHdr>
            <MsgId>20220310GH100400000009602</MsgId>
            <CreDtTm>2022-03-10T09:56:48Z</CreDtTm>
            <InstgAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>GH1004</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstgAgt>
        </GrpHdr>
        <OrgnlGrpInfAndSts>
            <OrgnlMsgId>CT0202203100000009602</OrgnlMsgId>
            <OrgnlMsgNmId>pacs.008.001.07</OrgnlMsgNmId>
        </OrgnlGrpInfAndSts>
        <TxInfAndSts>
            <StsId>20220310GH100400000009602</StsId>
            <OrgnlEndToEndId>141332397017</OrgnlEndToEndId>
            <OrgnlTxId>20220310NG10351646906209952</OrgnlTxId>
            <TxSts>ACCP</TxSts>
            <StsRsnInf>
                <Orgtr>
                    <Id>
                        <OrgId>
                            <Othr>
                                <Id>GH1004</Id>
                            </Othr>
                        </OrgId>
                    </Id>
                </Orgtr>
                <Rsn>
                    <Cd>MS03</Cd>
                </Rsn>
```

```
            </StsRsnInf>
            <AccptncDtTm>2022-03-10T09:56:49Z</AccptncDtTm>
            <OrgnlTxRef>
                <PmtTpInf>
                    <SvcLvl>
                        <Prtry>INST</Prtry>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                </PmtTpInf>
                <DbtrAgt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1035</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
            </OrgnlTxRef>
        </TxInfAndSts>
    </hdr:FIToFIPmtStsRpt>
```

d.receiver confirmation reply: Message sent to GCB Bank PLC confirming the completion of the transaction. Transferred amount should be made available to the customer immediately.

```
<hdr:FIToFIPmtStsRpt xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.002.001.07">
        <GrpHdr>
            <MsgId>PS20220310000000009702</MsgId>
            <CreDtTm>2022-03-10T09:56:52Z</CreDtTm>
            <InstdAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <MmbId>GH1004</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstdAgt>
        </GrpHdr>
        <OrgnlGrpInfAndSts>
            <OrgnlMsgId>20220310GH100400000009602</OrgnlMsgId>
            <OrgnlMsgNmId>pacs.002.001.07</OrgnlMsgNmId>
            <GrpSts>ACSP</GrpSts>
        </OrgnlGrpInfAndSts>
        <TxInfAndSts>
            <StsId>PS20220310000000009702</StsId>
            <OrgnlEndToEndId>141332397017</OrgnlEndToEndId>
            <OrgnlTxId>20220310NG10351646906209952</OrgnlTxId>
            <AccptncDtTm>2022-03-10T09:56:49Z</AccptncDtTm>
            <OrgnlTxRef>
                <IntrBkSttlmAmt Ccy="NGN">2600.00</IntrBkSttlmAmt>
                <Amt>
                    <InstdAmt Ccy="GHS">39.01</InstdAmt>
                </Amt>
                <PmtTpInf>
                    <SvcLvl>
```

```
                        <Prtry>INST</Prtry>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                </PmtTpInf>
                <DbtrAgt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1035</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
            </OrgnlTxRef>
        </TxInfAndSts>
    </hdr:FIToFIPmtStsRpt>
```

e. reply to original sender

```
<hdr:FIToFIPmtStsRpt
xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.002.001.07">
        <GrpHdr>
            <MsgId>PS20220310000000009802</MsgId>
            <CreDtTm>2022-03-10T09:56:52Z</CreDtTm>
            <InstdAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <MmbId>NG1035</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstdAgt>
        </GrpHdr>
        <OrgnlGrpInfAndSts>
            <OrgnlMsgId>20220310NG10351646906209952</OrgnlMsgId>
            <OrgnlMsgNmId>pacs.008.001.07</OrgnlMsgNmId>
            <GrpSts>ACSP</GrpSts>
        </OrgnlGrpInfAndSts>
        <TxInfAndSts>
            <StsId>PS20220310000000009802</StsId>
            <OrgnlInstrId>20220310NG10351646906209952</OrgnlInstrId>
            <OrgnlEndToEndId>141332397017</OrgnlEndToEndId>
            <OrgnlTxId>20220310NG10351646906209952</OrgnlTxId>
            <AccptncDtTm>2022-03-10T09:56:49Z</AccptncDtTm>
            <OrgnlTxRef>
                <PmtTpInf>
                    <SvcLvl>
                        <Prtry>INST</Prtry>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                    <CtgyPurp>
                        <Cd>GOVT</Cd>
                    </CtgyPurp>
                </PmtTpInf>
```

```
                <DbtrAgt>
                    <FinInstnId>
                        <BICFI>SBICNGLX</BICFI>
                        <ClrSysMmbId>
                            <MmbId>NG1035</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
            </OrgnlTxRef>
        </TxInfAndSts>
    </hdr:FIToFIPmtStsRpt>
```

An Invoice Payment sent by Central Bank of Ghana to a Bank Participant in Liberia. The sender has the amount notification option ON.

a. Invoice Payment initiation instruction pacs.008

```
<env:Message xmlns:env="urn:montran:message.01">
    <env:AppHdr xmlns="urn:iso:std:iso:20022:tech:xsd:head.001.001.01">
         <Fr>
            <FIId>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                           <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>GH1001</MmbId>
                     </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </Fr>
        <To>
            <FIId>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>XA0002</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </To>
        <BizMsgIdr>M20220209GH100113474253</BizMsgIdr>
        <MsgDefIdr>pacs.008.001.07</MsgDefIdr>
        <BizSvc>RTP</BizSvc>
        <CreDt>2022-02-09T13:31:15Z</CreDt>
    </env:AppHdr>
    <env:FIToFICstmrCdtTrf
xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.008.001.07">
        <GrpHdr>
            <MsgId>M20220209GH100113474253</MsgId>
            <CreDtTm>2022-02-09T15:31:15+02:00</CreDtTm>
            <NbOfTxs>1</NbOfTxs>
            <TtlIntrBkSttlmAmt Ccy="GHS">15.41</TtlIntrBkSttlmAmt>

            <IntrBkSttlmDt>2022-02-09</IntrBkSttlmDt>
```

```
            <SttlmInf>
                <SttlmMtd>CLRG</SttlmMtd>
                <ClrSys>
                    <Prtry>PAPSS</Prtry>
                </ClrSys>
            </SttlmInf>
            <PmtTpInf>
                <SvcLvl>
                    <Cd>INST</Cd>
                </SvcLvl>
                <LclInstrm>
                    <Cd>ET</Cd>
                </LclInstrm>
                <CtgyPurp>
                    <Cd>SUPP</Cd>
                </CtgyPurp>
            </PmtTpInf>
            <InstgAgt>
                <FinInstnId>
                    <BICFI>BAGHGHA4</BICFI>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>GH1001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstgAgt>
        </GrpHdr>
        <CdtTrfTxInf>
            <PmtId>
                <InstrId>20220209GH100113474253</InstrId>
                <EndToEndId>20220209GH100113474253</EndToEndId>
                <TxId>20220209GH100113474253</TxId>
            </PmtId>
            <IntrBkSttlmAmt Ccy="GHS">15.41</IntrBkSttlmAmt>
            <AccptncDtTm>2022-02-09T15:31:15+02:00</AccptncDtTm>
            <InstdAmt Ccy="LRD">42.29</InstdAmt>
            <ChrgBr>SLEV</ChrgBr>
            <UltmtDbtr>
                <Nm>nusfgs</Nm>
            </UltmtDbtr>
            <Dbtr>
                <Nm>zmtwjkn</Nm>
                <PstlAdr>
                    <Ctry>GH</Ctry>
                    <AdrLine>Address Line1</AdrLine>
                </PstlAdr>
            </Dbtr>
            <DbtrAcct>
                <Id>
                    <Othr>
                        <Id>65AC100010002</Id>
                        <SchmeNm>
                            <Cd>BBAN</Cd>

                        </SchmeNm>
```

```
                    </Othr>
                </Id>
            </DbtrAcct>
            <DbtrAgt>
                <FinInstnId>
                    <BICFI>BAGHGHA4</BICFI>
                    <ClrSysMmbId>
                        <MmbId>GH1001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </DbtrAgt>
            <CdtrAgt>
                <FinInstnId>
                    <BICFI>RTPBIC24</BICFI>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>LR1002</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </CdtrAgt>
            <Cdtr>
                <Nm>ifgvcwoj</Nm>
                <PstlAdr>
                    <Ctry>LR</Ctry>
                    <AdrLine>Address Line1</AdrLine>
                </PstlAdr>
            </Cdtr>
            <CdtrAcct>
                <Id>
                    <Othr>
                        <Id>65AC100010002</Id>
                        <SchmeNm>
                            <Cd>BBAN</Cd>
                        </SchmeNm>
                    </Othr>
                </Id>
            </CdtrAcct>
            <UltmtCdtr>
                <Nm>bsvmp</Nm>
            </UltmtCdtr>
            <Purp>
                <Cd>RCPT</Cd>
            </Purp>
            <RmtInf>
                <Ustrd>DAN NICA</Ustrd>
            </RmtInf>
        </CdtTrfTxInf>
        <SplmtryData>
            <Envlp>
                <AuditInfo>
                    <IP>8.8.8.9</IP>
                    <PC>google</PC>
                </AuditInfo>
            </Envlp>
        </SplmtryData>
```

```
    </env:FIToFICstmrCdtTrf>
</env:Message>
```

b. The PAPSS output message pacs.008.

```
<hdr:Message xmlns:hdr="urn:montran:message.01">
    <hdr:AppHdr xmlns="urn:iso:std:iso:20022:tech:xsd:head.001.001.01">
        <Fr>
            <FIId>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>XA0002</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </Fr>
        <To>
            <FIId>
                <FinInstnId>
                    <BICFI>RTPBIC24</BICFI>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>LR1002</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </To>
        <BizMsgIdr>CT02021101200000011401</BizMsgIdr>
        <MsgDefIdr>pacs.008.001.07</MsgDefIdr>
        <CreDt>2022-02-09T13:31:16Z</CreDt>

    </hdr:AppHdr>
    <hdr:FIToFICstmrCdtTrf
xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.008.001.07">
        <GrpHdr>
            <MsgId>CT02021101200000011401</MsgId>
            <CreDtTm>2022-02-09T15:31:16+02:00</CreDtTm>
            <NbOfTxs>1</NbOfTxs>
            <TtlIntrBkSttlmAmt Ccy="LRD">42.29</TtlIntrBkSttlmAmt>

            <IntrBkSttlmDt>2022-02-09</IntrBkSttlmDt>
            <SttlmInf>
                <SttlmMtd>CLRG</SttlmMtd>
                <ClrSys>
                    <Prtry>PAPSS</Prtry>
                </ClrSys>
            </SttlmInf>
            <PmtTpInf>
                <SvcLvl>
                    <Cd>INST</Cd>
                </SvcLvl>
                <LclInstrm>
```

```
                <Cd>ET</Cd>
            </LclInstrm>
            <CtgyPurp>
                <Cd>SUPP</Cd>
            </CtgyPurp>
        </PmtTpInf>
        <InstdAgt>
            <FinInstnId>
                <BICFI>BAGHGHA4</BICFI>
                <ClrSysMmbId>
                    <ClrSysId>

                        <Prtry>PAPSS</Prtry>

                    </ClrSysId>
                    <MmbId>LR1002</MmbId>

                </ClrSysMmbId>
            </FinInstnId>
        </InstdAgt>
    </GrpHdr>
    <CdtTrfTxInf>
        <PmtId>
            <InstrId>20220209GH100113474253</InstrId>

            <EndToEndId>20220209GH100113474253</EndToEndId>

            <TxId>20220209GH100113474253</TxId>
        </PmtId>
        <IntrBkSttlmAmt Ccy="LRD">42.29</IntrBkSttlmAmt>

        <AccptncDtTm>2022-02-09T15:31:15+02:00</AccptncDtTm>

        <InstdAmt Ccy="GHS">15.42</InstdAmt>
        <ChrgBr>SLEV</ChrgBr>
        <UltmtDbtr>
            <Nm>nusfgs</Nm>
        </UltmtDbtr>
        <Dbtr>
            <Nm>zmtwjkn</Nm>
            <PstlAdr>
                <Ctry>GH</Ctry>
                <AdrLine>Address Line1</AdrLine>

            </PstlAdr>
        </Dbtr>
        <DbtrAcct>
            <Id>

                <Othr>
                    <Id>65AC100010002</Id>

                    <SchmeNm>

                        <Cd>BBAN</Cd>
```

```
                    </SchmeNm>

                </Othr>
            </Id>
        </DbtrAcct>
        <DbtrAgt>
            <FinInstnId>
                <BICFI>BAGHGHA4</BICFI>
                <ClrSysMmbId>
                    <MmbId>GH1001</MmbId>

                </ClrSysMmbId>
            </FinInstnId>
        </DbtrAgt>
        <CdtrAgt>
            <FinInstnId>
                <BICFI>RTPBIC24</BICFI>
                <ClrSysMmbId>
                    <ClrSysId>

                        <Prtry>PAPSS</Prtry>

                    </ClrSysId>
                    <MmbId>LR1002</MmbId>

                </ClrSysMmbId>
            </FinInstnId>
        </CdtrAgt>
        <Cdtr>
            <Nm>ifgvcwoj</Nm>
            <PstlAdr>
                <Ctry>LR</Ctry>
                <AdrLine>Address Line1</AdrLine>

            </PstlAdr>
        </Cdtr>
        <CdtrAcct>
            <Id>
                <Othr>
                    <Id>65AC100010002</Id>

                    <SchmeNm>

                        <Cd>BBAN</Cd>

                    </SchmeNm>
                </Othr>
            </Id>
        </CdtrAcct>
        <UltmtCdtr>
            <Nm>bsvmp</Nm>
        </UltmtCdtr>
        <Purp>
            <Cd>RCPT</Cd>
        </Purp>
        <RmtInf>
            <Ustrd>DAN NICA</Ustrd>
```

```
            </RmtInf>
        </CdtTrfTxInf>

<SplmtryData><Envlp><AuditInfo>SECRET</AuditInfo></Envlp></SplmtryData>
    </hdr:FIToFICstmrCdtTrf>
</hdr:Message>
```

c. Receiver Reply message pacs.002

```
<hdr:Message xmlns:hdr="urn:montran:message.01">
    <hdr:AppHdr xmlns="urn:iso:std:iso:20022:tech:xsd:head.001.001.01">
        <Fr>
            <FIId>
                <FinInstnId>
                    <BICFI>RTPBIC24</BICFI>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>LR1002</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </Fr>
        <To>
            <FIId>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>XA0002</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </To>
        <BizMsgIdr>20220209LR100213476395</BizMsgIdr>
        <MsgDefIdr>pacs.002.001.07</MsgDefIdr>
        <CreDt>2022-02-09T13:31:16Z</CreDt>

    </hdr:AppHdr>
    <hdr:FIToFIPmtStsRpt
xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.002.001.07">
        <GrpHdr>
            <MsgId>20220209LR100213476395</MsgId>
            <CreDtTm>2022-02-09T15:31:16+02:00</CreDtTm>
            <InstgAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <MmbId>LR1002</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstgAgt>
        </GrpHdr>
        <OrgnlGrpInfAndSts>
            <OrgnlMsgId>CT0202110120000011401</OrgnlMsgId>
            <OrgnlMsgNmId>pacs.008.001.07</OrgnlMsgNmId>
```

```
            <GrpSts>ACCP</GrpSts>
        </OrgnlGrpInfAndSts>
        <TxInfAndSts>
            <StsId>20220209LR100213476395</StsId>
            <OrgnlInstrId>20220209GH100113474253</OrgnlInstrId>
            <OrgnlEndToEndId>20220209GH100113474253</OrgnlEndToEndId>
            <OrgnlTxId>20220209GH100113474253</OrgnlTxId>
            <AccptncDtTm>2022-02-09T15:31:15+02:00</AccptncDtTm>
            <OrgnlTxRef>
                <PmtTpInf>
                    <SvcLvl>
                        <Cd>INST</Cd>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                    <CtgyPurp>
                        <Cd>SUPP</Cd>
                    </CtgyPurp>
                </PmtTpInf>
                <DbtrAgt>
                    <FinInstnId>
                        <BICFI>BAGHGHA4</BICFI>
                        <ClrSysMmbId>
                            <MmbId>GH1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
            </OrgnlTxRef>
        </TxInfAndSts>
    </hdr:FIToFIPmtStsRpt>
</hdr:Message>
```

d. Reply confirmation message to the receiver of the payment

```
<hdr:Message xmlns:hdr="urn:montran:message.01">
    <hdr:AppHdr xmlns="urn:iso:std:iso:20022:tech:xsd:head.001.001.01">
        <Fr>
            <FIId>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>XA0002</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </Fr>
        <To>
            <FIId>
                <FinInstnId>
                    <BICFI>RTPBIC24</BICFI>
                    <ClrSysMmbId>
                        <ClrSysId>
```

```
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>LR1002</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </To>
        <BizMsgIdr>PS202110120000011501</BizMsgIdr>
        <MsgDefIdr>pacs.002.001.07</MsgDefIdr>
        <CreDt>2022-02-09T13:31:16Z</CreDt>

    </hdr:AppHdr>
    <hdr:FIToFIPmtStsRpt
xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.002.001.07">
        <GrpHdr>
            <MsgId>PS202110120000011501</MsgId>
            <CreDtTm>2022-02-09T15:31:16+02:00</CreDtTm>
            <InstdAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <MmbId>LR1002</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstdAgt>
        </GrpHdr>
        <OrgnlGrpInfAndSts>
            <OrgnlMsgId>20220209LR100213476395</OrgnlMsgId>
            <OrgnlMsgNmId>pacs.002.001.07</OrgnlMsgNmId>
            <GrpSts>ACSC</GrpSts>
        </OrgnlGrpInfAndSts>
        <TxInfAndSts>
            <StsId>PS202110120000011501</StsId>
            <OrgnlInstrId>20220209GH100113474253</OrgnlInstrId>
            <OrgnlEndToEndId>20220209GH100113474253</OrgnlEndToEndId>
            <OrgnlTxId>20220209GH100113474253</OrgnlTxId>
            <AccptncDtTm>2022-02-09T15:31:15+02:00</AccptncDtTm>
            <OrgnlTxRef>
                <PmtTpInf>
                    <SvcLvl>
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                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                    <CtgyPurp>
                        <Cd>SUPP</Cd>
                    </CtgyPurp>
                </PmtTpInf>
                <DbtrAgt>
                    <FinInstnId>
                        <BICFI>BAGHGHA4</BICFI>
                        <ClrSysMmbId>
                            <MmbId>GH1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
            </OrgnlTxRef>
```

```
        </TxInfAndSts>
    </hdr:FIToFIPmtStsRpt>
</hdr:Message>
```

e. Reply to the sender pacs.002

```
<hdr:Message xmlns:hdr="urn:montran:message.01">
    <hdr:AppHdr xmlns="urn:iso:std:iso:20022:tech:xsd:head.001.001.01">
        <Fr>
            <FIId>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>XA0002</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </Fr>
        <To>
            <FIId>
                <FinInstnId>
                    <BICFI>BAGHGHA4</BICFI>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>GH1001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </To>
        <BizMsgIdr>PS202110120000011601</BizMsgIdr>
        <MsgDefIdr>pacs.002.001.07</MsgDefIdr>
        <CreDt>2022-02-09T13:31:16Z</CreDt>
    </hdr:AppHdr>
    <hdr:FIToFIPmtStsRpt
xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.002.001.07">
        <GrpHdr>
            <MsgId>PS202110120000011601</MsgId>
            <CreDtTm>2022-02-09T15:31:16+02:00</CreDtTm>
            <InstdAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <MmbId>GH1001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstdAgt>
        </GrpHdr>
        <OrgnlGrpInfAndSts>
            <OrgnlMsgId>M20220209GH100113474253</OrgnlMsgId>
            <OrgnlMsgNmId>pacs.008.001.07</OrgnlMsgNmId>
            <GrpSts>ACSC</GrpSts>
        </OrgnlGrpInfAndSts>
        <TxInfAndSts>
            <StsId>PS202110120000011601</StsId>
```

```
            <OrgnlInstrId>20220209GH100113474253</OrgnlInstrId>
            <OrgnlEndToEndId>20220209GH100113474253</OrgnlEndToEndId>
            <OrgnlTxId>20220209GH100113474253</OrgnlTxId>
            <AccptncDtTm>2022-02-09T15:31:15+02:00</AccptncDtTm>
            <OrgnlTxRef>
                <IntrBkSttlmAmt Ccy="GHS">15.42</IntrBkSttlmAmt>
                <Amt>
                    <InstdAmt Ccy="LRD">42.29</InstdAmt>
                </Amt>
                <PmtTpInf>
                    <SvcLvl>
                        <Cd>INST</Cd>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                    <CtgyPurp>
                        <Cd>SUPP</Cd>
                    </CtgyPurp>
                </PmtTpInf>
                <DbtrAgt>
                    <FinInstnId>
                        <BICFI>BAGHGHA4</BICFI>
                        <ClrSysMmbId>
                            <MmbId>GH1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
            </OrgnlTxRef>
        </TxInfAndSts>
    </hdr:FIToFIPmtStsRpt>
</hdr:Message>
```

7.1.3. Credit Transfer Return – pacs.004.001.07

The format uses the standard ISO schemas in the following structure. A restriction of a single return is enforced

INDEX		MESSAGE ITEM	XML TAG	MULTIPLICITY
1	Message Root		<PmtRtr>	[1..1]
2		Group Header	<GrpHdr>	[1..1]
3		Transaction Information	<TxInf>	[1..1]

Group Header

INDEX	MESSAGE ITEM				XML TAG	MULTIPLICITY	TYPE
1.0	Group Header				<GrpHdr>	[1..1]	
1.1		Message Identification			<MsgId>	[1..1]	Max35Text
1.2		Creation Date Time			<CreDtTm>	[1..1]	ISODateTime
1.3		Number Of Transactions			<NbOfTxs>	[1..1]	1
1.4		Total Returned Interbank Settlement Amount			<TtlRtrdIntrBkSttlmAmt>	[1..1]	ActiveCurrencyAndAmount
1.5		Interbank Settlement Date			<IntrBkSttlmDt>	[1..1]	ISODate
1.6		Settlement Information			<SttlmInf>	[1..1]	
1.7			Settlement Method		<SttlmMtd>	[1..1]	Fixed text:"CLRG"
1.8			Clearing System Reference		<ClrSys>	[1..1]	
1.9				Proprietary	<Prtry>	[1..1]	Fixed text:"PAPSS"
1.10		Instructing Agent			<InstgAgt>	[0..1]	Present only for incoming files, generated by Participants
1.11			Financial Institution Identification		<FinInstnId>	[1..1]	
1.12				Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructing participant
1.13		Instructed Agent			<InstgAgt>	[0..1]	Present only for outgoing files, generated by PAPSS
1.14			Financial Institution Identification		<FinInstnId>	[1..1]	

1.15				Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructed participant

Item Details

INDEX	MESSAGE ITEM	XML TAG	MULTI	TYPE
2.1.	Transaction Information	<TxInf>	[1..1]	
2.2.	Return Identification	<RtrId>	[1..1]	Max35Text
2.3.	Original Group Information	<OrgnlGrpInf>	[0..1]	
2.4.	Original Message Identification	<OrgnlMsgId>	[1..1]	Max35Text
2.5.	Original Message Name Identification	<OrgnlMsgNmId>	[1..1]	Max35Text
2.6.	Original End To End Identification	<OrgnlEndToEndId>	[1..1]	Max35Text
2.7.	Original Transaction Identification	<OrgnlTxId>	[1..1]	Max35Text
2.8.	Original Interbank Settlement Amount	<OrgnlIntrBkSttlmAmt>	[1..1]	ActiveCurrencyAndAmount
2.9.	Returned Interbank Settlement Amount	<RtrdIntrBkSttlmAmt>	[1..1]	ActiveCurrencyAndAmount
2.10.	Returned Instructed Amount	<RtrdInstdAmt>	[1..1]	Instructed amount in the currency of the beneficiary
2.11.	Exchange Rate	<XchgRate>	[1..1]	Must be present, but the value will be ignored for incoming payments, filled by PAPSS for payments

							forwarded to beneficiary party
2.12.		Charge Bearer			<ChrgBr>	[1..1]	Fixed text:”SLEV”
2.13.		Return Reason Information			<RtrRsnInf>	[1..1]	
2.14.			Originator		<Orgtr>	[1..1]	
2.15.				Identification	<Id>	[1..1]	
2.16.					Organization Id	<OrgId>	[1..1]	
2.17.						Other (PAPSS ID)	<Other><Id>	[1..1]	Must also fill <Othr><SchmNm><Prtry> with value PAPSS
2.18.			Reason			<Rsn>	[1..1]	
2.19.				Code		<Cd>	[1..1]	Must always be filled with “FOCR” – Following Cancellation Request
2.20.		Original Transaction Reference				<OrgnlTxRef>	[1..1]	
2.21.			Interbank Settlement Date			<IntrBkSttlmDt>	[1..1]	ISODate
2.22.			Payment Type Information			<PmtTpInf>	[1..1]	
2.23.				Service Level		<SvcLvl>	[0..1]	
2.24.					Code	<Cd>	[1..1]	Fixed value: “INST”
2.25.				Local Instrument		<LclInstrm>	[1..1]	

2.26.					Code	<Cd>	[1..1]	Empty or according to Payment schema defined in PAPSS
2.27.			Remittance Information			<RmtInf>	[0..1]	
2.28.				Unstructured		<Ustrd>	[1..N]	Max140Text
2.29.				Structured		<Strd>	[1..N]	
2.30.			Debtor			<Dbtr>	[1..1]	
2.31.				Name		<Nm>	[1..1]	Max140Text
2.32.				Postal Address		<PstlAdr>	[1..1]	
2.33.					Country	<Ctry>	[1..1]	2-letter Country Code
2.34.					Address Line	<AdrLine>	[1..7]	Max70Text
2.35.				Contact Details		<CtctDtls>	[0..1]	
2.36.					Phone Number	<PhneNb>	[1..1]	PhoneNumber
2.37.					Email Address	<EmailAdr>	[1..1]	Max2048Text
2.38.					Other Information	<Othr>	[0..1]	Max35Text
2.39.			Debtor Account			<DbtrAcct>	[1..1]	
2.40.				Identification		<Id>	[1..1]	
2.41.					IBAN	<IBAN>	[1..1]	
2.42.					BBAN	<Othr><Id> + <Othr><SchmeNm><Cd>	[0..1]	Debtor Account identification as regular bank account number

								Othr/Id = account number Othr/SchmeNm/Cd = “BBAN”
2.43.			Debtor Agent			<DbtrAgt>	[1..1]	
2.44.				Financial Institution Identification		<FinInstnId>	[1..1]	
2.45.					Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the debtor agent of the original payment
2.46.			Creditor Agent			<CdtrAgt>	[1..1]	
2.47.				Financial Institution Identification		<FinInstnId>	[1..1]	
2.48.					Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the creditor agent of the original payment
2.49.			Creditor			<Cdtr>	[1..1]	
2.50.				Name		<Nm>	[1..1]	Max140Text
2.51.				Postal Address		<PstlAdr>	[1..1]	
2.52.					Country	<Ctry>	[1..1]	2-letter Country Code
2.53.					Address Line	<AdrLine>	[1..7]	Max70Text
2.54.				Contact Details		<CtctDtls>	[0..1]	
2.55.					Phone Number	<PhneNb>	[1..1]	PhoneNumber
2.56.					Email Address	<EmailAdr>	[1..1]	Max2048Text
2.57.					Other Information	<Othr>	[0..1]	Max35Text
2.58.			Creditor Account			<CdtrAcct>	[1..1]	
2.59.				Identification		<Id>	[1..1]	

2.60.					IBAN	<IBAN>	[1..1]	
2.61.					BBAN	<Othr><Id> + <Othr><SchmeNm><Cd>	[0..1]	Creditor Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = “BBAN”

Sample

A credit return initiated by GCB Bank PLC (GH1004) for the payment received from Central Bank of Nigeria (NG1001). The amount is the same as in the original payment.

a) Input: Message sent by GCB Bank PLC to PAPSS

```
<hdr:PmtRtr xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.004.001.07">
        <GrpHdr>
            <MsgId>20211228GH100414132500000226</MsgId>
            <CreDtTm>2021-12-28T15:11:58Z</CreDtTm>
            <NbOfTxs>1</NbOfTxs>
            <TtlRtrdIntrBkSttlmAmt Ccy="GHS">10.00</TtlRtrdIntrBkSttlmAmt>
            <IntrBkSttlmDt>2021-12-28</IntrBkSttlmDt>
            <SttlmInf>
                <SttlmMtd>CLRG</SttlmMtd>
                <ClrSys>
                    <Prtry>PAPSS</Prtry>
                </ClrSys>
            </SttlmInf>
            <InstgAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>GH1004</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstgAgt>
        </GrpHdr>
        <TxInf>
            <RtrId>20211228GH100414132500000226</RtrId>
            <OrgnlGrpInf>
                <OrgnlMsgId>20211227NG100114132500000157</OrgnlMsgId>
                <OrgnlMsgNmId>pacs.008.001.07</OrgnlMsgNmId>
            </OrgnlGrpInf>
            <OrgnlEndToEndId>20211227NG</OrgnlEndToEndId>
            <OrgnlTxId>20211227NG100114132500000157</OrgnlTxId>
            <OrgnlIntrBkSttlmAmt Ccy="NGN">10.00</OrgnlIntrBkSttlmAmt>
            <RtrdIntrBkSttlmAmt Ccy="GHS">10.00</RtrdIntrBkSttlmAmt>
            <RtrdInstdAmt Ccy="GHS">10.00</RtrdInstdAmt>
            <XchgRate>1</XchgRate>
            <ChrgBr>SLEV</ChrgBr>
            <RtrRsnInf>
                <Orgtr>
                    <Id>
                        <OrgId>
                            <Othr>
                                <Id>GH1004</Id>
                                <SchmeNm>
                                    <Prtry>PAPSS</Prtry>
                                </SchmeNm>
                            </Othr>
                        </OrgId>
                    </Id>
                </Orgtr>
```

```
                <Rsn>
                    <Cd>FOCR</Cd>
                </Rsn>
            </RtrRsnInf>
            <OrgnlTxRef>
                <IntrBkSttlmDt>2021-12-27</IntrBkSttlmDt>
                <PmtTpInf>
                    <SvcLvl>
                        <Cd>INST</Cd>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                </PmtTpInf>
                <RmtInf>
                    <Ustrd>Test txn</Ustrd>
                </RmtInf>
                <Dbtr>
                    <Nm>TEST</Nm>
                    <PstlAdr>
                        <Ctry>NG</Ctry>
                        <AdrLine>Lagos Nigeria</AdrLine>
                    </PstlAdr>
                </Dbtr>
                <DbtrAcct>
                    <Id>
                        <Othr>
                            <Id>1012913398019</Id>
                            <SchmeNm>
                                <Cd>BBAN</Cd>
                            </SchmeNm>
                        </Othr>
                    </Id>
                </DbtrAcct>
                <DbtrAgt>
                    <FinInstnId>
                        <BICFI>CBNINGL0</BICFI>
                        <ClrSysMmbId>
                            <MmbId>NG1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
                <CdtrAgt>
                    <FinInstnId>
                        <BICFI>GCBBGHAC</BICFI>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>GH1004</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </CdtrAgt>
                <Cdtr>
                    <Nm>TEST</Nm>
                    <PstlAdr>
                        <Ctry>GH</Ctry>
```

```
                        <AdrLine>Accra Ghana</AdrLine>
                    </PstlAdr>
                </Cdtr>
                <CdtrAcct>
                    <Id>
                        <Othr>
                            <Id>0010001890157</Id>
                            <SchmeNm>
                                <Cd>BBAN</Cd>
                            </SchmeNm>
                        </Othr>
                    </Id>
                </CdtrAcct>
            </OrgnlTxRef>
        </TxInf>
        <SplmtryData>
            <Envlp>
                <AuditInfo>
                    <IP>10.115.0.20</IP>
                    <PC>NIBSS_SERVER</PC>
                </AuditInfo>
            </Envlp>
        </SplmtryData>
    </hdr:PmtRtr>
```

b) output: Message forwarded by PAPSS to Central Bank of Nigeria

```
<hdr:PmtRtr xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.004.001.07">
        <GrpHdr>
            <MsgId>CT0202112270000009301</MsgId>
            <CreDtTm>2021-12-28T15:12:02Z</CreDtTm>
            <NbOfTxs>1</NbOfTxs>
            <TtlRtrdIntrBkSttlmAmt Ccy="NGN">665.00</TtlRtrdIntrBkSttlmAmt>
            <IntrBkSttlmDt>2021-12-28</IntrBkSttlmDt>
            <SttlmInf>
                <SttlmMtd>CLRG</SttlmMtd>
                <ClrSys>
                    <Prtry>PAPSS</Prtry>
                </ClrSys>
            </SttlmInf>
            <InstdAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>NG1001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstdAgt>
        </GrpHdr>
        <TxInf>
            <RtrId>20211228GH100414132500000226</RtrId>
            <OrgnlGrpInf>
                <OrgnlMsgId>20211227NG100114132500000157</OrgnlMsgId>
                <OrgnlMsgNmId>pacs.008.001.07</OrgnlMsgNmId>
            </OrgnlGrpInf>
            <OrgnlEndToEndId>20211227NG</OrgnlEndToEndId>
```

```
<OrgnlTxId>20211227NG100114132500000157</OrgnlTxId>
<OrgnlIntrBkSttlmAmt Ccy="GHS">10.00</OrgnlIntrBkSttlmAmt>
<RtrdIntrBkSttlmAmt Ccy="NGN">665.00</RtrdIntrBkSttlmAmt>
<RtrdInstdAmt Ccy="GHS">10.00</RtrdInstdAmt>
<XchgRate>1</XchgRate>
<ChrgBr>SLEV</ChrgBr>
<RtrRsnInf>
    <Orgtr>
        <Id>
            <OrgId>
                <Othr>
                    <Id>GH1004</Id>
                    <SchmeNm>
                        <Prtry>PAPSS</Prtry>
                    </SchmeNm>
                </Othr>
            </OrgId>
        </Id>
    </Orgtr>
    <Rsn>
        <Cd>FOCR</Cd>
    </Rsn>
</RtrRsnInf>
<OrgnlTxRef>
    <IntrBkSttlmDt>2021-12-27</IntrBkSttlmDt>
    <PmtTpInf>
        <SvcLvl>
            <Cd>INST</Cd>
        </SvcLvl>
        <LclInstrm>
            <Cd>ET</Cd>
        </LclInstrm>
    </PmtTpInf>
    <RmtInf>
        <Ustrd>Test txn</Ustrd>
    </RmtInf>
    <Dbtr>
        <Nm>TEST</Nm>
        <PstlAdr>
            <Ctry>NG</Ctry>
            <AdrLine>Lagos Nigeria</AdrLine>
        </PstlAdr>
    </Dbtr>
    <DbtrAcct>
        <Id>
            <Othr>
                <Id>1012913398019</Id>
                <SchmeNm>
                    <Cd>BBAN</Cd>
                </SchmeNm>
            </Othr>
        </Id>
    </DbtrAcct>
    <DbtrAgt>
        <FinInstnId>
            <BICFI>CBNINGL0</BICFI>
            <ClrSysMmbId>
```

```
                            <MmbId>NG1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
                <CdtrAgt>
                    <FinInstnId>
                        <BICFI>GCBBGHAC</BICFI>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>GH1004</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </CdtrAgt>
                <Cdtr>
                    <Nm>TEST</Nm>
                    <PstlAdr>
                        <Ctry>GH</Ctry>
                        <AdrLine>Accra Ghana</AdrLine>
                    </PstlAdr>
                </Cdtr>
                <CdtrAcct>
                    <Id>
                        <Othr>
                            <Id>0010001890157</Id>
                            <SchmeNm>
                                <Cd>BBAN</Cd>
                            </SchmeNm>
                        </Othr>
                    </Id>
                </CdtrAcct>
            </OrgnlTxRef>
        </TxInf>

<SplmtryData><Envlp><AuditInfo>SECRET</AuditInfo></Envlp></SplmtryData>
    </hdr:PmtRtr>
```

c) reply to the sender: Message sent by PAPSS to GCB Bank PLC notifying the completion fo the payment return flow

```
<hdr:FIToFIPmtStsRpt xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.002.001.07">
        <GrpHdr>
            <MsgId>PS20211227000009401</MsgId>
            <CreDtTm>2021-12-28T15:12:03Z</CreDtTm>
            <InstdAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <MmbId>GH1004</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstdAgt>
        </GrpHdr>
        <OrgnlGrpInfAndSts>
            <OrgnlMsgId>20211228GH100414132500000226</OrgnlMsgId>
            <OrgnlMsgNmId>pacs.004.001.07</OrgnlMsgNmId>
            <GrpSts>ACSC</GrpSts>
```

```
        </OrgnlGrpInfAndSts>
        <TxInfAndSts>
            <StsId>PS20211227000000009401</StsId>
            <OrgnlEndToEndId>20211227NG</OrgnlEndToEndId>
            <OrgnlTxId>20211227NG100114132500000157</OrgnlTxId>
            <AccptncDtTm>2021-12-28T15:12:03Z</AccptncDtTm>
            <OrgnlTxRef>
                <PmtTpInf>
                    <SvcLvl>
                        <Cd>INST</Cd>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                </PmtTpInf>
                <DbtrAgt>
                    <FinInstnId>
                        <BICFI>CBNINGL0</BICFI>
                        <ClrSysMmbId>
                            <MmbId>NG1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
            </OrgnlTxRef>
        </TxInfAndSts>
    </hdr:FIToFIPmtStsRpt>
```

7.1.4. Recall Message – camt.056.007

The format uses the standard ISO schemas in the following structure. A restriction of a single recall is enforced

INDEX		MESSAGE ITEM		XML TAG	MULTIPLICITY
1	Message Root			<FIToFIPmtCxlReq>	[1..1]
2		Group Header		<Assgnmt>	[1..1]
3		Transaction Batch Information		<Undrlyg>	[1..1]
4			Transaction Information	<TxInf>	[1..1]

Group Header

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY	TYPE
1.1.	Group Header	<Assgnmt>	[1..1]	
1.2.	Message Identification	<Id>	[1..1]	Max35Text
1.3.	Instructing Agent	<Assgnr>	[0..1]	
1.4.	Agent	<Agt>	[1..1]	
1.5.	Financial Institution Identification	<FinInstnId>	[1..1]	
1.6.	Financial Institution Identification	<FinInstnId>	[1..1]	
1.7.	Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructing participant
1.8.	Instructed Agent	<Assgne>	[0..1]	
1.9.	Agent	<Agt>	[1..1]	
1.10.	Financial Institution Identification	<FinInstnId>	[1..1]	
1.11.	Financial Institution Identification	<FinInstnId>	[1..1]	
1.12.	Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructed participant
1.13.	Creation Date Time	<CreDtTm>	[1..1]	ISODateTime

Item Details

INDEX	MESSAGE ITEM	XML TAG	MULTI.	TYPE
2.1.	Transaction Information	<TxInf>	[1..1]	
2.2.	Recall Identification	<CxlId>	[1..1]	Max35Text
2.3.	Original Group Information	<OrgnlGrpInf>	[0..1]	
2.4.	Original Message Identification	<OrgnlMsgId>	[1..1]	Max35Text
2.5.	Original Message Name Identification	<OrgnlMsgNmId>	[1..1]	Max35Text
2.6.	Original End To End Identification	<OrgnlEndToEndId>	[1..1]	Max35Text
2.7.	Original Transaction Identification	<OrgnlTxId>	[1..1]	Max35Text
2.8.	Original Interbank Settlement Amount	<OrgnlIntrBkSttlmAmt>	[1..1]	ActiveCurrencyAndAmount
2.9.	Cancellation Reason Information	<CxlRsnInf>	[1..1]	
2.10.	Originator	<Orgtr>	[1..1]	
2.11.	Identification	<Id>	[1..1]	
2.12.	Organization Id	<OrgId>	[1..1]	
2.13.	Other (PAPSS ID)	<Other><Id>	[1..1]	Must also fill <Othr><SchmNm><Prtry> with value PAPSS
2.14.	Reason	<Rsn>	[1..1]	
2.15.	Code	<Cd>	[1..1]	
2.16.	Original Transaction Reference	<OrgnlTxRef>	[1..1]	
2.17.	Amount	<Amt>	[1..1]	

2.18.				Instructed Amount	<InstdAmt>	[1..1]	Instructed amount as in the original payment
2.19.			Settlement Information		<SttlmInf>	[0..1]	
2.20.				Settlement Method	<SttlmMtd>	[1..1]	Fixed value:”CLRG”
2.21.				Clearing System Reference	<ClrSys>	[1..1]	
2.22.					Proprietary	<Prtry>	[1..1]	Fixed value:”PAPSS”
2.23.			Payment Type Information		<PmtTpInf>	[0..1]	
2.24.				Service Level	<SvcLvl>	[0..1]	
2.25.					Code	<Cd>	[1..1]	Fixed value:”INST”
2.26.				Local Instrument	<LclInstrm>	[1..1]	
2.27.					Code	<Cd>	[1..1]	Empty or according to Payment schema defined in PAPSS
2.28.			Remittance Information		<RmtInf>	[0..1]	
2.29.				Unstructured	<Ustrd>	[0..1]	Max140Text
2.30.				Structured	<Strd>	[0..1]	
2.31.			Debtor		<Dbtr>	[1..1]	
2.32.				Name	<Nm>	[1..1]	Max140Text
2.33.				Postal Address	<PstlAdr>	[1..1]	
2.34.					Country	<Ctry>	[1..1]	2-letter Country Code
2.35.					Address Line	<AdrLine>	[1..7]	Max70Text

2.36.				Contact Details		<CtctDtls>	[0..1]	
2.37.					Phone Number	<PhneNb>	[1..1]	PhoneNumber
2.38.					Email Address	<EmailAdr>	[1..1]	Max2048Text
2.39.					Other Information	<Othr>	[0..1]	Max35Text
2.40.			Debtor Account			<DbtrAcct>	[1..1]	
2.41.				Identification		<Id>	[1..1]	
2.42.					IBAN	<IBAN>	[0..1]	
2.43.					BBAN	<Othr><Id> + <Othr><SchmeNm><Cd>	[0..1]	Debtor Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = “BBAN”
2.44.			Debtor Agent			<DbtrAgt>	[1..1]	
2.45.				Financial Institution Identification		<FinInstnId>	[1..1]	
2.46.					Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Debtor participant
2.47.			Creditor Agent			<CdtrAgt>	[1..1]	
2.48.				Financial Institution Id		<FinInstId>	[1..1]	
2.49.					Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Creditor participant
2.50.			Creditor			<Cdtr>	[1..1]	

2.51.				Name		<Nm>	[1..1]	Max140Text
2.52.				Postal Address		<PstlAdr>	[1..1]	
2.53.					Country	<Ctry>	[1..1]	2-letter Country Code
2.54.					Address Line	<AdrLine>	[1..7]	Max70Text
2.55.				Contact Details		<CtctDtls>	[0..1]	
2.56.					Phone Number	<PhneNb>	[1..1]	PhoneNumber
2.57.					Email Address	<EmailAdr>	[1..1]	Max2048Text
2.58.					Other Information	<Othr>	[0..1]	Max35Text
2.59.			Creditor Account			<CdtrAcct>	[1..1]	
2.60.				Identification		<Id>	[1..1]	
2.61.					IBAN	<IBAN>	[0..1]	
2.62.					BBAN	<Othr><Id> + <Othr><SchmeNm><Cd>	[0..1]	Debtor Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = “BBAN”

Sample

A Payment Recall message sent by Central Bank of Nigeria (PAPSS Id: NG1001) to GCB Bank PLC requesting a payment return, because the original payment was sent by mistake (DUPL=duplicate payment).

a) Input: Message sent by Central Bank of Nigeria to PAPSS

```
<hdr:FIToFIPmtCxlReq xmlns="urn:iso:std:iso:20022:tech:xsd:camt.056.001.06">
        <Assgnmt>
            <Id>20211227NG100114132500000195</Id>
            <Assgnr>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgnr>
            <Assgne>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>XA0001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgne>
            <CreDtTm>2021-12-27T19:30:36Z</CreDtTm>
        </Assgnmt>
        <Undrlyg>
            <TxInf>
                <CxlId>20211227NG100114132500000195</CxlId>
                <OrgnlGrpInf>
                    <OrgnlMsgId>20211227NG100114132500000157</OrgnlMsgId>
                    <OrgnlMsgNmId>camt.056.001.06</OrgnlMsgNmId>
                </OrgnlGrpInf>
                <OrgnlEndToEndId>20211227NG</OrgnlEndToEndId>
                <OrgnlTxId>20211227NG100114132500000157</OrgnlTxId>
                <OrgnlIntrBkSttlmAmt Ccy="NGN">10.00</OrgnlIntrBkSttlmAmt>
                <OrgnlIntrBkSttlmDt>2021-12-27</OrgnlIntrBkSttlmDt>
                <CxlRsnInf>
                    <Orgtr>
                        <Id>
                            <OrgId>
                                <Othr>
                                    <Id>NG1001</Id>
                                    <SchmeNm>
                                        <Prtry>PAPSS</Prtry>
```

```
                                </SchmeNm>
                            </Othr>
                        </OrgId>
                    </Id>
                </Orgtr>
                <Rsn>
                    <Cd>DUPL</Cd>
                </Rsn>
            </CxlRsnInf>
            <OrgnlTxRef>
                <Amt>
                    <InstdAmt Ccy="GHS">10.00</InstdAmt>
                </Amt>
                <PmtTpInf>
                    <SvcLvl>
                        <Cd>INST</Cd>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                </PmtTpInf>
                <RmtInf>
                    <Ustrd>Test txn</Ustrd>
                </RmtInf>
                <Dbtr>
                    <Nm>TEST/C</Nm>
                    <PstlAdr>
                        <Ctry>NG</Ctry>
                        <AdrLine>Lagos Nigeria</AdrLine>
                    </PstlAdr>
                </Dbtr>
                <DbtrAcct>
                    <Id>
                        <Othr>
                            <Id>1012913398019</Id>
                            <SchmeNm>
                                <Cd>BBAN</Cd>
                            </SchmeNm>
                        </Othr>
                    </Id>
                </DbtrAcct>
                <DbtrAgt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
                <CdtrAgt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
```

```
                                <MmbId>GH1004</MmbId>
                            </ClrSysMmbId>
                        </FinInstnId>
                    </CdtrAgt>
                    <Cdtr>
                        <Nm>TEST</Nm>
                        <PstlAdr>
                            <Ctry>GH</Ctry>
                            <AdrLine>Accra Ghana</AdrLine>
                        </PstlAdr>
                    </Cdtr>
                    <CdtrAcct>
                        <Id>
                            <Othr>
                                <Id>0010001890157</Id>
                                <SchmeNm>
                                    <Cd>BBAN</Cd>
                                </SchmeNm>
                            </Othr>
                        </Id>
                    </CdtrAcct>
                </OrgnlTxRef>
            </TxInf>
        </Undrlyg>
        <SplmtryData>
            <Envlp>
                <AuditInfo>
                    <IP>10.115.0.20</IP>
                    <PC>NIBSS_SERVER</PC>
                </AuditInfo>
            </Envlp>
        </SplmtryData>
    </hdr:FIToFIPmtCxlReq>
```

b. output: Message forwarded by PAPSS to GCB Bank PLC

```
<hdr:FIToFIPmtCxlReq xmlns="urn:iso:std:iso:20022:tech:xsd:camt.056.001.06">
        <Assgnmt>
            <Id>CT0202112260000009901</Id>
            <Assgnr>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>XA0001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgnr>
            <Assgne>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
```

```
                        <MmbId>GH1004</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </Agt>
        </Assgne>
        <CreDtTm>2021-12-27T19:30:41Z</CreDtTm>
    </Assgnmt>
    <Undrlyg>
        <TxInf>
            <CxlId>20211227NG100114132500000195</CxlId>
            <OrgnlGrpInf>
                <OrgnlMsgId>20211227NG100114132500000157</OrgnlMsgId>
                <OrgnlMsgNmId>camt.056.001.06</OrgnlMsgNmId>
            </OrgnlGrpInf>
            <OrgnlEndToEndId>20211227NG</OrgnlEndToEndId>
            <OrgnlTxId>20211227NG100114132500000157</OrgnlTxId>
            <OrgnlIntrBkSttlmAmt Ccy="GHS">0.10</OrgnlIntrBkSttlmAmt>
            <OrgnlIntrBkSttlmDt>2021-12-27</OrgnlIntrBkSttlmDt>
            <CxlRsnInf>
                <Orgtr>
                    <Id>
                        <OrgId>
                            <Othr>
                                <Id>NG1001</Id>
                                <SchmeNm>
                                    <Prtry>PAPSS</Prtry>
                                </SchmeNm>
                            </Othr>
                        </OrgId>
                    </Id>
                </Orgtr>
                <Rsn>
                    <Cd>CUST</Cd>
                </Rsn>
            </CxlRsnInf>
            <OrgnlTxRef>
                <Amt>
                    <InstdAmt Ccy="NGN">10.00</InstdAmt>
                </Amt>
                <PmtTpInf>
                    <SvcLvl>
                        <Cd>INST</Cd>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                </PmtTpInf>
                <RmtInf>
                    <Ustrd>Test txn</Ustrd>
                </RmtInf>
                <Dbtr>
                    <Nm>TEST/C</Nm>
                    <PstlAdr>
                        <Ctry>NG</Ctry>
                        <AdrLine>Lagos Nigeria</AdrLine>
                    </PstlAdr>
                </Dbtr>
```

```
                    <DbtrAcct>
                        <Id>
                            <Othr>
                                <Id>1012913398019</Id>
                                <SchmeNm>
                                    <Cd>BBAN</Cd>
                                </SchmeNm>
                            </Othr>
                        </Id>
                    </DbtrAcct>
                    <DbtrAgt>
                        <FinInstnId>
                            <ClrSysMmbId>
                                <ClrSysId>
                                    <Prtry>PAPSS</Prtry>
                                </ClrSysId>
                                <MmbId>NG1001</MmbId>
                            </ClrSysMmbId>
                        </FinInstnId>
                    </DbtrAgt>
                    <CdtrAgt>
                        <FinInstnId>
                            <ClrSysMmbId>
                                <ClrSysId>
                                    <Prtry>PAPSS</Prtry>
                                </ClrSysId>
                                <MmbId>GH1004</MmbId>
                            </ClrSysMmbId>
                        </FinInstnId>
                    </CdtrAgt>
                    <Cdtr>
                        <Nm>TEST</Nm>
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                            <Ctry>GH</Ctry>
                            <AdrLine>Accra Ghana</AdrLine>
                        </PstlAdr>
                    </Cdtr>
                    <CdtrAcct>
                        <Id>
                            <Othr>
                                <Id>0010001890157</Id>
                                <SchmeNm>
                                    <Cd>BBAN</Cd>
                                </SchmeNm>
                            </Othr>
                        </Id>
                    </CdtrAcct>
                </OrgnlTxRef>
            </TxInf>
        </Undrlyg>
        <SplmtryData>
            <Envlp>
                <AuditInfo>
                    <IP>10.115.0.20</IP>
                    <PC>NIBSS_SERVER</PC>
                </AuditInfo>
            </Envlp>
```

```
        </SplmtryData>
    </hdr:FIToFIPmtCxlReq>
```

c. reply to message sender: Confirmation sent to Central Bank of Nigeria from PAPSS

```
<hdr:FIToFIPmtStsRpt xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.002.001.07">
        <GrpHdr>
            <MsgId>PS202112260000010001</MsgId>
            <CreDtTm>2021-12-27T19:30:41Z</CreDtTm>
            <InstdAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <MmbId>NG1001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstdAgt>
        </GrpHdr>
        <OrgnlGrpInfAndSts>
            <OrgnlMsgId>20211227NG100114132500000195</OrgnlMsgId>
            <OrgnlMsgNmId>camt.056.001.06</OrgnlMsgNmId>
            <GrpSts>ACCP</GrpSts>
        </OrgnlGrpInfAndSts>
        <TxInfAndSts>
            <StsId>PS202112260000010001</StsId>
            <OrgnlEndToEndId>20211227NG</OrgnlEndToEndId>
            <OrgnlTxId>20211227NG100114132500000157</OrgnlTxId>
            <AccptncDtTm>2021-12-27T19:30:41Z</AccptncDtTm>
            <OrgnlTxRef>
                <PmtTpInf>
                    <SvcLvl>
                        <Cd>INST</Cd>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                </PmtTpInf>
                <DbtrAgt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
            </OrgnlTxRef>
        </TxInfAndSts>
    </hdr:FIToFIPmtStsRpt>
```

7.1.5. Negative Answer to Recal – camt.029.001.07

The format uses the standard ISO schemas in the following structure. A restriction of a single negative answer to recall is enforced

INDEX		MESSAGE ITEM	XML TAG	MULT.	TYPE

1	Message Root			<RsltnOfInvstgtn>	[1..1]	
2		Group Header		<Assgnmt>	[1..1]	
3		Status		<Sts>	[1..1]	
4			Conf	<Conf>	[1..1]	Only code RJCR is accepted
5		Transaction Batch Information		<CxlDtls>	[1..1]	
6			Transaction Information	<TxInfAndSts>	[1..1]	

Group Header

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY	TYPE
1.0	Group Header	<Assgnmt>	[1..1]	
1.1	Message Identification	<Id>	[1..1]	Max35Text
1.2	Instructing Agent	<Assgnr>	[0..1]	
1.3	Agent	<Agt>	[1..1]	
1.4	Financial Institution Identification	<FinInstnId>	[1..1]	
1.5	Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructing participant
1.6	Instructed Agent	<Assgne>	[0..1]	
1.7	Agent	<Agt>	[1..1]	
1.8	Financial Institution Identification	<FinInstnId>	[1..1]	
1.9	Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructed participant
1.10	Creation Date Time	<CreDtTm>	[1..1]	ISODateTime

Item Details

INDEX	MESSAGE ITEM	XML TAG	MULTI.	TYPE
2.1.	Transaction Information	<TxInfAndSts>	[1..1]	
2.2.	Recall NAK Identification	<CxlStsId>	[1..1]	Max35Text

2.3.		Original Group Information					<OrgnlGrpInf>	[0..1]	
2.4.			Original Message Identification				<OrgnlMsgId>	[1..1]	Max35Text
2.5.			Original Message Name Identification				<OrgnlMsgNmId>	[1..1]	Max35Text
2.6.		Original End To End Identification					<OrgnlEndToEndId>	[1..1]	Max35Text
2.7.		Original Transaction Identification					<OrgnlTxId>	[1..1]	Max35Text
2.8.		Cancellation status					<TxCxlSts>	[1..1]	RJCR
2.9.		Cancellation Status Reason Information					<CxlStsRsnInf >	[1..1]	
2.10.			Originator				<Orgtr>	[1..1]	
2.11.				Identification			<Id>	[1..1]	
2.12.					Organization Id		<OrgId>	[1..1]	
2.13.						Other (PAPSS ID)	<Other><Id>	[1..1]	Must also fill <Othr><SchmNm><Prtry> with value PAPSS
2.14.			Reason				<Rsn>	[1..1]	
2.15.				Code			<Cd>	[1..1]	
2.16.		Original Transaction Reference					<OrgnlTxRef>	[1..1]	
2.17.			Interbank Settlement Amount				<IntrBkSttlmAmt>	[1..1]	ActiveCurrencyAndAmount
2.18.			Amount				<Amt>	[1..1]	
2.19.				Instructed Amount			<InstdAmt>	[1..1]	Instructed amount as in the original payment
2.20.			Interbank Settlement Date				<IntrBkSttlmDt>	[1..1]	ISODate

2.21.			Settlement Information			<SttlmInf>	[0..1]	
2.22.				Settlement Method		<SttlmMtd>	[1..1]	Fixed value:”CLRG”
2.23.				Clearing System Reference		<ClrSys>	[1..1]	
2.24.					Proprietary	<Prtry>	[1..1]	Fixed value:”PAPSS”
2.25.			Payment Type Information			<PmtTpInf>	[0..1]	
2.26.				Service Level		<SvcLvl>	[0..1]	
2.27.					Code	<Cd>	[1..1]	Fixed value:”INST”
2.28.				Local Instrument		<LclInstrm>	[1..1]	
2.29.					Code	<Cd>	[1..1]	Empty or according to Payment schema defined in PAPSS
2.30.			Remittance Information			<RmtInf>	[0..1]	
2.31.				Unstructured		<Ustrd>	[1..1]	Max140Text
2.32.				Structured		<Strd>	[0..1]	
2.33.			Debtor			<Dbtr>	[1..1]	
2.34.				Name		<Nm>	[1..1]	Max140Text
2.35.				Postal Address		<PstlAdr>	[1..1]	
2.36.					Country	<Ctry>	[1..1]	2-letter Country Code
2.37.					Address Line	<AdrLine>	[1..7]	Max70Text
2.38.				Contact Details		<CtctDtls>	[0..1]	

2.39.					Phone Number	<PhneNb>	[1..1]	PhoneNumber
2.40.					Email Address	<EmailAdr>	[1..1]	Max2048Text
2.41.					Other Information	<Othr>	[0..1]	Max35Text
2.42.			Debtor Account			<DbtrAcct>	[1..1]	
2.43.				Identification		<Id>	[1..1]	
2.44.					IBAN	<IBAN>	[1..1]	
2.45.					BBAN	<Othr><Id> + <Othr><SchmeNm><Cd>	[0..1]	Debtor Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = “BBAN”
2.46.			Debtor Agent			<DbtrAgt>	[1..1]	
2.47.				Financial Institution Identification		<FinInstnId>	[1..1]	
2.48.					Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Debtor participant
2.49.			Creditor Agent			<CdtrAgt>	[1..1]	
2.50.				Financial Institution Id		<FinInstId>	[1..1]	
2.51.					Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Creditor participant
2.52.			Creditor			<Cdtr>	[1..1]	
2.53.				Name		<Nm>	[1..1]	Max140Text

2.54.				Postal Address		<PstlAdr>	[1..1]	
2.55.					Country	<Ctry>	[1..1]	2-letter Country Code
2.56.					Address Line	<AdrLine>	[1..7]	Max70Text
2.57.				Contact Details		<CtctDtls>	[0..1]	
2.58.					Phone Number	<PhneNb>	[1..1]	PhoneNumber
2.59.					Email Address	<EmailAdr>	[1..1]	Max2048Text
2.60.					Other Information	<Othr>	[0..1]	Max35Text
2.61.			Creditor Account			<CdtrAcct>	[1..1]	
2.62.				Identification		<Id>	[1..1]	
2.63.					IBAN	<IBAN>	[1..1]	
2.64.					BBAN	<Othr><Id> + <Othr><SchmeNm><Cd>	[0..1]	Debtor Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = “BBAN”

Sample

This flow represents the rejection by GCB Bank PLC of the payment recall requested by Central Bank of Nigeria. Note that this message refers to the original payment (pacs.008) and not the recall request (camt.056).

a) Input: Message sent by Barclays Ghana to PAPSS

```
<hdr:RsltnOfInvstgtn xmlns="urn:iso:std:iso:20022:tech:xsd:camt.029.001.07">
        <Assgnmt>
            <Id>20211228GH100414132500000240</Id>
            <Assgnr>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>GH1004</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgnr>
            <Assgne>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>XA0001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgne>
            <CreDtTm>2021-12-28T21:12:42Z</CreDtTm>
        </Assgnmt>
        <Sts>
            <Conf>RJCR</Conf>
        </Sts>
        <CxlDtls>
            <TxInfAndSts>
                <CxlStsId>20211228GH100414132500000240</CxlStsId>
                <OrgnlGrpInf>
                    <OrgnlMsgId>20211227NG100114132500000157</OrgnlMsgId>
                    <OrgnlMsgNmId>pacs.008.001.07</OrgnlMsgNmId>
                </OrgnlGrpInf>
                <OrgnlEndToEndId>20211227NG</OrgnlEndToEndId>
                <OrgnlTxId>20211227NG100114132500000157</OrgnlTxId>
                <TxCxlSts>RJCR</TxCxlSts>
                <CxlStsRsnInf>
                    <Orgtr>
                        <Id>
                            <OrgId>
                                <Othr>
                                    <Id>GH1004</Id>
```

```
                                <SchmeNm>
                                    <Prtry>PAPSS</Prtry>
                                </SchmeNm>
                            </Othr>
                        </OrgId>
                    </Id>
                </Orgtr>
                <Rsn>
                    <Cd>CUST</Cd>
                </Rsn>
            </CxlStsRsnInf>
            <OrgnlTxRef>
                <IntrBkSttlmAmt Ccy="GHS">10.00</IntrBkSttlmAmt>
                <Amt>
                    <InstdAmt Ccy="NGN">10.00</InstdAmt>
                </Amt>
                <IntrBkSttlmDt>2021-12-27</IntrBkSttlmDt>
                <PmtTpInf>
                    <SvcLvl>
                        <Prtry>INST</Prtry>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                </PmtTpInf>
                <RmtInf>
                    <Ustrd>Test txn</Ustrd>
                </RmtInf>
                <Dbtr>
                    <Nm>TEST</Nm>
                    <PstlAdr>
                        <Ctry>NG</Ctry>
                        <AdrLine>Lagos Nigeria</AdrLine>
                    </PstlAdr>
                </Dbtr>
                <DbtrAcct>
                    <Id>
                        <Othr>
                            <Id>${orgnl.sender.acct_no)</Id>
                            <SchmeNm>
                                <Cd>BBAN</Cd>
                            </SchmeNm>
                        </Othr>
                    </Id>
                </DbtrAcct>
                <DbtrAgt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
                <CdtrAgt>
                    <FinInstnId>
```

```
                            <ClrSysMmbId>
                                <ClrSysId>
                                    <Prtry>PAPSS</Prtry>
                                </ClrSysId>
                                <MmbId>GH1004</MmbId>
                            </ClrSysMmbId>
                        </FinInstnId>
                    </CdtrAgt>
                    <Cdtr>
                        <Nm>TEST</Nm>
                        <PstlAdr>
                            <Ctry>GH</Ctry>
                            <AdrLine>Accra Ghana</AdrLine>
                        </PstlAdr>
                    </Cdtr>
                    <CdtrAcct>
                        <Id>
                            <Othr>
                                <Id>0010001890157</Id>
                                <SchmeNm>
                                    <Cd>BBAN</Cd>
                                </SchmeNm>
                            </Othr>
                        </Id>
                    </CdtrAcct>
                </OrgnlTxRef>
            </TxInfAndSts>
        </CxlDtls>
    </hdr:RsltnOfInvstgtn>
```

b) Output: message forwarded by PAPSS to Central Bank of Nigeria

```
<hdr:RsltnOfInvstgtn xmlns="urn:iso:std:iso:20022:tech:xsd:camt.029.001.07">
        <Assgnmt>
            <Id>CT0202112270000009701</Id>
            <Assgnr>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>XA0001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgnr>
            <Assgne>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
```

```
            </Assgne>
            <CreDtTm>2021-12-28T21:12:46Z</CreDtTm>
        </Assgnmt>
        <Sts>
            <Conf>RJCR</Conf>
        </Sts>
        <CxlDtls>
            <TxInfAndSts>
                <CxlStsId>20211228GH100414132500000240</CxlStsId>
                <OrgnlGrpInf>
                    <OrgnlMsgId>20211227NG100114132500000157</OrgnlMsgId>
                    <OrgnlMsgNmId>pacs.008.001.07</OrgnlMsgNmId>
                </OrgnlGrpInf>
                <OrgnlEndToEndId>20211227NG</OrgnlEndToEndId>
                <OrgnlTxId>20211227NG100114132500000157</OrgnlTxId>
                <TxCxlSts>RJCR</TxCxlSts>
                <CxlStsRsnInf>
                    <Orgtr>
                        <Id>
                            <OrgId>
                                <Othr>
                                    <Id>GH1004</Id>
                                    <SchmeNm>
                                        <Prtry>PAPSS</Prtry>
                                    </SchmeNm>
                                </Othr>
                            </OrgId>
                        </Id>
                    </Orgtr>
                    <Rsn>
                        <Cd>CUST</Cd>
                    </Rsn>
                </CxlStsRsnInf>
                <OrgnlTxRef>
                    <IntrBkSttlmAmt Ccy="NGN">665.00</IntrBkSttlmAmt>
                    <Amt>
                        <InstdAmt Ccy="GHS">10.00</InstdAmt>
                    </Amt>
                    <IntrBkSttlmDt>2021-12-27</IntrBkSttlmDt>
                    <PmtTpInf>
                        <SvcLvl>
                            <Prtry>INST</Prtry>
                        </SvcLvl>
                        <LclInstrm>
                            <Cd>ET</Cd>
                        </LclInstrm>
                    </PmtTpInf>
                    <RmtInf>
                        <Ustrd>Test txn</Ustrd>
                    </RmtInf>
                    <Dbtr>
                        <Nm>TEST</Nm>
                        <PstlAdr>
                            <Ctry>NG</Ctry>
                            <AdrLine>Lagos Nigeria</AdrLine>
                        </PstlAdr>
                    </Dbtr>
```

```
                    <DbtrAcct>
                        <Id>
                            <Othr>
                                <Id>${orgnl.sender.acct_no)</Id>
                                <SchmeNm>
                                    <Cd>BBAN</Cd>
                                </SchmeNm>
                            </Othr>
                        </Id>
                    </DbtrAcct>
                    <DbtrAgt>
                        <FinInstnId>
                            <ClrSysMmbId>
                                <ClrSysId>
                                    <Prtry>PAPSS</Prtry>
                                </ClrSysId>
                                <MmbId>NG1001</MmbId>
                            </ClrSysMmbId>
                        </FinInstnId>
                    </DbtrAgt>
                    <CdtrAgt>
                        <FinInstnId>
                            <ClrSysMmbId>
                                <ClrSysId>
                                    <Prtry>PAPSS</Prtry>
                                </ClrSysId>
                                <MmbId>GH1004</MmbId>
                            </ClrSysMmbId>
                        </FinInstnId>
                    </CdtrAgt>
                    <Cdtr>
                        <Nm>TEST</Nm>
                        <PstlAdr>
                            <Ctry>GH</Ctry>
                            <AdrLine>Accra Ghana</AdrLine>
                        </PstlAdr>
                    </Cdtr>
                    <CdtrAcct>
                        <Id>
                            <Othr>
                                <Id>0010001890157</Id>
                                <SchmeNm>
                                    <Cd>BBAN</Cd>
                                </SchmeNm>
                            </Othr>
                        </Id>
                    </CdtrAcct>
                </OrgnlTxRef>
            </TxInfAndSts>
        </CxlDtls>
    </hdr:RsltnOfInvstgtn>
```

c. reply to the sender: Payment status report sent back by PAPSS to GCB Bank PLC

```
    <hdr:FIToFIPmtStsRpt
xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.002.001.07">
        <GrpHdr>
            <MsgId>PS202112270000009801</MsgId>
```

```
            <CreDtTm>2021-12-28T21:12:46Z</CreDtTm>
            <InstdAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <MmbId>GH1004</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstdAgt>
        </GrpHdr>
        <OrgnlGrpInfAndSts>
            <OrgnlMsgId>20211228GH100414132500000240</OrgnlMsgId>
            <OrgnlMsgNmId>camt.029.001.07</OrgnlMsgNmId>
            <GrpSts>ACCP</GrpSts>
        </OrgnlGrpInfAndSts>
        <TxInfAndSts>
            <StsId>PS202112270000009801</StsId>
            <OrgnlEndToEndId>20211227NG</OrgnlEndToEndId>
            <OrgnlTxId>20211227NG100114132500000157</OrgnlTxId>
            <AccptncDtTm>2021-12-28T21:12:46Z</AccptncDtTm>
            <OrgnlTxRef>
                <PmtTpInf>
                    <SvcLvl>
                        <Prtry>INST</Prtry>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                </PmtTpInf>
                <DbtrAgt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
            </OrgnlTxRef>
        </TxInfAndSts>
    </hdr:FIToFIPmtStsRpt>
```

7.1.6. Request To Pay – pain.013.001.07

The format uses the standard ISO schemas in the following structure.

INDEX		MESSAGE ITEM	XML TAG	MULTIPLICITY
1	Message Root		<CdtrPmtActvtnReq>	[1..1]
2		Group Header	<GrpHdr>	[1..1]
3		Payment Information	<PmtInf>	[1..1]

Group Header

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY	TYPE
1.0	Group Header	<GrpHdr>	[1..1]	
1.1	Message Identification	<MsgId>	[1..1]	Max35Text
1.2	Creation Date Time	<CreDtTm>	[1..1]	ISODateTime
1.3	Number of Transactions	<NbOfTxs>	[1..1]	1
1.4	Initiating Party	<InitgPty>	[1..1]	
1.5	Name	<Nm>	[0..1]	
1.6	Identification	<Id>	[0..1]	
1.7	OrgId	<OrgId>	[1..1]	
1.8	Other	<Othr>	[1..1]	
1.9	Id	<Id>	[1..1]	PAPSS Id
1.10	Scheme name	<SchmeNm>	[0..1]	
1.11	Proprietary	<Prtry>	[1..1]	Constant: PAPSS

Item Details

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY	TYPE
2.1	Payment Information	<PmtInf>	[1..1]	
2.2	Payment Information Identification	<PmtInfId>	[1..1]	Max35Text
2.3	Payment Method	<PmtMtd>	[1..1]	Fixed text:"TRF"
2.4	Payment Type Information	<PmtTpInf>	[0..1]	
2.5	Service Level	<SvcLvl>	[0..1]	
2.7	Code	<Cd>	[1..1]	Fixed value:"INST"
2.8	Local Instrument	<LclInstrm>	[0..1]	
2.9	Code	<Cd>	[1..1]	Empty or according to Payment schema defined in PAPSS
2.10	Category Purpose	<CtgyPurp>	[0..1]	Standard ISO 20022 codes, or proprietary (non-standard) value
2.11	Requested Execution Date	<ReqdExctnDt>	[1..1]	
2.12	Date	<Dt>	[1..1]	ISODate
2.13	Debtor	<Dbtr>	[1..1]	
2.14	Name	<Nm>	[0..1]	Max140Text
2.15	Postal Address	<PstlAdr>	[1..1]	
2.16	Country	<Ctry>	[1..1]	2-letter Country Code
2.17	Address Line	<AdrLine>	[1..7]	Max70Text
2.18	Debtor Account	<DbtrAcct>	[1..1]	
2.19	Identification	<Id>	[1..1]	
2.20	IBAN	<IBAN>	[1..1]	IBAN2007Identifier
2.21	BBAN	<Othr><Id> + <Othr><SchmeNm><Cd>	[0..1]	Debtor Account identification as regular bank account number

								Othr/Id = account number Othr/SchmeNm/Cd = “BBAN”
2.22		Debtor Agent				<DbtrAgt>	[1..1]	
2.23			Financial Institution Identification			<FinInstnId>	[1..1]	
2.24				Clearing System Member Id		<ClrSysMmbId>	[1..1]	PAPSS ID of the Debtor participant
2.25		Ultimate Debtor				<UltmtDbtr>	[0..1]	
2.26			Name			<Nm>	[0..1]	Max140Text
2.27		Credit Transfer Transaction				<CdtTrfTx>	[1..1]	
2.28			Payment Identification			<PmtId>	[1..1]	
2.29				Instruction Identification		<InstrId>	[0..1]	Max35Text
2.30				End to End Id		<EndToEndI>	[1..1]	Max35Text
2.31			Amount			<Amt>		
2.32				Instructed Amount		<InstdAmt>	[1..1]	ActiveOrHistoricCurrencyAndAmount
2.33			Charge Bearer			<ChrgBr>	[1..1]	Fixed text “SLEV”
2.34			Creditor Agent			<CdtrAgt>	[0..1]	
2.35				Financial Institution Identification		<FinInstnId>	[1..1]	
2.36					Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Creditor participant
2.37			Creditor			<Cdtr>	[0..1]	
2.38				Name		<Nm>	[0..1]	Max140Text
2.39				Postal Address		<PstlAdr>	[1..1]	
2.40					Country	<Ctry>	[1..1]	2-letter Country Code
2.41					Address Line	<AdrLine>	[1..7]	Max70Text

2.42			Creditor Account								<CdtrAcct>	[0..1]	
2.43				Identification							<Id>	[1..1]	
2.44					IBAN						<IBAN>	[1..1]	IBAN2007Identifier
2.45					BBAN						<Othr><Id> + <Othr><SchmeNm><Cd>	[0..1]	Creditor Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = “BBAN”
2.46			Ultimate Creditor								<UltmtCdtr>	[0..1]	
2.47				Name							<Nm>	[0..1]	Max140Text
2.48			Related Remittance Information								<RltdRmtInf>	[0..1]	
2.49				Remittance Identification							<RmtId>	[0..1]	Max140Text
2.50				Remittance Location Details							<RmtLctnDtls>	[0..n]	
2.51					Method						<Mtd>	[1..1]	Fixed text: “FAXI”, “EDIC”, “URID”, “EMAL”, “POST”, “SMSM”
2.52					Electronic Address						<ElctrncAdr>	[0..1]	Max2048Text
2.53			Remittance Information								<RmtInf>	[0..1]	
2.54				Unstructured							<Ustrd>	[0..1]	Max140Text
2.55				Strunctured							<Strd>	[1..1]	
2.56					Refered Amount						<RfrdDocAmt>	[1..1]	
2.57						Due Payment Amount					<DuePyblAmt>	[1..1]	Due payment amount in the in Creditor currency

Sample

This flow represents request to pay sent by Bank of Ghana to Central Bank of Nigeria.

a) Input: Message sent by Bank of Ghana to PAPSS

```
<hdr:CdtrPmtActvtnReq
xmlns="urn:iso:std:iso:20022:tech:xsd:pain.013.001.07">
        <GrpHdr>
            <MsgId>20210616GH100100000000000000001261547</MsgId>
            <CreDtTm>2021-06-16T10:15:30Z</CreDtTm>
            <NbOfTxs>1</NbOfTxs>
            <InitgPty>
                <Id>
                    <OrgId>
                        <Othr>
                            <Id>GH1001</Id>
                            <SchmeNm>
                                <Prtry>PAPSS</Prtry>
                            </SchmeNm>
                        </Othr>
                    </OrgId>
                </Id>
            </InitgPty>
        </GrpHdr>
        <PmtInf>
            <PmtInfId>20210616GH100100000000000000001261547</PmtInfId>
            <PmtMtd>TRF</PmtMtd>
            <PmtTpInf>
                <SvcLvl>
                    <Cd>INST</Cd>
                </SvcLvl>
                <LclInstrm>
                    <Cd>AGR</Cd>
                </LclInstrm>
            </PmtTpInf>
            <ReqdExctnDt>
                <Dt>2021-07-06</Dt>
            </ReqdExctnDt>
            <Dbtr>
                <Nm>Test Testing</Nm>
                <PstlAdr>
                    <Ctry>NG</Ctry>
                    <AdrLine>1, Wright Street</AdrLine>
                </PstlAdr>
            </Dbtr>
            <DbtrAcct>
                <Id>
                    <Othr>
                        <Id>65AC100010002</Id>
                        <SchmeNm>
                            <Cd>BBAN</Cd>
                        </SchmeNm>
                    </Othr>
                </Id>
            </DbtrAcct>
            <DbtrAgt>
```

```
                <FinInstnId>
                    <BICFI>CBNINGL0</BICFI>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>NG1001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </DbtrAgt>
            <CdtTrfTx>
                <PmtId>
                    <InstrId>20210616GH10010000000000000001261547</InstrId>

<EndToEndId>20210616GH10010000000000000001261547</EndToEndId>
                </PmtId>
                <Amt>
                    <InstdAmt Ccy="NGN">155419.42</InstdAmt>
                </Amt>
                <ChrgBr>SLEV</ChrgBr>
                <CdtrAgt>
                    <FinInstnId>
                        <BICFI>BAGHGHA0</BICFI>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>GH1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </CdtrAgt>
                <Cdtr>
                    <Nm>Receive Test</Nm>
                    <PstlAdr>
                        <Ctry>GH</Ctry>
                        <AdrLine>1, Kumasi road</AdrLine>
                    </PstlAdr>
                </Cdtr>
                <CdtrAcct>
                    <Id>
                        <Othr>
                            <Id>65AC100010002</Id>
                            <SchmeNm>
                                <Cd>BBAN</Cd>
                            </SchmeNm>
                        </Othr>
                    </Id>
                </CdtrAcct>
                <RmtInf>
                    <Strd>
                        <RfrdDocAmt>
                            <DuePyblAmt Ccy="GHS">2450.00</DuePyblAmt>
                        </RfrdDocAmt>
                    </Strd>
                </RmtInf>
            </CdtTrfTx>
        </PmtInf>
```

```
    </hdr:CdtrPmtActvtnReq>
```

b) Output messages sent by PAPSS to Central Bank of Nigeria

```
<hdr:CdtrPmtActvtnReq
xmlns="urn:iso:std:iso:20022:tech:xsd:pain.013.001.07">
        <GrpHdr>
            <MsgId>CT0202105040000089704</MsgId>
            <CreDtTm>2021-06-16T10:15:30Z</CreDtTm>
            <NbOfTxs>1</NbOfTxs>
            <InitgPty>
                <Id>
                    <OrgId>
                        <Othr>
                            <Id>GH1001</Id>
                            <SchmeNm>
                                <Prtry>PAPSS</Prtry>
                            </SchmeNm>
                        </Othr>
                    </OrgId>
                </Id>
            </InitgPty>
        </GrpHdr>
        <PmtInf>
            <PmtInfId>20210616GH1001000000000000001261547</PmtInfId>
            <PmtMtd>TRF</PmtMtd>
            <PmtTpInf>
                <SvcLvl>
                    <Cd>INST</Cd>
                </SvcLvl>
                <LclInstrm>
                    <Cd>AGR</Cd>
                </LclInstrm>
            </PmtTpInf>
            <ReqdExctnDt>
                <Dt>2021-07-06</Dt>
            </ReqdExctnDt>
            <Dbtr>
                <Nm>Test Testing</Nm>
                <PstlAdr>
                    <Ctry>NG</Ctry>
                    <AdrLine>1, Wright Street</AdrLine>
                </PstlAdr>
            </Dbtr>
            <DbtrAcct>
                <Id>
                    <Othr>
                        <Id>65AC100010002</Id>
                        <SchmeNm>
                            <Cd>BBAN</Cd>
                        </SchmeNm>
                    </Othr>
                </Id>
            </DbtrAcct>
            <DbtrAgt>
                <FinInstnId>
                    <BICFI>CBNINGL0</BICFI>
                    <ClrSysMmbId>
```

```
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>NG1001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </DbtrAgt>
            <CdtTrfTx>
                <PmtId>
                    <InstrId>20210616GH1001000000000000001261547</InstrId>

<EndToEndId>20210616GH1001000000000000001261547</EndToEndId>
                </PmtId>
                <Amt>
                    <InstdAmt Ccy="GHS">2450.00</InstdAmt>
                </Amt>
                <ChrgBr>SLEV</ChrgBr>
                <CdtrAgt>
                    <FinInstnId>
                        <BICFI>BAGHGHA0</BICFI>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>GH1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </CdtrAgt>
                <Cdtr>
                    <Nm>Receive Test</Nm>
                    <PstlAdr>
                        <Ctry>GH</Ctry>
                        <AdrLine>1, Kumasi road</AdrLine>
                    </PstlAdr>
                </Cdtr>
                <CdtrAcct>
                    <Id>
                        <Othr>
                            <Id>65AC100010002</Id>
                            <SchmeNm>
                                <Cd>BBAN</Cd>
                            </SchmeNm>
                        </Othr>
                    </Id>
                </CdtrAcct>
                <RmtInf>
                    <Strd>
                        <RfrdDocAmt>
                            <DuePyblAmt Ccy="NGN">155400.00</DuePyblAmt>
                        </RfrdDocAmt>
                    </Strd>
                </RmtInf>
            </CdtTrfTx>
        </PmtInf>
    </hdr:CdtrPmtActvtnReq>
```

c) Reply message sent by PAPSS to Bank of Ghana

```
<hdr:FIToFIPmtStsRpt xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.002.001.07">
        <GrpHdr>
            <MsgId>PS20210504000089804</MsgId>
            <CreDtTm>2021-06-16T10:15:30Z</CreDtTm>
            <InstdAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <MmbId>GH1001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstdAgt>
        </GrpHdr>
        <OrgnlGrpInfAndSts>
            <OrgnlMsgId>20210616GH1001000000000000001261547</OrgnlMsgId>
            <OrgnlMsgNmId>pain.013.001.07</OrgnlMsgNmId>
            <GrpSts>ACCP</GrpSts>
        </OrgnlGrpInfAndSts>
        <TxInfAndSts>
            <StsId>PS20210504000089804</StsId>
            <OrgnlInstrId>20210616GH1001000000000000001261547</OrgnlInstrId>

<OrgnlEndToEndId>20210616GH1001000000000000001261547</OrgnlEndToEndId>
            <OrgnlTxId>20210616GH1001000000000000001261547</OrgnlTxId>
            <AccptncDtTm>2021-06-16T10:15:30Z</AccptncDtTm>
            <OrgnlTxRef>
                <PmtTpInf>
                    <SvcLvl>
                        <Cd>INST</Cd>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>AGR</Cd>
                    </LclInstrm>
                </PmtTpInf>
                <DbtrAgt>
                    <FinInstnId>
                        <BICFI>CBNINGL0</BICFI>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
            </OrgnlTxRef>
        </TxInfAndSts>
    </hdr:FIToFIPmtStsRpt>
```

7.1.7. Request to Pay Response – pain.014.001.07

The format uses the standard ISO schemas in the following structure.

INDEX		MESSAGE ITEM	XML TAG	MULTIPLICITY
1	Message Root		<CdtrPmtActvtnReqStsRpt>	[1..1]

2		Group Header	<GrpHdr>	[1..1]
3		Original Group Info and Status	<OrgnlGrpInfAndSts>	[1..1]
4		Original Payment Info and Status	<OrgnlPmtInfAndSts>	[1..1]

Group Header

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY	TYPE
1.0	Group Header	<GrpHdr>	[1..1]	
1.1	Message Identification	<MsgId>	[1..1]	Max35Text
1.2	Creation Date Time	<CreDtTm>	[1..1]	ISODateTime
1.3	Number of Transactions	<NbOfTxs>	[1..1]	1
1.4	Initiating Party	<InitgPty>	[1..1]	
1.5	Name	<Nm>	[0..1]	
1.6	Identification	<Id>	[0..1]	
1.7	OrgId	<OrgId>	[1..1]	
1.8	Other	<Othr>	[1..1]	
1.9	Id	<Id>	[1..1]	PAPSS Id
1.10	Scheme name	<SchmeNm>	[0..1]	
1.11	Proprietary	<Prtry>	[1..1]	Constant: PAPSS

Original Group Info and Status

INDEX	MESSAGE ITEM	XML TAG	MULTI.	TYPE
2.1	Original Group Info and Status	<OrgnlGrpInfAndSts>	[1..1]	
2.2	Original Message Identification	<OrgnlMsgId>	[1..1]	Max35Text
2.3	Original Message Name Identification	<OrgnlMsgNmId>	[1..1]	Max35Text

2.4		Original Creation Date Time		<OrgnlCreDtTm>	[0..1]	ISODateTime
2.5		Original Number of Transactions		<OrgnlNbOfTxs>	[0..1]	Max15NumericText
2.6		Group Status		<GrpSts>	[0..1]	External payment status code
2.7		Status Reason Information		<StsRsnInf>	[0..1]	
2.8			Reason	<Rsn>	[0..1]	
2.9				Code	<Cd>	[1..1]	External reason code

Original Payment Info and Status

INDEX	MESSAGE ITEM	XML TAG	MULTI.	TYPE
3.1	Original Payment Info and Status	<OrgnlPmtInfAndSts>	[0..1]	
3.2	Original Payment Information Identification	<OrgnlPmtInfId>	[1..1]	Max35Text
3.3	Payment Information Status	<PmtInfSts>	[0..1]	
3.4	Transaction Information and Status	<TxInfAndSts>	[0..1]	
3.5	Transaction Status	<TxSts>	[0..1]	External status code
3.6	Status Reason Information	<StsRsnInf>	[0..1]	
3.7	Reason	<Rsn>	[0..1]	
3.8	Code	<Cd>	[1..1]	External reason code
3.9	Original Transaction Reference	<OrgnlTxRef>	[0..1]	
3.10	Amount	<Amt>	[0..1]	
3.11	Instructed Amount	<InstdAmt>	[1..1]	ActiveOrHistoricCurrencyAndAmount

3.12				Requested Execution Date							<ReqdExctnDt>	[0..1]	
3.13					Date						<Dt>	[1..1]	ISODate
3.14				Payment Type Info							<PmtTpInf>	[0..1]	
3.15					Service Level						<SvcLvl>	[0..1]	
3.16						Code					<Cd>	[1..1]	External service code
3.17					Local Instrument						<LclInstrm>	[0..1]	
3.18						Code					<Cd>	[1..1]	External local instrument code
3.19				Remittance Information							<RmtInf>	[0..1]	
3.20					Unstructured						<Ustrd>	[0..1]	Max140Text
3.21					Strunctured						<Strd>	[1..1]	
3.22						Refered Amount					<RfrdDocAmt>	[1..1]	
3.23							Due Payment Amount				<DuePyblAmt>	[1..1]	Due payment amount in the in Creditor currency
3.24				Debtor							<Dbtr>	[0..1]	
3.25					Name						<Nm>	[0..1]	Max140Text
3.26					Postal Address						<PstlAdr>	[1..1]	
3.27						Country					<Ctry>	[1..1]	2-letter Country Code
3.28						Address Line					<AdrLine>	[1..7]	Max70Text
3.29				Debtor Account							<DbtrAcct>	[0..1]	
3.30					Identification						<Id>	[1..1]	
3.25						IBAN					<IBAN>	[0..1]	IBAN2007Identifier

3.31						BBAN		<Othr><Id> + <Othr><SchmeNm><Cd>	[0..1]	Creditor Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = “BBAN”
3.32				Debtor Agent				<DbtrAgt>	[0..1]	
3.33					Financial Institution Identification			<FinInstnId>	[1..1]	
3.34						BICFI Identifier		<BICFI>	[0..1]	BICFIDec2014Identifier
3.35						Clearing System Member Id		<ClrSysMmbId>	[1..1]	
3.36							Clearing System Id	<ClrSysId>	[1..1]	
3.37							Proprietary	<Prtry>	[1..1]	Contant: PAPSS
3.38							Member Id	<MmbId>	[1..1]	PAPSS ID of the Debtor
3.39				Creditor Agent				<CdtrAgt>	[1..1]	
3.40					Financial Institution Identification			<FinInstnId>	[1..1]	
3.41						BICFI Identifier		<BICFI>	[0..1]	BICFIDec2014Identifier
3.42						Clearing System Member Id		<ClrSysMmbId>	[1..1]	
3.43							Clearing System Id	<ClrSysId>	[1..1]	
3.44							Proprietary	<Prtry>	[1..1]	Contant: PAPSS
3.45							Member Id	<MmbId>	[1..1]	PAPSS ID of the Creditor
3.46				Creditor				<Cdtr>	[1..1]	
3.47					Name			<Nm>	[0..1]	Max140Text
3.48					Postal Address			<PstlAdr>	[1..1]	
3.49						Country		<Ctry>	[1..1]	2-letter Country Code

3.50						Address Line	<AdrLine>	[1..7]	Max70Text
3.51				Creditor Account			<CdtrAcct>	[0..1]	
3.52					Identification		<Id>	[1..1]	
3.53						IBAN	<IBAN>	[0..1]	IBAN2007Identifier
3.54						BBAN	<Othr><Id> + <Othr><SchmeNm><Cd>	[0..1]	Creditor Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = “BBAN”

Sample

```
<hdr:Message xmlns:hdr="urn:montran:message.01">
    <hdr:AppHdr xmlns="urn:iso:std:iso:20022:tech:xsd:head.001.001.01">
        <Fr>
            <FIId>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>XA0001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </Fr>
        <To>
            <FIId>
                <FinInstnId>
                    <BICFI>BAGHGHAC</BICFI>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>GH1001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </To>
        <BizMsgIdr>CT0201908220000069202</BizMsgIdr>
        <MsgDefIdr>pain.014.001.07</MsgDefIdr>
        <CreDt>2020-08-03T15:56:32Z</CreDt>
    </hdr:AppHdr>
    <hdr:CdtrPmtActvtnReqStsRpt
xmlns="urn:iso:std:iso:20022:tech:xsd:pain.014.001.07">
        <GrpHdr>
            <MsgId>CT0201908220000069202</MsgId>
            <CreDtTm>2020-08-03T15:56:32Z</CreDtTm>
            <InitgPty>
                <Id>
                    <OrgId>
                        <Othr>
                            <Id>NG1001</Id>
                            <SchmeNm>
                                <Prtry>PAPSS</Prtry>
                            </SchmeNm>
                        </Othr>
                    </OrgId>
                </Id>
            </InitgPty>
        </GrpHdr>
        <OrgnlGrpInfAndSts>
            <OrgnlMsgId>20200803GH1001000000000000000830165</OrgnlMsgId>
            <OrgnlMsgNmId>pain.014.001.07</OrgnlMsgNmId>
            <OrgnlCreDtTm>2020-08-03T14:13:41Z</OrgnlCreDtTm>
            <OrgnlNbOfTxs>1</OrgnlNbOfTxs>
```

```
        </OrgnlGrpInfAndSts>
        <OrgnlPmtInfAndSts>

<OrgnlPmtInfId>20200803GH10010000000000000000830165</OrgnlPmtInfId>
            <TxInfAndSts>
                <TxSts>RJCT</TxSts>
                <StsRsnInf>
                    <Rsn>
                        <Cd>AC01</Cd>
                    </Rsn>
                </StsRsnInf>
                <OrgnlTxRef>
                    <Amt>
                        <InstdAmt Ccy="NGN">700.14</InstdAmt>
                    </Amt>
                    <ReqdExctnDt>
                        <Dt>2019-08-22</Dt>
                    </ReqdExctnDt>
                    <PmtTpInf>
                        <SvcLvl>
                            <Cd>INST</Cd>
                        </SvcLvl>
                        <LclInstrm>
                            <Cd>AGR</Cd>
                        </LclInstrm>
                    </PmtTpInf>
                    <RmtInf>
                        <Ustrd>er</Ustrd>
                        <Strd>
                            <RfrdDocAmt>
                                <DuePyblAmt Ccy="GHS">12.00</DuePyblAmt>
                            </RfrdDocAmt>
                        </Strd>
                    </RmtInf>
                    <Dbtr>
                        <Nm>ii</Nm>
                        <PstlAdr>
                            <Ctry>NG</Ctry>
                            <AdrLine>wewe</AdrLine>
                        </PstlAdr>
                    </Dbtr>
                    <DbtrAcct>
                        <Id>
                            <Othr>
                                <Id>wewew</Id>
                                <SchmeNm>
                                    <Cd>BBAN</Cd>
                                </SchmeNm>
                            </Othr>
                        </Id>
                    </DbtrAcct>
                    <DbtrAgt>
                        <FinInstnId>
                            <BICFI>CBNINGLA</BICFI>
                            <ClrSysMmbId>
                                <ClrSysId>
                                    <Prtry>PAPSS</Prtry>
```

```
                                </ClrSysId>
                                <MmbId>NG1001</MmbId>
                            </ClrSysMmbId>
                        </FinInstnId>
                    </DbtrAgt>
                    <CdtrAgt>
                        <FinInstnId>
                            <BICFI>BAGHGHAC</BICFI>
                            <ClrSysMmbId>
                                <ClrSysId>
                                    <Prtry>PAPSS</Prtry>
                                </ClrSysId>
                                <MmbId>GH1001</MmbId>
                            </ClrSysMmbId>
                        </FinInstnId>
                    </CdtrAgt>
                    <Cdtr>
                        <Nm>vasi</Nm>
                        <PstlAdr>
                            <Ctry>GH</Ctry>
                            <AdrLine>23</AdrLine>
                        </PstlAdr>
                    </Cdtr>
                    <CdtrAcct>
                        <Id>
                            <Othr>
                                <Id>12123</Id>
                                <SchmeNm>
                                    <Cd>BBAN</Cd>
                                </SchmeNm>
                            </Othr>
                        </Id>
                    </CdtrAcct>
                </OrgnlTxRef>
            </TxInfAndSts>
        </OrgnlPmtInfAndSts>
    </hdr:CdtrPmtActvtnReqStsRpt>
</hdr:Message>
```

7.1.8. Investigation – pacs.028.001.02

The format uses the standard ISO schemas in the following structure. A restriction of a single investigation is enforced

INDEX		MESSAGE ITEM	XML TAG	MULTIPLICITY
1	Message Root		<FIToFIPmtStsReq>	[1..1]
2		Group Header	<GrpHdr>	[1..1]
3		Transaction Information	<TxInf>	[1..1]

Group Header

INDEX	MESSAGE ITEM				XML TAG	MULTIPLICITY	TYPE
1.0	Group Header				<GrpHdr>	[1..1]	
1.1		Message Identification			<MsgId>	[1..1]	Max35Text
1.2		Creation Date Time			<CreDtTm>	[1..1]	ISODateTime
1.3		Instructing Agent			<InstgAgt>	[1..1]	
1.4			Financial Institution Identification		<FinInstnId>	[1..1]	
1.5				Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructing participant

Original Group Information

INDEX	MESSAGE ITEM		XML TAG	MULTIPLICITY	TYPE
2.1	Original Group Information		<OrgnlGrpInf>	[0..1]	
2.2		Original Message Identification	<OrgnlMsgId>	[1..1]	Max35Text
2.3		Original Message Name Identification	<OrgnlMsgNmId>	[1..1]	Max35Text

Item Details

INDEX	MESSAGE ITEM	XML TAG	MULTI.	TYPE
3.1	Transaction Information	<TxInf>	[1..1]	

3.2		Request Identification				<StsReqId>	[1..1]	Max35Text
3.3		Original End To End Identification				<OrgnlEndToEndId>	[1..1]	Max35Text
3.4		Original Transaction Identification				<OrgnlTxId>	[1..1]	Max35Text
3.5		Acceptance Date Time				<AccptncDtTm>	[1..1]	ISODateTime
3.6		Original Transaction Reference				<OrgnlTxRef>	[1..1]	
3.7			Payment Type Information			<PmtTpInf>	[0..1]	
3.8				Service Level		<SvcLvl>	[0..1]	
3.9					Code	<Cd>	[1..1]	Fixed value:”INST”
3.10				Local Instrument		<LclInstrm>	[1..1]	
3.11					Code	<Cd>	[1..1]	Empty or according to Payment schema defined in PAPSS
3.12			Debtor Agent			<DbtrAgt>	[1..1]	
3.14				Financial Institution Id		<FinInstId>	[1..1]	
3.15					Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Debtor participant

Sample

GCB Bank PLC requests the status of the previously sent transaction

a) input: Investigation message sent by GCB Bank PLC to PAPSS

```
<hdr:FIToFIPmtStsReq xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.028.001.02">
        <GrpHdr>
            <MsgId>20220315GH100414177523</MsgId>
            <CreDtTm>2022-03-15T02:38:24Z</CreDtTm>
            <InstgAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>GH1004</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstgAgt>
        </GrpHdr>
        <OrgnlGrpInf>
            <OrgnlMsgId>20220315GH100414177522</OrgnlMsgId>
            <OrgnlMsgNmId>pacs.008.001.07</OrgnlMsgNmId>
        </OrgnlGrpInf>
        <TxInf>
            <StsReqId>20220315GH100414177523</StsReqId>
            <OrgnlTxId>20220315GH100414177522</OrgnlTxId>
            <AccptncDtTm>2022-03-15T02:36:09Z</AccptncDtTm>
            <OrgnlTxRef>
                <PmtTpInf>
                    <SvcLvl>
                        <Cd>INST</Cd>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                </PmtTpInf>
                <DbtrAgt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>GH1004</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </DbtrAgt>
            </OrgnlTxRef>
        </TxInf>
    </hdr:FIToFIPmtStsReq>
```

b) Payment status report message sent by PAPSS back to GCB Bank PLC

```
<hdr:FIToFIPmtStsRpt xmlns="urn:iso:std:iso:20022:tech:xsd:pacs.002.001.07">
        <GrpHdr>
            <MsgId>PS20220315000000950 2</MsgId>
```

```
            <CreDtTm>2022-03-15T02:36:46Z</CreDtTm>
            <InstdAgt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <MmbId>GH1004</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </InstdAgt>
        </GrpHdr>
        <OrgnlGrpInfAndSts>
            <OrgnlMsgId>20220315GH100414177522</OrgnlMsgId>
            <OrgnlMsgNmId>pacs.008.001.07</OrgnlMsgNmId>
        </OrgnlGrpInfAndSts>
        <TxInfAndSts>
            <StsId>PS20220315000009502</StsId>
            <OrgnlInstrId>20220315GH100414177522</OrgnlInstrId>
            <OrgnlEndToEndId>20220315GH100414177522</OrgnlEndToEndId>
            <OrgnlTxId>20220315GH100414177522</OrgnlTxId>
            <TxSts>RJCT</TxSts>
            <StsRsnInf>
                <Orgtr>
                    <Id>
                        <OrgId>
                            <Othr>
                                <Id>NG2023</Id>
                            </Othr>
                        </OrgId>
                    </Id>
                </Orgtr>
                <Rsn>
                    <Cd>AC01</Cd>
                </Rsn>
            </StsRsnInf>
            <AccptncDtTm>2022-03-15T02:36:09Z</AccptncDtTm>
            <OrgnlTxRef>
                <IntrBkSttlmAmt Ccy="GHS">2.26</IntrBkSttlmAmt>
                <Amt>
                    <InstdAmt Ccy="NGN">150.00</InstdAmt>
                </Amt>
                <PmtTpInf>
                    <SvcLvl>
                        <Prtry>INST</Prtry>
                    </SvcLvl>
                    <LclInstrm>
                        <Cd>ET</Cd>
                    </LclInstrm>
                    <CtgyPurp>
                        <Cd>SUPP</Cd>
                    </CtgyPurp>
                </PmtTpInf>
                <DbtrAgt>
                    <FinInstnId>
                        <BICFI>GCBBGHAC</BICFI>
                        <ClrSysMmbId>
                            <MmbId>GH1004</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
```

```
                </DbtrAgt>
            </OrgnlTxRef>
        </TxInfAndSts>
    </hdr:FIToFIPmtStsRpt>
```

7.1.9. Identification Modification Advice – acmt.022.001.02

The format uses the standard ISO schemas in the following structure.

INDEX		MESSAGE ITEM	XML TAG	MULTIPLICITY
1	Message Root		<IdModAdvc>	[1..1]
2		Assignment	<Assgnmt>	[1..1]
3		Modification	<Mod>	[1..n]

Assignment

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY	TYPE
1.0	Assignment	<Assgnmt>	[1..1]	
1.1	Message Identification	<MsgId>	[1..1]	Max35Text
1.2	Creation Date Time	<CreDtTm>	[1..1]	ISODateTime
1.3	Assigner	<Assgnr>	[1..1]	
1.4	Agent	<Agt>	[1..1]	
1.5	Financial Institution Identification	<FinInstnId>	[1..1]	
1.6	Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructing participant
1.7	Assignee	<Assgne>	[1..1]	
1.8	Agent	<Agt>	[1..1]	
1.9	Financial Institution Identification	<FinInstnId>	[1..1]	
1.10	Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructed participant

Modification Admice

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY	TYPE
2.0	Modification advice	<Mod>	[1..1]	
2.1	Identification	<Id>	[1..1]	Max35Text
2.2	Original Party and Account Information	< OrgnlPtyAndAcctId >	[1..1]	

2.3			Proprietary			<Pty>	[1..1]	
2.4				Name		<Nm>	[0..1]	Beneficiary Name
2.5				CtctDtls		<CtctDtls>	[0..1]	
2.6					Phone number	<PhneNb>	[0..1]	Phone number, with or without country code, to be used as proxy identifier - Recommended format +NNN-NNNNNN, where N represents a digit); At least one of the PhneNb, MobNb and EmailAdr proxy identifiers must be present.
2.7					Mobile number	<MobNb>	[0..1]	Mobile phone number, with or without country code, to be used as proxy identifier - Recommended format +NNN-NNNNNN, where N represents a digit); At least one of the PhneNb, MobNb and EmailAdr proxy identifiers must be present.
2.8					Email address	<EmailAdr>	[0..1]	Email address, to be used as proxy identifier

								- Valid email address format required; At least one of the PhneNb, MobNb and EmailAdr proxy identifiers must be present.
2.9				Account		<Act>		
2.10					IBAN Account	<IBAN>	[0..1]	Account Identification IBAN
2.11					BBAN	<Othr><Id> <Othr><SchmeNm><Cd>	[0..1]	Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = "BBAN"
2.12		Updated Party and Account Information				<UpdtdPtyAndAcctId >	[1..1]	
2.13			Proprietary			<Pty>	[1..1]	
2.14				Name		<Nm>	[0..1]	Beneficiary Name
2.15				CtctDtls		<CtctDtls>	[0..1]	
2.16					Phone number	<PhneNb>	[0..1]	Phone number, with or without country code, to be used as proxy identifier - Recommended format +NNN-NNNNNN, where N represents a digit);

								At least one of the PhneNb, MobNb and EmailAdr proxy identifiers must be present.
2.17					Mobile number	<MobNb>	[0..1]	Mobile phone number, with or without country code, to be used as proxy identifier - Recommended format +NNN-NNNNNN, where N represents a digit); At least one of the PhneNb, MobNb and EmailAdr proxy identifiers must be present.
2.18					Email address	<EmailAdr>	[0..1]	Email address, to be used as proxy identifier - Valid email address format required; At least one of the PhneNb, MobNb and EmailAdr proxy identifiers must be present.
2.19				Account		<Act>		
2.20					IBAN Account	<IBAN>	[0..1]	Account Identification IBAN

2.21					BBAN	<Othr><Id> <Othr><SchmeNm><Cd>	[0..1]	Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = "BBAN"
2.22			Agent			<Agt>	[1..1]	
2.23				Financial Institution Identification		<FinInstnId>	[1..1]	
2.24					Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructing participant
2.25		Additional information				<AddtlInf>	[0..1]	Free text – usually this field is used to inform the proxy registration purpose.

7.1.10. Identification Verification Request – acmt.023.001.02

The format uses the standard ISO schemas in the following structure.

INDEX		MESSAGE ITEM	XML TAG	MULTIPLICITY
1	Message Root		<IdVrvrfctnReq>	[1..1]
2		Assignment	<Assgnmt>	[1..1]
3		Verification Information	<Vrftcn>	[1..1]

Assignment

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY	TYPE
1.0	Assignment	<Assgnmt>	[1..1]	
1.1	Message Identification	<MsgId>	[1..1]	Max35Text
1.2	Creation Date Time	<CreDtTm>	[1..1]	ISODateTime
1.3	Assigner	<Assgnr>	[1..1]	
1.4	Agent	<Agt>	[1..1]	
1.5	Financial Institution Identification	<FinInstnId>	[1..1]	
1.6	Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructing participant
1.7	Assignee	<Assgne>	[1..1]	
1.8	Agent	<Agt>	[1..1]	
1.9	Financial Institution Identification	<FinInstnId>	[1..1]	
1.10	Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructed participant

Verification Information

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY	TYPE
2.0	Verification Information	<Vrftcn>	[1..1]	
2.1	Identification	<Id>	[1..1]	Max35Text
2.2	Party and Account Information	<PtyAndAcctId>	[1..1]	

2.4			Account		<Acct>	[1..1]	
2.5				IBAN Account	<IBAN>	[0..1]	Account Identification IBAN
2.6				BBAN	<Othr><Id> <Othr><SchmeNm><Cd>	[0..1]	Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = "BBAN"

Sample

Account inquiry request sent by International Bank Liberia Limited for United Bank For Africa Nigeria PLC.

a) Input: acmt.023 message sent by International Bank Liberia Limited to PAPSS

```
<hdr:IdVrfctnReq xmlns="urn:iso:std:iso:20022:tech:xsd:acmt.023.001.02">
        <Assgnmt>
            <MsgId>20220315LR1003093249180</MsgId>
            <CreDtTm>2022-03-15T09:35:49Z</CreDtTm>
            <Assgnr>
                <Agt>
                    <FinInstnId>
                        <BICFI>IBLRLRLM</BICFI>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>LR1003</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgnr>
            <Assgne>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1033</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgne>
        </Assgnmt>
        <Vrfctn>
            <Id>20220315LR1003093249180</Id>
            <PtyAndAcctId>
                <Acct>
                    <Othr>
                        <Id>2127282972</Id>
                        <SchmeNm>
                            <Cd>BBAN</Cd>
                        </SchmeNm>
                    </Othr>
                </Acct>
            </PtyAndAcctId>
        </Vrfctn>
    </hdr:IdVrfctnReq>
```

b) Output message sent by PAPSS to United Bank For Africa Nigeria PLC

```
<hdr:IdVrfctnReq xmlns="urn:iso:std:iso:20022:tech:xsd:acmt.023.001.02">
```

```
        <Assgnmt>
            <MsgId>CT0202203150000011002</MsgId>
            <CreDtTm>2022-03-15T09:32:46Z</CreDtTm>
            <Assgnr>
                <Agt>
                    <FinInstnId>
                        <BICFI>IBLRLRLM</BICFI>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>LR1003</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgnr>
            <Assgne>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1033</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgne>
        </Assgnmt>
        <Vrfctn>
            <Id>20220315LR1003093249180</Id>
            <PtyAndAcctId>
                <Acct>
                    <Othr>
                        <Id>2127282972</Id>
                        <SchmeNm>
                            <Cd>BBAN</Cd>
                        </SchmeNm>
                    </Othr>
                </Acct>
            </PtyAndAcctId>
        </Vrfctn>
    </hdr:IdVrfctnReq>
```

c) Reply message from United Bank for Africa Nigeria PLC to PAPSS

```
<hdr:IdVrfctnRpt xmlns="urn:iso:std:iso:20022:tech:xsd:acmt.024.001.02">
        <Assgnmt>
            <MsgId>20220315NG1033000000000000930</MsgId>
            <CreDtTm>2022-03-15T09:33:49Z</CreDtTm>
            <Assgnr>
                <Agt>
                    <FinInstnId>
                        <BICFI>UNAFNGLA</BICFI>
                        <ClrSysMmbId>
                            <ClrSysId>
```

```
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>NG1033</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </Agt>
        </Assgnr>
        <Assgne>
            <Agt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>LR1003</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </Agt>
        </Assgne>
    </Assgnmt>
    <OrgnlAssgnmt>
        <MsgId>CT0202203150000011002</MsgId>
    </OrgnlAssgnmt>
    <Rpt>
        <OrgnlId>20220315LR1003093249180</OrgnlId>
        <Vrfctn>true</Vrfctn>
        <OrgnlPtyAndAcctId>
            <Acct>
                <Othr>
                    <Id>2127282972</Id>
                    <SchmeNm>
                        <Cd>BBAN</Cd>
                    </SchmeNm>
                </Othr>
            </Acct>
        </OrgnlPtyAndAcctId>
        <UpdtdPtyAndAcctId>
            <Pty>
                <Nm>AGADA STELLAMARIS FEDOJE</Nm>
                <CtctDtls>
                    <EmailAdr>.</EmailAdr>
                </CtctDtls>
            </Pty>
            <Agt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>NG1033</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </Agt>
        </UpdtdPtyAndAcctId>
    </Rpt>
</hdr:IdVrfctnRpt>
```

d) Reply message to United Bank for Africa Nigeria PLC from PAPSS

```
<hdr:IdVrfctnRpt xmlns="urn:iso:std:iso:20022:tech:xsd:acmt.024.001.02">
        <Assgnmt>
            <MsgId>PS220220315000011102</MsgId>
            <CreDtTm>2022-03-15T09:32:47Z</CreDtTm>
            <Assgne>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <MmbId>NG1033</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgne>
        </Assgnmt>
        <Rpt>
            <OrgnlId>20220315LR1003093249180</OrgnlId>
            <Vrfctn>true</Vrfctn>
            <Rsn>
                <Cd>0</Cd>
            </Rsn>
        </Rpt>
    </hdr:IdVrfctnRpt>
```

e) Reply message to International Bank Liberia Limited from PAPSS

```
<hdr:IdVrfctnRpt xmlns="urn:iso:std:iso:20022:tech:xsd:acmt.024.001.02">
        <Assgnmt>
            <MsgId>CT020220315000011202</MsgId>
            <CreDtTm>2022-03-15T09:32:48Z</CreDtTm>
            <Assgnr>
                <Agt>
                    <FinInstnId>
                        <BICFI>UNAFNGLA</BICFI>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1033</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgnr>
            <Assgne>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>LR1003</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgne>
```

```
        </Assgnmt>
        <OrgnlAssgnmt>
            <MsgId>CT02022031500000011002</MsgId>
        </OrgnlAssgnmt>
        <Rpt>
            <OrgnlId>20220315LR1003093249180</OrgnlId>
            <Vrfctn>true</Vrfctn>
            <OrgnlPtyAndAcctId>
                <Acct>
                    <Othr>
                        <Id>2127282972</Id>
                        <SchmeNm>
                            <Cd>BBAN</Cd>
                        </SchmeNm>
                    </Othr>
                </Acct>
            </OrgnlPtyAndAcctId>
            <UpdtdPtyAndAcctId>
                <Pty>
                    <Nm>AGADA STELLAMARIS FEDOJE</Nm>
                    <CtctDtls>
                        <EmailAdr>agadas@gmail.com</EmailAdr>
                    </CtctDtls>
                </Pty>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1033</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </UpdtdPtyAndAcctId>
        </Rpt>
    </hdr:IdVrfctnRpt>
```

7.1.11. Identification Verification Report – acmt.024.001.02

The format uses the standard ISO schemas in the following structure.

INDEX		MESSAGE ITEM	XML TAG	MULTIPLICITY
1	Message Root		<IdVrvrfctnRpt>	[1..1]
2		Assignment	<Assgnmt>	[1..1]
3		Original Assignment	<OrgnlAssgnmt>	[1..1]
3.1		Message Id	<MsgId>	Max35Text
4		Report Information	<Rpt>	[1..1]

Assignment

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY	TYPE
2.0	Assignment	<Assgnmt>	[1..1]	
2.1	Message Identification	<MsgId>	[1..1]	Max35Text
2.2	Creation Date Time	<CreDtTm>	[1..1]	ISODateTime
2.3	Assigner	<Assgnr>	[1..1]	
2.4	Agent	<Agt>	[1..1]	
2.5	Financial Institution Identification	<FinInstnId>	[1..1]	
2.6	Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructing participant
2.7	Assignee	<Assgne>	[1..1]	
2.8	Agent	<Agt>	[1..1]	
2.9	Financial Institution Identification	<FinInstnId>	[1..1]	
2.10	Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructed participant

Report Information

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY	TYPE
4.0	Report Information	<Rpt>	[1..1]	
4.1	Original Identification	<OrgnId>	[1..1]	Max35Text
4.2	Verification	<Vrfctn>	[1..1]	true/false

4.3		Original Party and Account Information			<OrgnlPtyAndAcctId>	[0..1]	In case of true verification
4.4			Account		<Acct>	[1..1]	
4.5				IBAN Account	<IBAN>	[0..1]	Account Identification IBAN
4.6				BBAN	<Othr><Id> <Othr><SchmeNm><Cd>	[0..1]	Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = "BBAN"
4.7		Updated Party and Account Information			<UpdtdPtyAndAcctId>	[0..1]	
4.8			Party		<Pty><Nm>	[1..1]	Max35Text
4.9			Account		<Acct>	[1..1]	
4.10				IBAN Account	<IBAN>	[0..1]	Account Identification IBAN
4.11				BBAN	<Othr><Id> <Othr><SchmeNm><Cd>	[0..1]	Account identification as regular bank account number Othr/Id = account number Othr/SchmeNm/Cd = "BBAN"
4.12			Agent		<Agt>	[1..1]	

4.13				Financial Institution Identification		<FinInstnId>	[1..1]	Financial Institution Identification
4.14					Clearing System Member Id	<ClrSysMmbId>	[1..1]	Clearing System Member Id
4.15		Reason				<Rsn>	[0..1]	In case of false verification
4.16			Code			<Cd>	[1..1]	Reason code

Sample

This is a succes verification report:

```
<hdr:Message xmlns:hdr="urn:montran:message.01">
    <hdr:AppHdr xmlns="urn:iso:std:iso:20022:tech:xsd:head.001.001.01">
        <Fr>
            <FIId>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>GM1001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </Fr>
        <To>
            <FIId>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>XA0001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </To>
        <BizMsgIdr>M20201022GM100166874699</BizMsgIdr>
        <MsgDefIdr>acmt.024.001.02</MsgDefIdr>
        <BizSvc>RTP</BizSvc>
        <CreDt>2020-10-22T11:41:14Z</CreDt>
    </hdr:AppHdr>
    <hdr:IdVrfctnRpt xmlns="urn:iso:std:iso:20022:tech:xsd:acmt.024.001.02">
        <Assgnmt>
            <MsgId>M20201022GM100166874699</MsgId>
            <CreDtTm>2020-10-22T14:41:14+03:00</CreDtTm>
            <Assgnr>
                <Agt>
                    <FinInstnId>
                        <BICFI>CBGIGMBJ</BICFI>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>GM1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgnr>
            <Assgne>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
```

```
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>GN1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgne>
        </Assgnmt>
        <OrgnlAssgnmt>
            <MsgId>CT02020101400000035401</MsgId>
        </OrgnlAssgnmt>
        <Rpt>
            <OrgnlId>20201022GN100166871226</OrgnlId>
            <Vrfctn>true</Vrfctn>
            <OrgnlPtyAndAcctId>
                 <Acct>
                    <Othr>
                        <Id>SLL116030003</Id>
                        <SchmeNm>
                            <Cd>BBAN</Cd>
                        </SchmeNm>
                    </Othr>
                </Acct>
            </OrgnlPtyAndAcctId>
            <UpdtdPtyAndAcctId>
                <Pty>
                    <Nm>Michael Brown</Nm>
                </Pty>
                <Acct>
                    <IBAN>GM9739217549120</IBAN>
                </Acct>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>GM1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </UpdtdPtyAndAcctId>
        </Rpt>
    </hdr:IdVrfctnRpt>
</hdr:Message>
```

This is a unsuccess verification report:

```
<hdr:Message xmlns:hdr="urn:montran:message.01">
    <hdr:AppHdr xmlns="urn:iso:std:iso:20022:tech:xsd:head.001.001.01">
        <Fr>
            <FIId>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
```

```
                    <MmbId>GM100001</MmbId>
                </ClrSysMmbId>
            </FinInstnId>
        </FIId>
    </Fr>
    <To>
        <FIId>
            <FinInstnId>
                <ClrSysMmbId>
                    <ClrSysId>
                        <Prtry>PAPSS</Prtry>
                    </ClrSysId>
                    <MmbId>XA0001</MmbId>
                </ClrSysMmbId>
            </FinInstnId>
        </FIId>
    </To>
    <BizMsgIdr>20211221GM100001163749000275</BizMsgIdr>
    <MsgDefIdr>acmt.024.001.02</MsgDefIdr>
    <BizSvc>RTP</BizSvc>
    <CreDt>2021-12-21T16:37:49Z</CreDt>
</hdr:AppHdr>
<hdr:IdVrfctnRpt xmlns="urn:iso:std:iso:20022:tech:xsd:acmt.024.001.02">
    <Assgnmt>
        <MsgId>20211221GM100001163749000275</MsgId>
        <CreDtTm>2021-12-21T16:37:59Z</CreDtTm>
        <Assgnr>
            <Agt>
                <FinInstnId>
                    <BICFI>CBGAGMGM</BICFI>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>GM100001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </Agt>
        </Assgnr>
        <Assgne>
            <Agt>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>LR100001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </Agt>
        </Assgne>
    </Assgnmt>
    <OrgnlAssgnmt>
        <MsgId>CT02021122100000006001</MsgId>
    </OrgnlAssgnmt>
    <Rpt>
        <OrgnlId>20211221LR100001163856</OrgnlId>
```

```
            <Vrfctn>false</Vrfctn>
            <Rsn>
                <Cd>500</Cd>
            </Rsn>
            <OrgnlPtyAndAcctId>
                <Acct>
                    <Othr>
                        <Id>GMD140050001</Id>
                        <SchmeNm>
                            <Cd>BBAN</Cd>
                        </SchmeNm>
                    </Othr>
                </Acct>
            </OrgnlPtyAndAcctId>
        </Rpt>
    </hdr:IdVrfctnRpt>
</hdr:Message>
```

7.1.12. Modification Message – camt.007.002.03

The format uses the standard ISO schemas in the following structure. This message can be use only in conjunction with a non-instant payment that didn't reach its final status: Completed or Canceled. It is used to set a desired status for a non-payment transaction like: STOPPED, CANCELLED, POSTPONED.

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY
1	Message Root	<ReqToModfyPmt>	[1..1]
2	Case Assignment	<Assgnmt>	[1..1]
3	Case	<Case>	[1..1]
4	Transaction Batch Information	<Undrlyg>	[1..1]
5	Required Modification	<Mod>	[1..1]

Case Assignment

INDEX	MESSAGE ITEM	XML TAG	MULTIPLICITY	TYPE
1.0	Case Assignment	<Assgnmt>	[1..1]	
1.1	Identification	<Id>	[1..1]	Max35Text
1.2	Assigner	<Assgnr>	[1..1]	
1.3	Agent	<Agt>	[1..1]	
1.4	Financial Institution Identification	<FinInstnId>		
1.5	Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructing participant
1.6	Assignee	<Assgne>	[1..1]	
1.7	Agent	<Agt>	[1..1]	
1.8	Financial Institution Identification	<FinInstnId>		

1.9					Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructing participant
1.10		Creation Date Time				<CreDtTm>	[1..1]	ISODateTime

Case

INDEX	MESSAGE ITEM					XML TAG	MULTIPLICITY	TYPE
2.0	Case					<Case>	[1..1]	
2.1		Identification				<Id>	[1..1]	Max35Text
2.2		Creditor				<Cretr>	[1..1]	
2.3			Agent			<Agt>	[1..1]	
2.4				Financial Institution Identification		<FinInstnId>		
2.5					Clearing System Member Id	<ClrSysMmbId>	[1..1]	PAPSS ID of the Instructing participant

Transaction Batch Information

INDEX	MESSAGE ITEM			XML TAG	MULTIPLICITY	TYPE
3.0	Transaction Batch Information			<Undrlyg>	[1..1]	
3.1		Underlying Payment Information		<IntrBk>	[1..1]	Max35Text
3.2			Original Group Information	<OrgnlGrpInf>	[0..1]	
3.3			Original Message Identification	<OrgnlMsgId>	[1..1]	Max35Text
3.4		Original End To End Identification		<OrgnlEndToEndId>	[1..1]	Max35Text
3.5		Original Transaction Identification		<OrgnlTxId>	[1..1]	Max35Text

3.6		Original Interbank Settlement Amount	<OrgnlIntrBkSttlmAmt>	[1..1]	ActiveCurrencyAndAmount
3.7		Original Interbank Settlement Date	<OrgnlIntrBkSttlmDt>	[1..1]	ISODate

Required Modification

INDEX	MESSAGE ITEM		XML TAG	MULTIPLICITY	TYPE
3.0	Required Modification		<Mod>	[1..1]	
3.1		Instruction For Debtor Agent	<InstrForDbtrAgt>	[1..1]	Max140Text

Sample

Central Bank of Nigeria wants to Stop a payment that is in Postponed status.

```
<env:Message xmlns:env="urn:montran:message.01">
    <env:AppHdr xmlns="urn:iso:std:iso:20022:tech:xsd:head.001.001.01">
        <Fr>
            <FIId>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>NG1001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </Fr>
        <To>
            <FIId>
                <FinInstnId>
                    <ClrSysMmbId>
                        <ClrSysId>
                            <Prtry>PAPSS</Prtry>
                        </ClrSysId>
                        <MmbId>XA0001</MmbId>
                    </ClrSysMmbId>
                </FinInstnId>
            </FIId>
        </To>
        <BizMsgIdr>M20200527NG100167057880</BizMsgIdr>
        <MsgDefIdr>camt.007.002.03</MsgDefIdr>
        <BizSvc>RTP</BizSvc>
        <CreDt>2020-05-27T08:10:59Z</CreDt>
    </env:AppHdr>
    <env:ReqToModfyPmt
xmlns="urn:iso:std:iso:20022:tech:xsd:camt.007.002.03">
        <Assgnmt>
            <Id>M20200527NG100167057880</Id>
            <Assgnr>
                <Agt>
                    <FinInstnId>
                        <BIC>CBNINGLA</BIC>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgnr>
            <Assgne>
                <Agt>
                    <FinInstnId>
                        <ClrSysMmbId>
```

```
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>XA0001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Assgne>
            <CreDtTm>2020-05-27T11:10:59+03:00</CreDtTm>
        </Assgnmt>
        <Case>
            <Id>20200527NG100167057880</Id>
            <Cretr>
                <Agt>
                    <FinInstnId>
                        <BIC>CBNINGLA</BIC>
                        <ClrSysMmbId>
                            <ClrSysId>
                                <Prtry>PAPSS</Prtry>
                            </ClrSysId>
                            <MmbId>NG1001</MmbId>
                        </ClrSysMmbId>
                    </FinInstnId>
                </Agt>
            </Cretr>
        </Case>
        <Undrlyg>
            <IntrBk>
                <OrgnlGrpInf>
                    <OrgnlMsgId>M20200526NG100189416083</OrgnlMsgId>
                    <OrgnlMsgNmId>pacs.008.001.07</OrgnlMsgNmId>
                </OrgnlGrpInf>
                <OrgnlInstrId>20200526NG100189416083</OrgnlInstrId>
                <OrgnlEndToEndId>20200526NG100189416083</OrgnlEndToEndId>
                <OrgnlTxId>20200526NG100189416083</OrgnlTxId>
                <OrgnlIntrBkSttlmAmt Ccy="NGN">61.94</OrgnlIntrBkSttlmAmt>
                <OrgnlIntrBkSttlmDt>2020-05-27</OrgnlIntrBkSttlmDt>
            </IntrBk>
        </Undrlyg>
        <Mod>
            <InstrForDbtrAgt>STOPPED</InstrForDbtrAgt>
        </Mod>
    </env:ReqToModfyPmt>
</env:Message>
```

7.1.13. Net Position Information Message – positions.001.xsd

The message that contains information about a Participant's positions has the following schema:

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- Montran Corporation 2017-2019 (RP) -->
<xs:schema xmlns="urn:montran:positions.001"
xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified"
 targetNamespace="urn:montran:positions.001">
 <xs:element name="positions">
       <xs:complexType>
             <xs:sequence>
                   <xs:element name="snapshot" type="SnapshotInfo" />
             </xs:sequence>
       </xs:complexType>
 </xs:element>

 <xs:complexType name="SnapshotInfo">
       <xs:sequence>
             <xs:element name="conditions" type="ConditionsList"
maxOccurs="unbounded"/>
       </xs:sequence>
       <xs:attribute name="instgAgtId" type="ClrSysMmbId" use="required"/>
       <xs:attribute name="lastTranSeq" type="xs:long" use="required" />
       <xs:attribute name="timestamp" type="xs:dateTime" use="required" />
 </xs:complexType>

 <xs:complexType name="ConditionsList">
       <xs:sequence>
             <xs:element name="condition" type="ConditionInfo"
maxOccurs="unbounded"/>
       </xs:sequence>
       <xs:attribute name="agtId" type="ClrSysMmbId" use="required" />
 </xs:complexType>

 <xs:complexType name="ConditionInfo">
       <xs:attribute name="accountCode" type="Max15Text" use="required"/>
       <xs:attribute name="ccy" type="ActiveCurrencyCode" use="required"/>
       <xs:attribute name="condType" type="ConditionType" />
       <xs:attribute name="balance" type="BalanceAmount_SimpleType" />
       <xs:attribute name="overdraft" type="Amount_SimpleType" />
       <xs:attribute name="debitAmount" type="Amount_SimpleType" />
       <xs:attribute name="debitCount" type="xs:integer" />
       <xs:attribute name="creditAmount" type="Amount_SimpleType" />
       <xs:attribute name="creditCount" type="xs:integer" />
 </xs:complexType>

 <!-- Supporting simple Types -->
 <xs:simpleType name="Amount_SimpleType">
       <xs:restriction base="xs:decimal">
             <xs:minInclusive value="0.00" />
             <xs:fractionDigits value="2" />
             <xs:totalDigits value="17" />
             <xs:maxInclusive value="999999999999999.99" />
```

```
                <xs:pattern value="[0-9]{0,15}([\.]([0-9]{0,2})){0,1}" />
        </xs:restriction>
 </xs:simpleType>

 <xs:simpleType name="BalanceAmount_SimpleType">
        <xs:restriction base="xs:decimal">
                <xs:minInclusive value="-999999999999999.99" />
                <xs:fractionDigits value="2" />
                <xs:totalDigits value="17" />
                <xs:maxInclusive value="999999999999999.99" />
                <xs:pattern value="[\-]{0,1}[0-9]{0,15}([\.]([0-
9]{0,2})){0,1}" />
        </xs:restriction>
 </xs:simpleType>

 <xs:simpleType name="ActiveCurrencyCode">
        <xs:restriction base="xs:string">
                <xs:pattern value="[A-Z]{3,3}" />
        </xs:restriction>
 </xs:simpleType>

 <xs:simpleType name="ClrSysMmbId">
        <xs:restriction base="xs:string">
                <xs:pattern value="[A-Z]{2,2}[1-9]{1,4}" />
        </xs:restriction>
 </xs:simpleType>

 <xs:simpleType name="ConditionType">
        <xs:restriction base="xs:string">
                <xs:enumeration value="COMPLETE" />
                <xs:enumeration value="HOLD" />
        </xs:restriction>
 </xs:simpleType>

 <xs:simpleType name="Max15Text">
        <xs:restriction base="xs:string">
                <xs:minLength value="1" />
                <xs:maxLength value="15" />
        </xs:restriction>
 </xs:simpleType>

</xs:schema>
```

Example of own net positions message:

```
<?xml version="1.0" encoding="UTF-8"?>
<positions xmlns="urn:montran:positions.001">
 <snapshot instgAgtId="NG0002" lastTranSeq="10104" timestamp="2017-06-
06T19:22:38+03:00" >
        <conditions conditions agtId=" NG0002 ">
                <condition accountCode=’NG0002-NGN-CA' ccy='NGN'
condType='COMPLETE' balance='470000.00' overdraft='0.00'
debitAmount='100000.00' debitCount='1' creditAmount='30000.00'
creditCount='1'/>
                <condition accountCode=’NG0002-NGN-CA' ccy='RON'
condType='HOLD' balance='0' debitAmount='0' debitCount='0' creditAmount='0'
creditCount='0'/>
        </conditions>
```

```
  </snapshot>
</positions>
```

The information reported in this message is divided into two conditions: COMPLETE and HOLD. The positions in the COMPLETE condition are information related to the transactions completed by the system, while the values from the HOLD condition are information related to transactions that are still being processed by the system.

The balance attribute is the net position of completed transactions (COMPLETE status) and is the arithmetic amount of the attributes: debitAmount and creditAmount.

DebitAmount and Creditamount are the total amounts of initial transactions received by the Participant that requested the information.

DebitCount and CreditCount is the number of initial transactions received by the Participant that requested the information.

The available clearing balance for the initiation of a payment by a Participant does not have a specific field in the message, but it can be calculated with the following formula:

available clearing balance = balance (COMPLETE) – DebitAmount (HOLD)

In other words, the available clearing balance is equal to the net amount of completed transactions minus the amount of initiated transactions still being processed.

7.1.14. Settlement Message – rcon.001.xsd

After completing each settlement process, the RTP automatically sends a reconciliation message to each Participant that had a net position. This message has the following XML schema:

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- Montran Corporation 2017-2019 (RP) -->
<xs:schema xmlns="urn:montran:rcon.001"
xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified"
targetNamespace="urn:montran:rcon.001">
 <xs:element name="recon">
       <xs:complexType>
             <xs:sequence>
                   <xs:element name="settlement" type="SettlementInfo"/>
                   <xs:element name="tran" type="Transaction"
minOccurs="0" maxOccurs="unbounded"/>
                   <xs:element name="totalSent" type="Summary" />
                   <xs:element name="totalReceived" type="Summary" />
                   <xs:element name="total" type="Summary" />
             </xs:sequence>
       </xs:complexType>
 </xs:element>

 <xs:complexType name="SettlementInfo">
       <xs:attribute name="seq" type="xs:long"/>
       <xs:attribute name="ccy" type="ActiveCurrencyCode"/>
       <xs:attribute name="msgId" type="Max35Text"/>
       <xs:attribute name="instgAgtId" type="ClrSysMmbId"/>
       <xs:attribute name="processTime" type="xs:dateTime" />
```

```
 </xs:complexType>

 <xs:complexType name="Transaction">
       <xs:attribute name="ref" type="Max35Text"/>
       <xs:attribute name="processTime" type="xs:dateTime"/>
       <xs:attribute name="amount" type="Amount_SimpleType"/>
       <xs:attribute name="tranSeq" type="xs:long"/>
       <xs:attribute name="dbtrAgtId" type="ClrSysMmbId"/>
       <xs:attribute name="cdtrAgtId" type="ClrSysMmbId"/>
 </xs:complexType>

 <xs:complexType name="Summary">
       <xs:attribute name="amount" type="Amount_SimpleType"/>
       <xs:attribute name="count" type="xs:integer"/>
 </xs:complexType>

    <!--  Supporting simple Types -->
    <xs:simpleType name="Amount_SimpleType">
        <xs:restriction base="xs:decimal">
            <xs:fractionDigits value="2"/>
            <xs:totalDigits value="17"/>
            <xs:pattern value="(\-){0,1}[0-9]{0,15}([\.]([0-
9]{0,2})){0,1}"/>
        </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="ActiveCurrencyCode">
        <xs:restriction base="xs:string">
            <xs:pattern value="[A-Z]{3,3}"/>
        </xs:restriction>
    </xs:simpleType>

 <xs:simpleType name="ClrSysMmbId">
       <xs:restriction base="xs:string">
             <xs:pattern value="[A-Z]{2,2}[ 1-9]{1,4}" />
       </xs:restriction>
 </xs:simpleType>

    <xs:simpleType name="Max35Text">
        <xs:restriction base="xs:string">
            <xs:minLength value="1"/>
            <xs:maxLength value="35"/>
        </xs:restriction>
    </xs:simpleType>

</xs:schema>
```

Example of reconciliation message:

```
<recon xmlns="urn:montran:rcon.001">
 <settlement seq="7" ccy=”NGN” msgId=”12345” instgAgtId="NG0002"
processTime="2017-08-18T12:00:01+03:00"/>
 <tran ref="XXXX" amount="100000" ccy="NGN" tranSeq="3" dbtrAgtId="NG0002"
cdtrAgtId="GH0003" processTime="2017-08-18T12:00:01"/>
 <tran ref="XXXX" amount="30000" ccy="NGN" tranSeq="4" dbtrAgtId="GH0003"
cdtrAgtId="NG0002" processTime="2017-08-18T12:00:01"/>
 <totalSent amount="100000.00" count="1"/>
 <totalReceived amount="30000.00" count="1"/>
```

```
  <total amount="70000.00" count="2"/>
</recon>
```

7.1.15. ParticipantStatus Message

This is a XML response for a getParticipantStatus() api call with parameters: PAPSS_ID and NG1001

```
<participants>
        <participant papssId="NG1001">
                <bic>CBNINGLA</bic>
                <name>Central Bank of Nigeria</name>
                <countryCode>NG</countryCode>
                <status>ACTIVE</status>
                <paymentschemas>
                        <paymentschema>PS-NG-NGN-NG1001-NG-NGN-SSA_1-ETN-
ET</paymentschema>
                        <paymentschema>PS-NG-NGN-NG1001-NG-NGN-SSA_1-DEF-
All</paymentschema>
                </paymentschemas>
                <currencies>
                        <currency>NGN</currency>
                </currencies>
                <online>true</online>
        </participant></participants>
```

7.1.16. GetEscrowTransactions

This is a XML response for a getEscrowTrnsactiomn api call.

```
<tranList>
      <tran ref="REF" amount="AMOUNT" currency="CURRENCY"
inputSeq="INPUT_SEQUENCE" tranSeq="TRAN_SEQUENCE" dbtrAgtId="DEBIT_AGENT_ID"
cdtrAgtId="CREDIT_AGENT_ID" status="STRATUS"/>
<tranList>
```

7.1.17. GetFXRate

This is a XML response for getFXRate api call for a direcct accounting.

```
<?xml version="1.0" encoding="UTF-8"?>
<PaymentFXRate>
 <Request LclInstrm="B2B1" ReceiverBank="GN1001" ReceiverCountry="GN"
ReceiverCurrency="GNF" SenderCountry="GH" SenderCurrency="GHS" amount="701"
isInvoice="false" time="2022-06-14T18:25:13+03:00"/>
 <Response time="2022-06-14T18:25:13+03:00">
       <Rate type="USD/GHS" updateTime="2021-10-
12T18:40:26+03:00">51.3900</Rate>
       <Rate type="USD/GNF" updateTime="2021-11-
18T16:36:00+02:00">9555.0000</Rate>
       <Rate type="GHS/GNF">185.9201141</Rate>
       <SenderAmount Ccy="GHS">701.00</SenderAmount>
       <ExchangeAmount Ccy="USD">13.64</ExchangeAmount>
       <ReceiverAmount Ccy="GNF">130330</ReceiverAmount>
       <NationalFeeAmount Ccy="GHS">102.78</NationalFeeAmount>
       <FeeAmount Ccy="USD">2.00</FeeAmount>
```

```
 </Response>
</PaymentFXRate>
```

This is a XML response for getFXRate api call for an invoice accounting.

```
<?xml version="1.0" encoding="UTF-8"?>
<PaymentFXRate>
 <Request LclInstrm="B2B1" ReceiverBank="GN1001" ReceiverCountry="GN"
ReceiverCurrency="GNF" SenderCountry="GH" SenderCurrency="GHS" amount="701"
isInvoice="true" time="2022-06-14T18:26:53+03:00"/>
 <Response time="2022-06-14T18:26:53+03:00">
        <Rate type="USD/GHS" updateTime="2021-10-
12T18:40:26+03:00">51.3900</Rate>
        <Rate type="USD/GNF" updateTime="2021-11-
18T16:36:00+02:00">9555.0000</Rate>
        <Rate type="GHS/GNF">194.7222222</Rate>
        <SenderAmount Ccy="GHS">3.60</SenderAmount>
        <ExchangeAmount Ccy="USD">0.07</ExchangeAmount>
        <ReceiverAmount Ccy="GNF">701</ReceiverAmount>
        <NationalFeeAmount Ccy="GHS">102.78</NationalFeeAmount>
        <FeeAmount Ccy="USD">2.00</FeeAmount>
 </Response>
</PaymentFXRate>
```

7.2. Annex 2 – Error Codes

After processing the messages and transactions, the RTP system assigns to each message an internal error code, described in the table below. These codes are displayed in the graphical user interface (MCM) for user investigations.

When pacs.002 reply messages are generated, the error code generated by the RTP system is mapped to an error code according to the SCT Inst schema.

INTERNAL CODE	PACS.002 MAPPING (ERROR CODE)	DESCRIPTION
0		No error.
100	MS03	Internal processing error.
500	AB05/TM01	Timeout error. The code reported at sender is AB05 and the coder reported at receiver is TM01.
501	MS02	Payment rejected by receiver Participant.
502	AB08	Receiver Participant is disconnected.
1000	MS03	Generic error.
1001	MS03	Generic validation error.

INTERNAL CODE	PACS.002 MAPPING (ERROR CODE)	DESCRIPTION
1002	FF01	The currency is invalid.
1003	FF01	The amount is invalid (less then or equal to zero).
1004	DNOR	Value of field **DbtrAgt** is invalid: • No active Participant with this BIC was found. • The value is different then **InstgAgt.** • The value is different then the sender Participant detected at the communication channel level.
1005	CNOR	Value of field **CdtrAgt** is invalid: • No active Participant with this BIC was found.
1006	RC01	Value of field **InstgAgt** is invalid: • No active Participant with this BIC was found. • The value is different then the sender Participant detected at the communication channel level.
1007	RC01	Unused
1008	AC01	The debtor IBAN is invalid.
1009	AC01	The creditor IBAN is invalid.
1010	AM05	A payment with the same reference has been detected within processing.
1011	AM05	A payment with the same reference has been detected as already processed.
1012	FF01	Settlement date is invalid (IntrBkSttlmDt).
1013	FF01	Invalid XML format.
1014		Unused.
1015	AB05	Invalid time – the value of field **Acceptance DataTime** is older then the current time with the timeout parameter value configured in the payment schema.
1016	AG09	Invalid original reference – during the processing of a pacs.028 message, no original transaction with that reference was found.
1017	AG09	Invalid status of the original transaction – during the processing of a pacs.002/pacs.028, the referred transaction

INTERNAL CODE	PACS.002 MAPPING (ERROR CODE)	DESCRIPTION
		has no appropriate status (message: WAIT_RECEIVER, transaction: HOLD).
1018	RC01	No valid sender – the sender Participant is **not** ACTIVE.
1019	AG01	The payment schema is not defined for the currency mentioned in the message.
1020	AM02	The amount is too large in comparison to the parameter defined in the payment schema.
1021	AG10	The sender is BLOCKED (temporary deactivated).
1022	RR04	The Participant is not mapped in the payment schema. Both Participants mentioned in the message need to be checked.
1026	FF01	Invalid XML field. It is setup if the validation of some fields from the XML message do not respect the validation rules that are not included in the XML schema, e.g.: **ClrSys**, **SvcLvl**, presence **InstdAgt**, value **NbOfTxs**.
1027	RC01	Invalid **receiver** message field. It could be the **AppHdr.To.FIId.FinInstId.BICFI** or the **Asignee** (for camt.* messages).
1028	FF01	The value of field **Original Settlement Date** is not valid in comparison to the payment schema and the current day.
1029	RC01	Transaction/message OnUs. Debtor Agent and Creditor Agent are equal.
1030	RC01	Invalid originator. The sender of the payment is not the instigated agent.
1031	MS03	Invalid national payment message. In case of an escro reservation the the sender country must be the same as the receiver country.
1032	MS03	Missing sender Settlement Region. No settlement region was found for the sender country and currency.
1033	MS03	Missing intructed amount.
1034	MS05	Missing receiver Settlement Region.
1035	MS03	Missing FX Rate.

INTERNAL CODE	PACS.002 MAPPING (ERROR CODE)	DESCRIPTION
1036	MS05	Account disabled.
1037	MS03	Invalid sender agent.
1038	MS03	Compliance check failure.
2000	AM23	Insuficient funds for the transaction clearing.
3000	FF01	The Participant has no ACTIVE registered DS certificate for the validation of messages.
3001	FF01	The XML message does not entail the digital signature in the specified format.
3002	FF01	The digital signature does not protect the entire XML message.
3003	FF01	Invalid digital signature.
3004	FF01	The certificate used for the signature is expired or it has been revoked.
9001	MS03	Settlement posting failure.