Domestic Payments

RTGS and ACH
On the Open Payment Framework

Clear2Pay

www.clear2pay.com

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Clear2Pay's Domestic Payments solution is the answer to today's challenges of efficiency, cost savings and adaptiveness in your RTGS and ACH payments operations.

By consolidating the multitude of payment systems into one centrally managed payment system, you will gain efficiency, benefit from lower costs, enhance transparency in processing and customer service and above all, have a future proof platform that enables your organisation to react quickly and efficiently to emerging market demands.

Functional Scope

The Domestic Payments module processes incoming and outgoing transactions for credit transfers and direct debits (either or both).

- **High-value payments** - Real Time Gross Settlement (RTGS) and Real Time Net Settlement (RTNS): EURO1, TARGET2, FedWire, RITS/RTGS, CNAPS, CHIPS, LVTS
- **Low-value payments** for Automated Clearing Houses (ACHs): BACS, BECS/DE, UK Faster Payments, STEP2, FedACH, EPN, ACSS, CCA

Note that Clear2Pay support SEPA payments for Europe as a unique product component.

1. External Interfaces

Parsers - Component that handles incoming payments: from customer channels, or from interbank channels. The parser's role is to map payments from their external format into the module's internal data model (based on the ISO20022 standard).
Submitters - Component that is responsible for mapping outgoing payments from the module's internal data model to the appropriate outgoing format. The submitter generates outgoing messages (e.g. SWIFT messages) and files (e.g. ACH files).
Out of the box parsers/submitters include SWIFT MT1x, MT2x, MTn9x, MT9x, SWIFT MX, ISO20022, EBA STEP2, EDIFACT, DE, BACS Standard 18, NACHA, FedWire, CHIPS, etc.

2. Validations

The module has a highly configurable and flexible validation service. Validations are based on XML configuration files. Additional business validations can easily be added using the optional Software Development Kit (SDK) which enables dynamic modifications to core business processes. Standard validations include duplicate check, BIC/IBAN validation and validation of customer agreements.

3. Disposition Check

The disposition check service is responsible for:

- Checking the validity of 'within bank' account numbers
- Verifying the status of accounts (with regards to them possibly being blocked/frozen)
- Verifying that accounts are sufficiently funded with regards to amounts to be debited

4. Automated Repair

The module includes several automated repair processes allowing banks to greatly increase the overall STP rate:

- Determining account holding institution from BBAN/IBAN
- Conversion of local bank codes to BICs and vice-versa
- Conversion of free-form name / addresses (i.e. SWIFT 'option D') to BICs

5. Warehousing

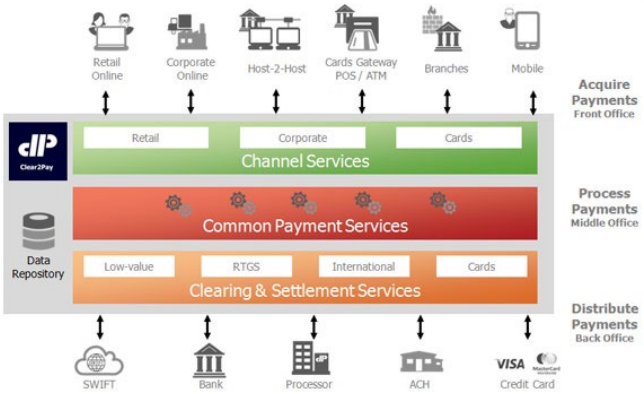
The warehousing service is responsible for storing payments with future execution dates. It relies on several parameters such as lead days in order to determine the appropriate release date for future dated payments.

6. Forex

The foreign exchange service converts payment amounts in cases where payment currency does not match account currency.

7. Cost Based Routing

- **Routing on us / not on us** - The module is able to identify so-called 'on us' payments (i.e. book transfers), in which both debtor and creditor accounts are held by the same bank. These payments can thus be executed within the bank without them being sent to a central clearing/ settlement infrastructure thus reducing cost, boosting revenue (additional float) and increasing efficiency.
- **External routing** - The external routing component of the module is responsible for selecting the most appropriate (cost effective) settlement path for outgoing payments.



Each bank can set up the interbank channels to which it is connected. For each of the latter each bank sets up a number of eligibility criteria (for example amount limit, cut-off time, urgent/non urgent, participation of counterpart bank, etc). Based on this data and on the characteristics of each payment, the module selects the routing path: ACH, bilateral clearing, PE-ACH, RTGS, etc.

8. High-care and Low-care Payments in a Single System

The system is capable of processing both low-care ACH-type payments as well as high-care high-value and urgent payments. It is however able to apply different processing rules to these different families of payments. For example, the configurable 'Issue Processor' determines the outcome of a negative validation check. Different outcomes can be set up for different types of payments: e.g. rejection for ACH-type low-care payments versus sending to a repair queue for RTGS-type high-care payments. The system also provides prioritisation rules ensuring that high-value high-care payments are executed in a timely fashion.

9. Accounting

The Accounting service relies on a set of configurable rules to generate accounting entries destined to the Bank's core account management systems. The accounting service is able to generate bulk and single accounting entries. The use of a Service Oriented Architecture facilitates integration with accounting systems.

10. Alerts/Notifications

When an exception occurs during processing (e.g. failure of a validation check), the notification (alert) service is invoked. Based on the nature of the exception a specific notification is generated and sent to the appropriate recipient.

11. Specific Processes for Direct Debit Processing

- **Adaptability to local DD schemes:** the system's data model allows each bank to configure the characteristics of its local direct debiting scheme in terms of types of direct debits and their associated presentation and unpaid chronology.
- **Mandate checking:** incoming direct debits are subjected to the mandate checking service that verifies that a direct debit is covered by a valid mandate (authorisation given by the debtor to the creditor to collect funds from his account).
- **Stop payments:** in the same manner, incoming direct debits are checked against a list of stop payments. Any matches can be queued for manual intervention, or automatically returned (depending on configuration)
- **Timeline verification:** this service makes sure that all items processed (direct debits as well as potential returns and refunds) comply with the chronology rules defined in the direct debiting scheme.
- **Processing Returns & Reversals** (i.e. unpaids & revocations). The system has specific workflows for processing these exception items. Many core business services such as accounting are re-used in this context.

12. Manual Interventions through UI

- **Duplicate management:** an authorised user can accept or reject files and/or payments flagged as possible duplicates.
- **Approval:** when a payment fails certain checks (e.g. disposition funds check), it is sent to the approval queue. From there, authorised users can choose to reject a payment or override the validation check.
- **Repair:** When necessary (e.g. because of the presence of an invalid account number) payments are sent to the repair queue. An authorised user can access payments and make the necessary alterations on specifically identified fields.
- **4-eye verification:** A second user must approve any actions applied to a payment before release.
- **Historical log:** a detailed account is maintained of all events encountered while processing payments.
- **All user interaction is subject to strict access control.** Furthermore, depending on configuration, the system's endorsement framework can be applied to selected functions. Thus one user's actions can be subject to validation by one (or more) appropriately authorised users.

13. Other Features

The Domestic Payments module also offers support for Y-copy, enriching direct CSM participants from indirect participants, ACK-NAK management including support for MT012 and MT019, billing, etc.

Design principles - Service Oriented Architecture

BPEL workflows and BPM (Business Process Manager) act in conjunction to 'orchestrate' the core business services. The latter are the application components that carry out the actual business processing tasks.
Independence of workflows and business services offers the following advantages:

- Business services are independent from one another, facilitating their re-use throughout the system in different contexts.
- Workflows can be defined and subsequently modified using graphical tools and with no modification of business services.
- As the bank's business evolves, new business services can easily be included within the workflows with little or no impact on the existing system.

Clarity in Payments

Clear2Pay is an innovative payments technology company focused on delivering globally applicable solutions for secure, timely and streamlined payments processing. Clear2Pay's Open Payment Framework enables financial institutions to improve internal payments processing efficiencies.

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