Module 1:
Demystifying ISO 20022

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Module 1

Agenda

1. General

1.1 ISO 20022 Messages Development (Recap from Introduction Session)
1.2 ISO 20022 Catalogue of Messages
1.3 ISO 20022 Message Naming, Variants and Versions
1.4 FIN MT and ISO 20022 Equivalents

2. ISO 20022

2.1 New Terminology
2.2 ISO 20022 Message Structure
2.3 Actors in an End-to-end payment chain
2.4 Concepts

3. Maintenance

3.1 ISO 20022 Maintenance
1.1 ISO 20022 Messages Development

ISO 20022 is a single standardisation approach to be used by all financial standards initiatives.
1.2 ISO 20022 Catalogue of Messages

XML = Extensible Markup Language

30 Business areas, covering several markets, e.g. payments, securities, trade services, foreign exchange

Main Business Areas for Payments:

- **pain**: Payment Initiation
- **pacs**: Payment Clearing and Settlement
- **camt**: Cash Management (Includes E&I)

Main Business Areas for Securities:

- **sse**: Securities Settlement
- **seev**: Securities Events
- **semt**: Securities Management

Link ISO Repository: [https://www.iso20022.org/iso-20022-message-definitions](https://www.iso20022.org/iso-20022-message-definitions)
1.2 ISO 20022 Catalogue of Messages

End to End Payment Chain

- **C2B**
- **B2B**
- **B2C**

- **pain**
- **pacs**
- **camt**

**camt (Exception and Investigation)**
1.3 ISO 20022 Message Naming, Variants and Versions

Example

4!a.3!c.3!n.2!n

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4!a</td>
<td>Business Area</td>
<td>pacs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3!c</td>
<td>Message Identifier</td>
<td>008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3!n</td>
<td>Variant</td>
<td>001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2!n</td>
<td>Version</td>
<td>08</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

pacs.008.001.08 FltoFICustomerCreditTransfer

Other example (Securities Market):

sese.023.001.09 SecuritiesSettlementTransactionInstruction
<table>
<thead>
<tr>
<th>FIN MTs</th>
<th>ISO 20022 Message Identification</th>
<th>ISO 20022 Message Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 103/MT103 STP/MT 103 Remit</td>
<td>pacs.008.001.xx</td>
<td>FI to FI Customer Credit Transfer</td>
</tr>
<tr>
<td>MT 202 / 202 COV / MT 200/ MT 205/ MT 205 COV</td>
<td>pacs.009.001.xx</td>
<td>Financial Institution Credit Transfer</td>
</tr>
<tr>
<td>MT New 103 (Return) / MT New 202 (Return)</td>
<td>pacs.004.001.xx</td>
<td>Payment Return</td>
</tr>
<tr>
<td>MT 103 REJECT / MT 202 REJECT</td>
<td>pacs.002.001.xx</td>
<td>FI to FI Payment Status Report (Negative)</td>
</tr>
<tr>
<td>No Equivalent</td>
<td>pacs.002.001.xx</td>
<td>FI to FI Payment Status Report (Positive)</td>
</tr>
<tr>
<td>MT 210</td>
<td>camt.057.001.xx</td>
<td>Notification to Receive</td>
</tr>
<tr>
<td>MT 900 / 910</td>
<td>camt.054.001.xx</td>
<td>Bank to Customer Debit Credit Notification</td>
</tr>
<tr>
<td>MT 920</td>
<td>camt.060.001.xx</td>
<td>Account Reporting Request</td>
</tr>
<tr>
<td>MT 941 / 942</td>
<td>camt.052.001.xx</td>
<td>Bank to Customer Account Report</td>
</tr>
<tr>
<td>MT 940 / 950</td>
<td>camt.053.001.xx</td>
<td>Bank to Customer Statement</td>
</tr>
<tr>
<td>MT 192 / MT 292</td>
<td>camt.056.001.xx</td>
<td>FI to FI Payment Cancellation Request</td>
</tr>
<tr>
<td>MT 195/ MT 295</td>
<td>camt.026.001.xx</td>
<td>Unable to Apply</td>
</tr>
<tr>
<td></td>
<td>camt.027.001.xx</td>
<td>Claim Non Receipt</td>
</tr>
<tr>
<td></td>
<td>camt.087.001.xx</td>
<td>Request to Modify</td>
</tr>
<tr>
<td>MT 196/MT 296</td>
<td>camt.029.001.xx</td>
<td>Resolution of Investigation</td>
</tr>
<tr>
<td>MT 101</td>
<td>Pain.001.001.xx</td>
<td>Customer Credit Transfer Initiation (Relay Scenario only for CBPR+)</td>
</tr>
<tr>
<td>No Equivalent</td>
<td>head.001.001.xx</td>
<td>Business Application Header</td>
</tr>
</tbody>
</table>
## 1.4 FIN MT and ISO 20022 Equivalents (Under Development)

<table>
<thead>
<tr>
<th>FIN MTs</th>
<th>ISO 20022 Message Identification/Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 110 / MT 111 / MT 112</td>
<td>New cheque messages</td>
</tr>
<tr>
<td>MT n90 / MT n91</td>
<td>New fee messages</td>
</tr>
</tbody>
</table>
## 2.1 ISO 20022 New Terminology: General

### Global ISO 20022 Standard

#### Enhanced UG

#### Like for Like (L4L) UG

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Definition</th>
</tr>
</thead>
</table>
| Usage Guideline              | Market Practice for ISO 20022 messages as defined in MyStandards, e.g.:  
  - Removal of optional elements  
  - Multiplicity change (optional element made mandatory, Number of occurrences)  
  - Restriction in element data length  
  - Restriction/addition of codes  
  - Addition of rules and guidelines |
| L4L/Like for Like (UG)       | Restrictions applied to the Global ISO 20022 Standards to align fully with FIN MT (allows smooth translation MX => MT with no truncation) |
| Enhanced/Enriched/          | Restrictions applied to Global ISO 20022 Standards that go beyond the FIN MT, e.g. CBPR+, HVPS+, T2, … |
| Fully Fledged (UG)          |                                                                                                                                              |
2.1 ISO 20022 New Terminology: Message and Parties

<table>
<thead>
<tr>
<th>MT</th>
<th>ISO 20022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message Field</td>
<td>Element</td>
</tr>
<tr>
<td>Field Format</td>
<td>Data Type</td>
</tr>
<tr>
<td>Parties</td>
<td></td>
</tr>
<tr>
<td>Ordering Customer</td>
<td>Debtor</td>
</tr>
<tr>
<td>Beneficiary Customer</td>
<td>Creditor</td>
</tr>
<tr>
<td>Bank</td>
<td>Agent</td>
</tr>
<tr>
<td>Sender</td>
<td>Instructing Agent</td>
</tr>
<tr>
<td>Receiver</td>
<td>Instructed Agent</td>
</tr>
</tbody>
</table>


ISO 20022 Message Structure

Exchange Request

Request

Request Header

Request Payload (Envelope)

Business Application Header

Document

MX Message Instance (Payment Payload)

Crypto (Signatures)

SWIFTNet Headers

Business Message
2.2 ISO 20022 Message Content

Example

pacs.008.001.08

- GroupHeader (GrpHdr)
- SettlementInformation (SttlmInf)
- SettlementAccount (SttlmAcct)
  - Identification (Id)
  - IBAN (IBAN)
  - Other (Othr)

Note:

SettlementAccount = Element Name

SttlmAcct = XML Tag

XML Tags must be embedded within an Opening And Closing Tag

```xml
<SttlmAcct>
  <Id>
    <IBAN>8789338260</IBAN>
  </Id>
</SttlmAcct>
```
2.3 ISO 20022 Actors in an End-to-end Payment Chain

Legend:
- New parties introduced in ISO 20022
- FIN MT format equivalent

**Payment Initiation (pain)**

- **Ultimate Debtor**
- **Forwarding Agent**
- **Initiating Party**
- **Debtor**
- **:50a**

**Payments Clearing & Settlement (pacs)**

- **Previous Instructing Agents**
- **:72:/INS/**
- **Previous Reimbursement Agents**
- **:53a, :54a, :55a**
- **Intermediary Agents**
- **:56a, :72:/INT/**
- **Debtor Agent**
- **Instructing Agent**
- **Instructed Agent**
- **Sender**
- **Receiver**
- **:52a, :57a**

**Cash Management (camt)**

- **Ultimate Creditor**
- **Creditor**
- **:59a**
### 2.4 Concepts: XML Element Multiplicity

<table>
<thead>
<tr>
<th>Min</th>
<th>Max</th>
<th>Multiplicity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>→</td>
<td>Element optional, if used can be present once only</td>
</tr>
<tr>
<td>0</td>
<td>*</td>
<td>→</td>
<td>Element optional, no limitation in the number of occurrences</td>
</tr>
<tr>
<td>0</td>
<td>n</td>
<td>→</td>
<td>Element optional, repeatable « n » times</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>→</td>
<td>Element mandatory, if not present message will be rejected</td>
</tr>
<tr>
<td>1</td>
<td>*</td>
<td>→</td>
<td>Element mandatory, no limitation in the number of occurrences</td>
</tr>
<tr>
<td>1</td>
<td>n</td>
<td>→</td>
<td>Element mandatory, repeatable « n » times</td>
</tr>
</tbody>
</table>
2.4 XML Data Types

- A data type within an XML document is a type/format that has been assigned to an element.
- It allows validation of the schema/xsd.

Example: InterbankSettlementAmount - **IntrBkSttlmAmt**
**DataType:** ActiveCurrencyAndAmount

ActiveCurrencyAndAmount (based on decimal)
• fractionDigits : 5
• undefined
• undefined
• undefined
• minInclusive : 0
• undefined
• totalDigits : 18

```xml
<IntrBkSttlmAmt Ccy="USD">664895.88</IntrBkSttlmAmt>
```
2.4 ISO 20022 External Codes

Embedded Codes

- Are part of the ISO 20022 message

- Change to code lists are part of the yearly maintenance request, i.e., once per year and will result in a new version of the message

ISO External Code Lists

- Externalised and posted on the ISO Website
- Updated on a Quarterly basis (through ISO Payment SEG)

- Payment Type Information
  - Instruction Priority
  - Clearing Channel
  - Service Level
  - Code
    - Proprietary

Some elements allow proprietary codes, i.e., codes that are bilaterally or multilaterally agreed (not published publicly)
## 2.4 ISO 20022 = Enriched Identifications (pacs.008.001.01)

<table>
<thead>
<tr>
<th>Identification</th>
<th>PointToPoint/EndToEnd</th>
<th>Definition</th>
<th>Occurrence</th>
<th>FIN MT Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction Identification</td>
<td>Point to Point</td>
<td>Unique identification, as assigned by an instructing party for an instructed party, to unambiguously identify the instruction.</td>
<td>Optional</td>
<td>Field 20 in MT 103</td>
</tr>
<tr>
<td>(Max 35 Characters)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transaction Identification</td>
<td>End to End</td>
<td>Unique identification, as assigned by the first instructing agent, to unambiguously identify the transaction that is passed on, unchanged, throughout the entire interbank chain.</td>
<td>Conditional</td>
<td>No equivalent</td>
</tr>
<tr>
<td>(Max 35 Characters)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UETR</td>
<td>End to End</td>
<td>Universally unique identifier to provide an end-to-end reference of a payment transaction.</td>
<td>Conditional</td>
<td>Field 121 Block 3 FIN Header</td>
</tr>
<tr>
<td>(Exact 36 Characters)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End to End Identification</td>
<td>End to End</td>
<td>Unique identification, as assigned by the initiating party, to unambiguously identify the transaction. This identification is passed on, unchanged, throughout the entire end-to-end chain.</td>
<td>Mandatory</td>
<td>Field 70 Remittance Information with code /ROC/ in MT 103</td>
</tr>
<tr>
<td>(Max 35 Characters)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearing System Identification</td>
<td>From MI onward</td>
<td>Unique reference, as assigned by a clearing system, to unambiguously identify the instruction.</td>
<td>Optional</td>
<td>No equivalent</td>
</tr>
<tr>
<td>(Max 35 Characters)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A Unique End-to-end Transaction Reference (commonly known as a UETR) is a string of 36 unique characters featured in all payment instruction messages carried over SWIFT. It allows true end to end tracking of international payments.

Example:
cea4ff16-9503-40df-9757-201cf1d7a127
2.4 ISO 20022 = Enriched Identifications (pacs.008.001.01)

End to End Identification

Instruction Identification

Transaction Identification

Clearing System Identification

End to End: Once allocated in the Payment Transaction, the Identification must be transported unchanged throughout the whole payment chain, e.g. UETR

Point to Point: Each Agent in the payment chain can replace the existing reference with its own reference, e.g. Instruction ID
3.1 ISO 20022 Maintenance

ISO 20022 – Yearly Maintenance Process (18 Months in total)
June Year 0 to November Year +1

1. The RA collects change requests from users
2. The SEG performs the initial evaluation of the change requests
3. The submitting organization prepares a Maintenance Change Request
4. The SEG reviews the Maintenance Change Request
5. The submitting organization develops the new candidate ISO 20022 message definitions
6. The SEG verifies the documentation of the new candidate ISO 20022 messages
7. The RA publishes the new version of the ISO 20022 message definitions
8. Testing and implementation
Save the Date

Monday, October 26, 2020 (2 sessions – same content)

15:00 - 16:00 HKT/09:00 – 10:00 CET
08:00 - 09:00 EST/14:00 – 15:00 CET

Module 2: ISO 20022 Initiatives and ISO 20022 Message Flows
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