

ISO 20022

# All You Need To Know



# Introduction

The 10th module of the ISO 20022 webcast series served as a review of the previous nine. Topics covered included where we stand on the RTGS migration timelines, the must-know features of the core ISO 20022 messages and the role of the SWIFT Transaction Manager.

## RTGS Migration: Major Market Infrastructures

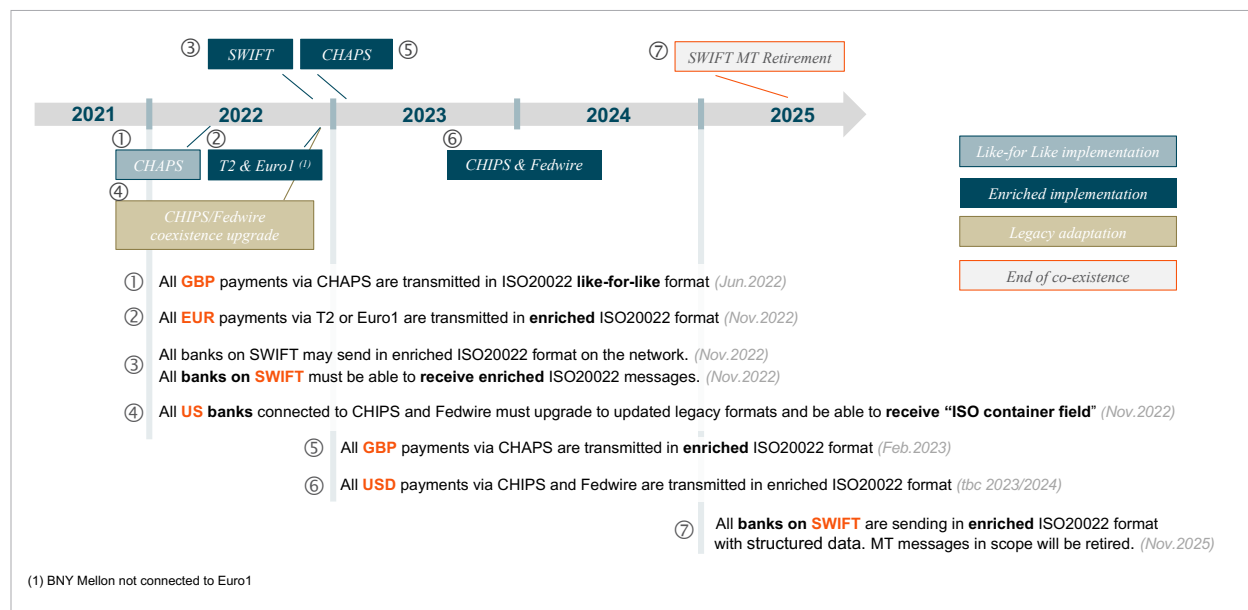
Of the major market infrastructures, the Bank of England's real-time gross settlement (RTGS) scheme, known as CHAPS, will be the first to migrate in June 2022—and will do so using a like-for-like approach. This will mean that CHAPS will use ISO 20022 standards with restrictions that are in line with the FIN MT usage today.

The next important milestone will be the third weekend in November 2022, when SWIFT, the Eurosystem's TARGET2 (T2) and EBA Clearing's EURO1 will all migrate in parallel. SWIFT will be migrating its Category 1, 2, and 9 messages into ISO 20022.

In February 2023, CHAPS will migrate to enriched ISO 20022 messages (from its like-for-like approach). This means that between November 2022 and February 2023, participants will have to deal with a coexistence period. During this period when an enriched CBPR+ ISO 20022 message is sent cross-border onto the CHAPS infrastructure, it will have to be mapped into a like-for-like message.

The final major market infrastructures to migrate will be CHIPS and the Fedwire for the US dollar clearing. The date has tentatively been set for the end of November 2023 and it has been confirmed that both infrastructures will leverage a “big bang” approach—meaning that all the banks connected on CHIPS and Fedwire will make the switch to enriched ISO 20022 messages on the same day. Given the migration delay between SWIFT for cross-border transactions and CHIPS and the Fedwire for US dollar transactions, coexistence solutions will be required.

**FIGURE 1: ISO 2022 MIGRATION TIMELINES FOR MAJOR MARKET INFRASTRUCTURES**



## RTGS Migration: Other Markets

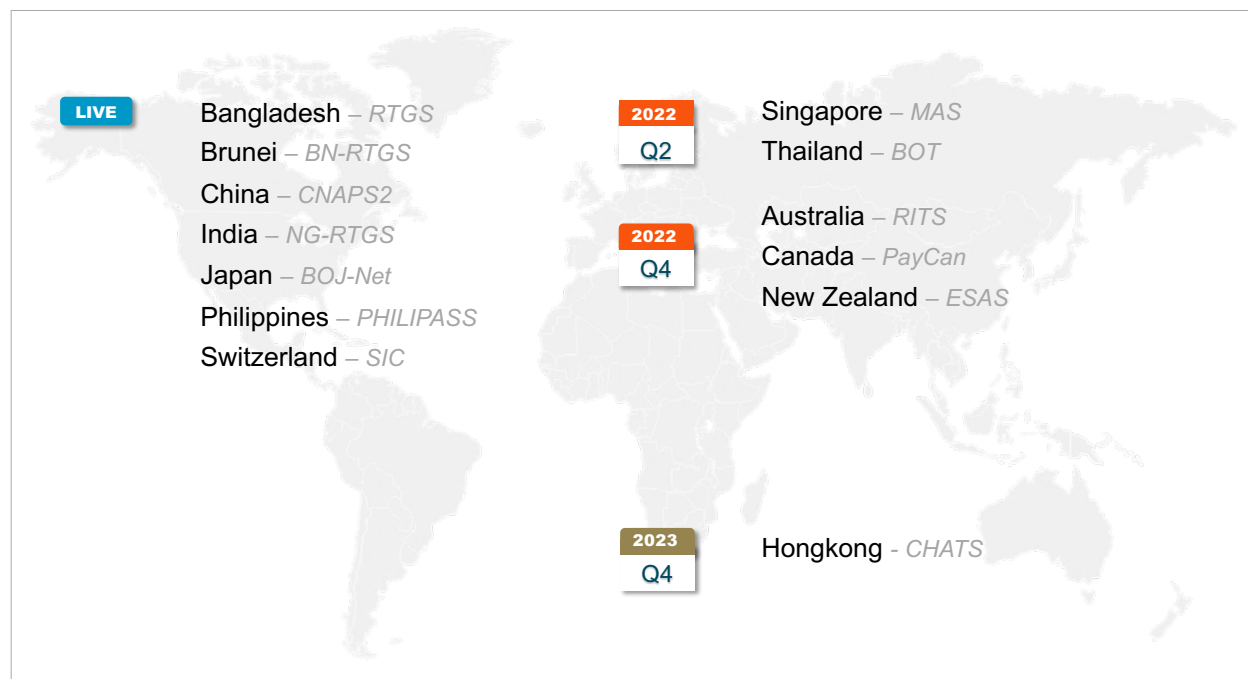
Outside of the major currencies (GBP, EUR and USD), there are several domestic RTGS systems that have either already migrated onto ISO 2022 or are currently working to do so (see Figure 2).

So far, Bangladesh, Brunei, India, Japan, and Switzerland have each migrated using a like-for-like approach, while China and the Philippines have migrated to enriched ISO 2022 messages.

Singapore is next in line to migrate to ISO 2022 in June 2022—and will do so using an enriched like-for-like approach. This essentially means they will migrate using like-for-like messages that are a bit more enriched than the pure FIN MT messages.

This will be followed by a flurry of migrations to enriched ISO 2022 messages: in August 2022, Thailand will migrate; in November 2022—at the same time as SWIFT, T2 and EURO1—Australia, Canada and New Zealand will migrate; and almost a year later, in October 2023, Hong Kong will migrate.

**FIGURE 2: ISO 2022 MIGRATION TIMELINES: OTHER MARKETS**



## CBPR+: Getting to Grips with the Usage Guidelines

Moving to ISO 2022 unlocks a new concept: that of Usage Guidelines. Today, in the FIN MT world, messages belong to SWIFT. Messages are transported on the FIN network and SWIFT is responsible for documenting the message specifications, which it does through the user handbook that is available on [swift.com](https://swift.com), as well as the organization of yearly maintenance.

When it comes to ISO 2022, it works a little bit differently. The ISO 2022 standard does not belong to SWIFT. It belongs to the ISO organization and so message specifications are posted on the [ISO website](https://www.iso.org). Here, all of the ISO 2022 messages, covering 30 business areas, are documented.

As part of this documentation, there is a series of “master ISO 2022 messages”, which are messages that include hundreds of elements. In order to be able to use these in a straight-through processing (STP) manner, you would need to apply some restrictions. This is where we get into the notion of Usage Guidelines.

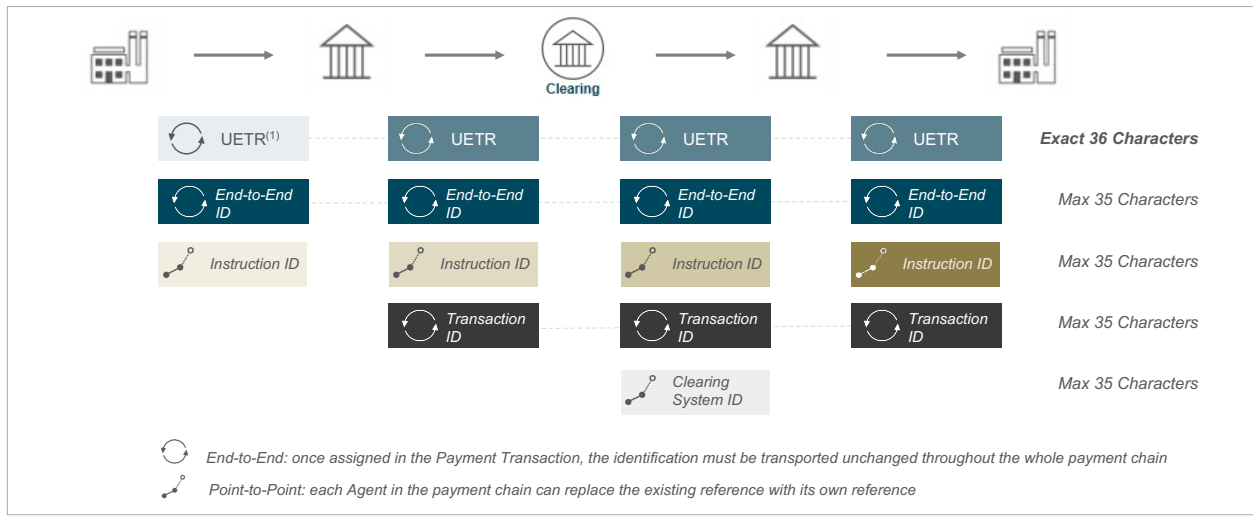
Each message to which you apply a certain number of restrictions are automatically saved as what we call Usage Guidelines. These are kind of sub-sets that can be used for various market practices. All Usage Guidelines, whether they are applied by Cross-Border Payments & Reporting+ (CBPR+) for the cross-border space, or for an RTGS system, are available on the SWIFT MyStandards platform. Many of these Usage Guidelines are freely available to anyone with [swift.com](https://swift.com) credentials, but some will need to be requested. For example, TARGET2 will only give access to Usage Guidelines to their Direct Participants.

## CBPR+: Enriched Identification Options

With FIN MT 103 message today, there is only one reference—the Field 20, which is actually the sender’s reference that is transported point to point. With ISO 20022, there are many more identification fields, which are designated for different purposes. Figure 3 outlines these identification options on a pacs.008 message, as an example. Important to note is that these same set of identification options are equally available in the pacs.009 message.

- **UETR:** Arguably the most important of these is the Unique End-to-end Transaction Reference (UETR). The UETR field allows you to include the UETR for the transactions within the payload, which will remain unchanged throughout the payment chain. This is either allocated by the corporate or the very first bank in the payment chain (in case the corporate doesn’t have the capacity to generate a UETR). The beauty of the UETR is that the field will be validated based on the algorithm it contains—and, from November 2022, SWIFT will validate the uniqueness of the UETR.
- **End-to-End Identification:** The End-to-End ID can be generated by the corporate and, unlike in FIN MT messages, gives the corporate the opportunity to include its own reference. In this case, the End-to-End Identification can be initiated by the corporate in a payment initiation message and it will then be transported unchanged in the pacs.008 or pacs.009 message. The End-to-End ID would also be used as a related reference equivalent in the MT 202 COV (Field 21) for the pacs.009 COV message.
- **Instruction Identification:** The Instruction ID is the equivalent to the Field 20 available in FIN messages today and serves as the sender’s reference. It’s a point-to-point identification, so every bank in the payment chain can decide to replace the Instruction ID with its own reference.
- **Transaction Identification:** The Transaction ID is an end-to-end identification that is generated by the first bank in the payment chain that must be transported unchanged through the payment chain. The rule states that you must have either the UETR or the Transaction ID present, but since the UETR is mandatory for CBPR+ and RTGS systems the Transaction ID essentially becomes optional.
- **Clearing System Identification:** The Clearing System ID is extremely important for RTGS systems—and allows them to provide a reference for the receiving Direct Participant. This reference is only transported between the clearing system, the RTGS system, and the receiving Direct Participant. This is quite useful in case of exception handling, returns, or queries.

**FIGURE 3: ENRICHED IDENTIFICATION OPTIONS—PACS.008 EXAMPLE**



## CBPR+: Actors in the Payment

While there were already several parties and agents available in FIN MT, they were never considered sufficient—and Field 72 was often used to transport additional information to identify additional agents. To tackle these issues, ISO 20022 introduces new agents (banks) and parties (non-banks) to the payment chain, including:

### NEW PARTIES

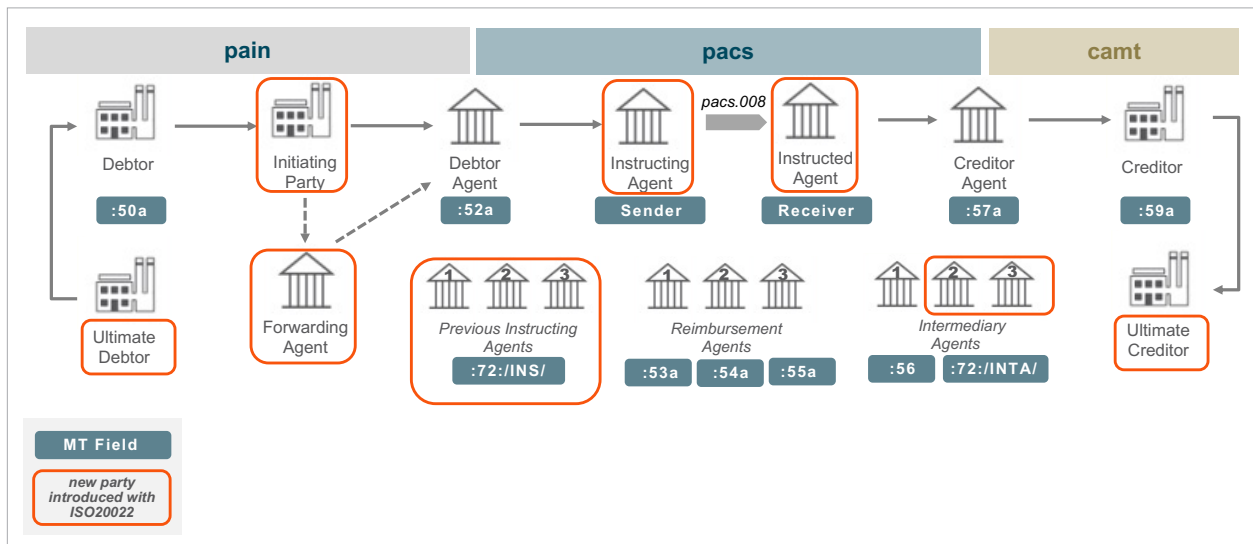
- The Ultimate Debtor—the Party on whose behalf the Debtor is instructing the payment
- The Ultimate Creditor—the Party on whose behalf the Creditor is receiving the payment

### NEW AGENTS

- Instructed Agent: The receiver of the payment instruction
- Instructing Agent: The sender of the payment instruction
- The Previous Agent 1, 2 and 3 will also have dedicated fields in pacs.008
- Intermediary Agent 1 (MT equivalent = Field 56a). Unlike MT messages, the pacs.008 message also contains dedicated fields for Intermediary Agent 2 and 3.

Figure 4 shows how these new actors are used in an end-to-end pacs.008 payment chain.

**FIGURE 4: ISO 2022 ACTORS IN AN END-TO-END PACS.008 PAYMENT CHAIN**



## CBPR+: Postal Address

Today, both structured and unstructured postal address is available for all agents and parties.

The CBPR+ recommends that all addresses for debtor and creditor should be structured by November 2023. This will, however, become an obligation from November 2025 and participants should start preparing databases for these structured addresses accordingly.

At a minimum, the country and a town name will need to be included for structured address—though it is recommended that actors provide the street name and building number where available. As with FIN MT today, the postal address component also includes three occurrences of 35 characters where you can include an unstructured address. It is, however, worth noting that you cannot have a mix of a structured and unstructured addresses within a given message. If you use the unstructured address line, you can no longer use any of the structured elements.

Figure 5 shows a postal address from a pacs.008 message that has been mapped and translated into a FIN MT. The elements shown in orange would all be truncated, while those in blue would be mapped into a Field 59F in this case (option F as this is for the structured address). Truncated information is indicated by a “+” sign in the translated MT message.

**FIGURE 5: POSTAL ADDRESS PACS.008 EXAMPLE**

**Postal Address (0..1)**

- Department (0..1)
- Sub-Department (0..1)
- Street Name (0..1)
- Building Number (0..1)
- Building Name (0..1)
- Floor (0..1)
- Post Box (0..1)
- Room (0..1)
- Post Code (0..1)
- Town Name (0..1)
- Town Location Name (0..1)
- District Name (0..1)
- Country Sub-Division (0..1)
- Country (0..1)
- Address Line (0..3)

**Structured**

**Unstructured**

**Example: Parties**

Teal data → mapped to MT format  
Orange data → truncated

**From pacs.008 Usage Guidelines Rules**

- If AnyBIC is absent, then Name is mandatory
- If Postal Address is present, then Name is mandatory
- If Structured Address is used, then Country and Town name must be present

**MX**

```

<Cdt>
<Nm> Joseph Chittenham and Christopher Englewood
Family Clinic </Nm>
<PstlAdr>
  <StrtNm>The New King Kamehameha Boulevard</StrtNm>
  <BldgNb>123</BldgNb>
  <BldgNm>Business District Tower 3 </BldgNm>
  <Flr>25th</Flr>
  <Room>5003</Room>
  <PstCd>96800</PstCd>
  <TwnNm>Honolulu</TwnNm>
  <TwnLctnNm>Kalihi Palama</TwnLctnNm>
  <CtrySubDvsn>Hawaii</CtrySubDvsn>
  <Ctry>US</Ctry>
</PstlAdr>
</Cdt>
<CdtAcct>
  <Id>
    <IBAN>BE12345678000011112222333 </IBAN>
  </Id>
</CdtAcct>
          
```

**MT**

```

:59F:/BE12345678000011112222333
1/Joseph Chittenham and Christopher
1/Englewood Family Clinic
2/The New King Kamehameha Boulevar+
3/US/Honolulu, 98600, Hawaii, Kali+
          
```

## CBPR+: Portfolio

Figure 6 below shows the complete CBPR+ portfolio, with the so-called “core” messages highlighted in orange (which we cover in more detail below).

**FIGURE 6: CBPR+ PORTFOLIO**

| Core Payment Messages                   |                                  | Exception Messages                   |  |
|---|----------------------------------|--------------------------------------|--|
| FIN MT                                  | ISO 20022                        | FIN MT                               | ISO 20022                                    |
| MT103, MT103 STP, MT103 Remit           | pacs.008.001.xx (Core, STP)      | A new MT103 Return, new MT202 Return | pacs.004.001.xx                              |
| MT202, MT202COV, MT200, MT205, MT205COV | pacs.009.001.xx (Core, ADV, COV) | MT103 Reject / MT202 Reject          | pacs.002.001.xx (Negative)                   |
| MT204                                   | Pacs.010.001.xx                  | n/a                                  | pacs.002.001.xx (Positive)                   |
| <b>Payment Initiation</b>               |                                  | n/a (cancellation of MT210)          | Camt.058.001.xx                              |
| FIN MT                                  | ISO 20022                        | MTn92                                | camt.056.001.xx                              |
| MT101 (Relay) and Reject                | pain.001 (Relay), pain.002       | MTn96                                | camt.029.001xx                               |
| <b>Cash Management Messages</b>         |                                  | <b>Planned for 2023</b>              |  |
| FIN MT                                  | ISO 20022                        | FIN MT                               | ISO 20022                                    |
| MT 210                                  | camt.057.001.xx                  | MT104, MT107                         | pain.008, pacs.003                           |
| MT 900/MT 910                           | camt.054.001.xx                  | MT190, MT191                         | camt.105, camt.106                           |
| MT 920                                  | camt.060.001.xx                  | MT110, MT111, MT112                  | camt.107, camt.108, camt.109                 |
| MT 941/MT 942                           | camt.052.001.xx                  | MTn95                                | set of case management messages under review |
| MT 940/MT 950                           | camt.053.001.xx                  | MT 199                               | TBC  |



## CORE MESSAGES

- **Pacs.008.001.08 (Core and STP):** The 'Financial Institution To Financial Institution Customer Credit Transfer' message is sent by the debtor agent to the creditor agent, directly or through other agents and/or a payment clearing and settlement system. It is used to move funds from a debtor account to a creditor. There is separate usage guidelines for the two different flavors of pacs.008: Core and STP. The message consists of two blocks:

- **The Group Header:** contains a set of characteristics shared by all individual transactions included in the message
- **The Credit Transfer Transaction Information:** contains a set of elements providing information specific to the individual credit transfer(s) (Note: Limited to 1 for CBPR+ and HVPS+)

- **Pacs.009.001.08 (Core, COV and ADV):** The 'Financial Institution Credit Transfer' message is sent by a debtor financial institution to a creditor financial institution, directly or through other agents and/or a payment clearing and settlement system. It is used to move funds from a debtor account to a creditor, where both debtor and creditor are financial institutions. There are three flavors of the pacs.009 message:

- **pacs.009 Core:** Core Financial Institution Credit Transfer (MT 202)
- **pacs.009 COV:** Cover Financial Institution Credit Transfer (MT 202COV) (to cover a pacs.008)
- **pacs.009 ADV:** Financial Institution Credit Transfer used to Advise a Cover Payment using the pacs.009 Core (New)

The message consists of two blocks, and a sub block:

- **The Group Header:** contains a set of characteristics shared by all individual transactions included in the message
- **The Credit Transfer Transaction Information:** contains a set of elements providing information specific to the individual credit transfer(s) (Note: Limited to 1 for CBPR+ and HVPS+)
  - **Underlying Customer Credit Transfer:** Provides information on the underlying customer credit transfer for which cover is provided (copy of the underlying pacs.008 elements). Available in the COV flavor only.

- **Pacs.004.001.09:** The 'Payment Return Message' is exchanged between agents to return funds after settlement of credit transfer instructions - that is pacs.008, pacs.009, or pacs.010. The message consists of two blocks, and a sub block:

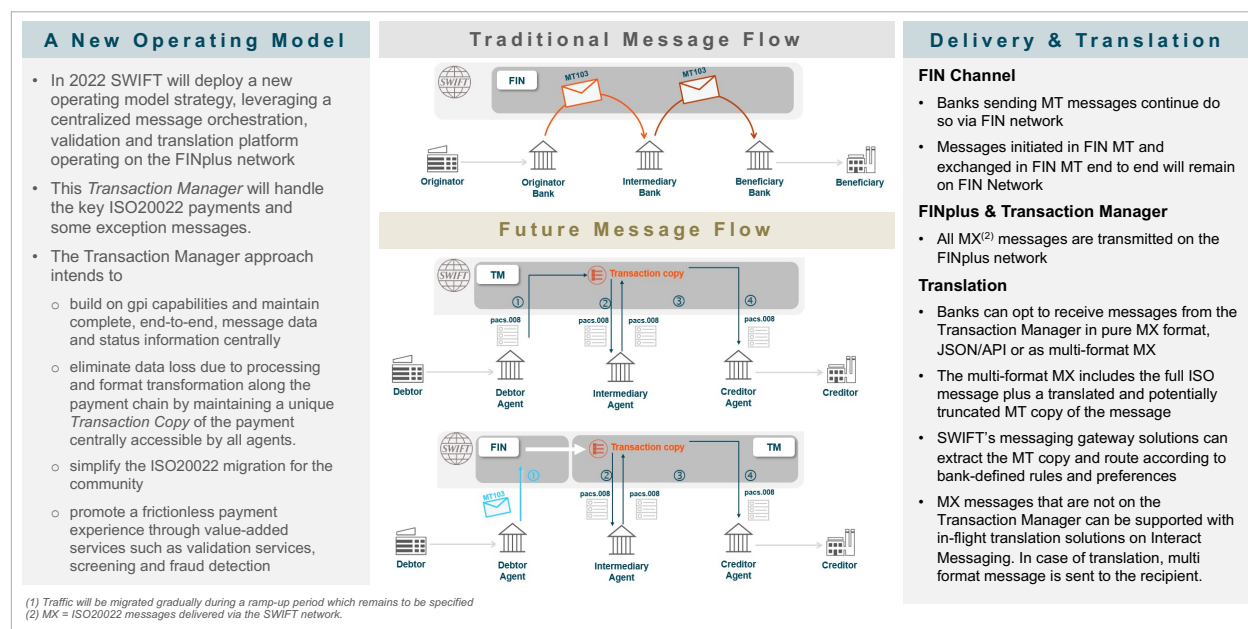
- **Group Header:** contains a set of characteristics shared by all individual return transactions included in the message
- **Transaction Information:** Information concerning the original transactions, to which the return message refers (Note: Limited to 1 for CBPR+ and HVPS+)
- **Original Transaction Reference:** Key elements used to identify the original transaction that is being referred to.

- **Pacs.002.001.10:** The 'FI To FI Payment Status Report' message is sent by an instructed agent to the previous party in the payment chain. It is used to inform this party about the positive or negative status of an instruction (either single or file). It is also used to report on a pending instruction. The message consists of two blocks, and a sub block:
  - **Group Header**
  - **Transaction Information and Status:** Information concerning the original transactions, to which the status report message refers (Note: Limited to 1 for CBPR+ and HVPS+)
  - **Original Transaction Reference:** Key elements used to identify the original transaction that is being referred to (copy of the pacs.008/pacs.009 /pacs.004 elements). Note—this is not used for CBPR+ transactions
- **Camt.056.001.08:** The 'FI To FI Payment Cancellation Request message' is exchanged between the instructing agent and the instructed agent to request the cancellation of an interbank payment message previously sent (such as FIToFICustomerCreditTransfer, FIToFICustomerDirectDebit or FinancialInstitutionCreditTransfer). The message supports both the request for cancellation (the instructed agent or assignee has not yet processed and forwarded the payment instruction) as well as the request for refund (payment has been fully processed already by the instructed agent - or assignee).
- **Camt.029.001.09:** The 'Resolution Of Investigation' message is used to inform of the resolution of an Exception and Investigation (camt.056 in this case). **SWIFT Transaction Manager**

In 2022, SWIFT will deploy a centralized message orchestration, validation and translation platform to “promote safe, instant and frictionless cross-border payments”. Known as the Transaction Manager, SWIFT’s platform will enable end-to-end transaction management

The SWIFT Transaction Manager represents a shift away from the traditional message flow (see Figure 7). Today, the SWIFT infrastructure only facilitates the exchange of messages in a transaction. The Transaction Manager will enable SWIFT to orchestrate the payment itself on the basis of a central copy of the transaction data. It could, therefore, be imagined as the difference between payment message management and transaction management (hence the name).

**FIGURE 7: TRADITIONAL AND FUTURE MESSAGE FLOW**



From November 2022, all the banks that are currently on FIN MT today will automatically be connected to the SWIFT Transaction Manager. As a receiver, banks will be able to choose the format they receive, whether an enriched ISO 20022 message, an API or a “FIN MT” message. If you choose the FIN MT message option, you will receive a multi-format message, which contains the ISO 20022 message with embedded, truncated FIN MT message, and a translation report. This is why all banks must be able to receive ISO 20022 messages from November 2022.

Some of the key features and components of the Transaction Manager include (see Figure 2):

- Transaction Copy:** The Transaction Manager creates and maintains a central transaction copy that captures the full data set from throughout the end-to-end payment journey. This “golden copy” is accessible to all transaction participants.
- Transaction Tracking:** The Transaction Manager and the SWIFT gpi Tracker will work together throughout the end-to-end transaction process. The Transaction Manager will keep and maintain a complete copy of the transaction data, and the gpi Tracker will keep track of everything that has happened to the transaction as it goes through its lifecycle.
- In-flow translation:** The in-flow translation is one of the key components of the evolved SWIFT strategy. It is a generic translation service built into the messaging channel and will provide interoperability between ISO 20022 users and MT users. The purpose of this translation is to ensure that banks that are not yet ready to process ISO 20022 not only continue to receive the full data set, but also in a format that is compatible with their back-office processing. This will be available on Interact Store and Forward messaging.

- **Mutualized services:** The Transaction Manager will also incorporate mutualized services, such as pre-validation, screening and exception management.




From November 2022, only the enriched pacs.008 and pacs.009 messages will be sent to the Transaction Manager—and all remaining transactions will be transported on SWIFT InterAct messaging.

Six months later, all of the six “core” messages—the pacs.008, pacs.009, pacs.002, pacs.004, camt.056 and camt.029—will be processed by the Transaction Manager. All of the remaining transactions in ISO 20022 will remain on the SWIFT InterAct . ISO 20022 messages sent to the Transaction Manager or processed on the Interact Messaging will use the so called FINPlus Service.

## PREPAREDNESS AND CLIENT SUPPORT.

With so much information to absorb, you might be left wondering: what action can I take? First and foremost, you should establish an impact and readiness checklist (see Figure 8). This might include taking a look at your entire payments infrastructure and identifying where FIN MT messages are being consumed, read or produced in any way whatsoever—both internally, and externally (where vendors are involved in your payment processing flow). This will help inform what internal infrastructure changes will be needed ahead of the migration. Once this is in place, you should prepare a checklist to identify the internal departments, external vendors and individuals that will need to be engaged on the project. It will also uncover how much these preparations will cost—and securing buy-in from senior management to support is a critical step.

**FIGURE 8: IMPACT AND PREPAREDNESS CHECKLIST**

|   |  Europe   |  US  |  Rest of World <sup>(1)</sup>  |
|---|--|---|---|
| <b>CHAPS, T2, CHIPS, Fedwire participants</b> | <ul style="list-style-type: none"> <li>• Full ISO20022 readiness for EUR/GBP</li> <li>• Use of structured customer address</li> <li>• Manage data truncation issues (1)</li> <li>• Implement outbound SWIFT messaging strategy (send MT or ISO)</li> </ul>   | <ul style="list-style-type: none"> <li>• Implement CHIPS and Fedwire legacy format changes in 2022</li> <li>• Full ISO20022 readiness for CHIPS/Fedwire by 2023/24</li> <li>• Use of structured customer address by 2023</li> <li>• Implement outbound SWIFT messaging strategy (send MT or ISO)</li> </ul> | <p>All Banks and all NBFIs on SWIFT should establish their migration strategy and plan a dedicated <b>ISO 20022</b> migration program.</p> <p><b>Suggested Actions:</b></p> <ul style="list-style-type: none"> <li>– Establish an impact &amp; readiness check list</li> <li>– Involve vendors</li> <li>– Estimate budget and resources</li> <li>– Plan and resource testing</li> <li>– Organize internal trainings</li> <li>– Plan internal &amp; external communication</li> <li>– Train client facing and operations team</li> </ul> |
| <b>Banks/NBFIs on SWIFT</b>                   | <p><i>Adjust for minimum requirements</i></p> <ul style="list-style-type: none"> <li>• Connect to SWIFT's new messaging platform, the <i>Transaction Manager</i>.</li> <li>• Receive/process ISO20022 messages from SWIFT or</li> <li>• Use a translation solution and manage impact of potential data truncation</li> <li>• Handle potential data truncation if message is passed on an MI that is not ISO20022 ready</li> </ul> <p><i>Plan full migration strategy</i></p> |   |   |
| <b>As a customer of BNY Mellon</b>            | <ul style="list-style-type: none"> <li>• Send SWIFT payments in preferred format until 2025</li> <li>• Receive advices and reporting (MT9xx) in preferred format until 2025</li> <li>• Leverage fully ISO20022 compliant Online Banking capabilities for payment initiation and reporting</li> </ul> <ul style="list-style-type: none"> <li>• Access BNY Mellon format specifications on SWIFT MyStandards and utilize Readiness Portal for testing</li> </ul>               |   |   |

## HOW BNY MELLON WILL SUPPORT OUR CUSTOMERS?

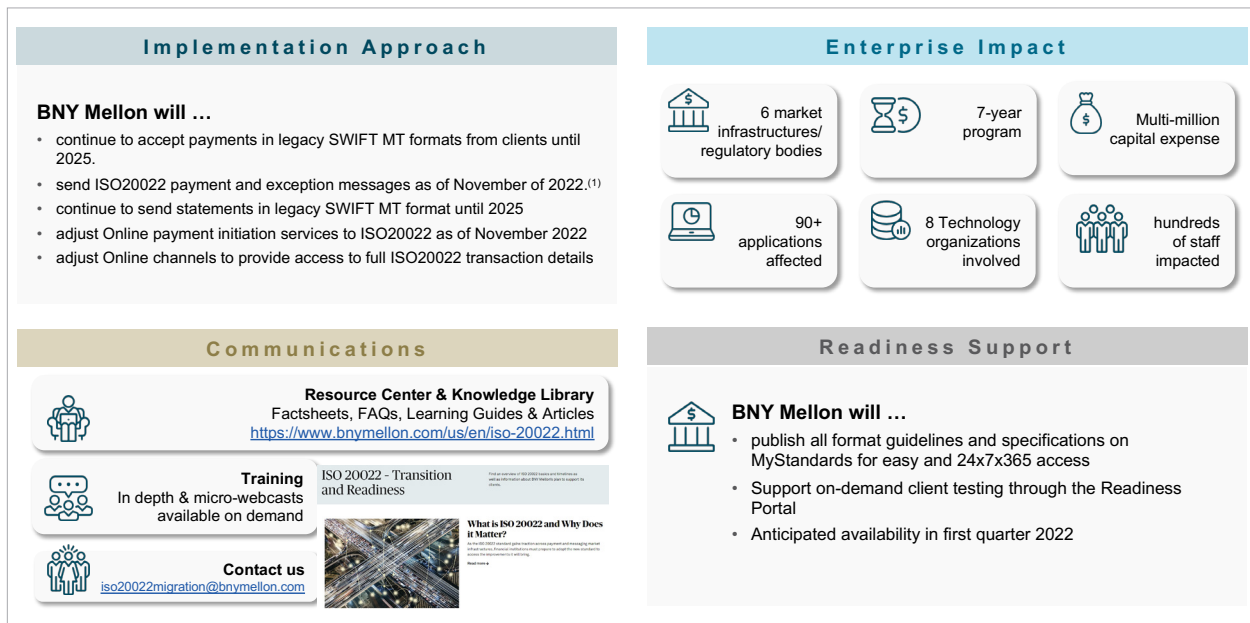
BNY Mellon has established an enterprise-wide ISO 20022 migration program across all lines of business (see Figure 9).

Based on client preference, BNY Mellon will support sending or receiving ISO 20022 messages as from November 2022, and will also accept and/or send legacy formats until November 2025.

In Addition BNY Mellon:

- Offers extensive training
- Engages in one-to-one client discussions
- Supports client testing using BNY Mellon’s portfolio of messages on MyStandards and the Readiness Portal, as from Q1 2022

**FIGURE 9: BNY MELLON IMPLEMENTATION**





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