



Migrating to ISO 20022

Getting ready for Structured Payments Data

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BACKGROUND

ISO 20022 has been LIVE on the SWIFT cross border network since March 2023

Financial institutions are in a 32-month coexistence phase for ISO 20022, culminating in full industry migration by November 2025. This shift is reshaping the financial services sector, with early adoption offering significant time, cost, and resource savings.

This included critical issues such as missing or truncated data, when a payment message is translated to MT from an equivalent ISO 20022 payment message i.e. pacs.008 <>MT103.

Leveraging a comprehensive financial data standard like ISO 20022 and the collaboratively defined Cross-Border Payments and Reporting (CBPR+) and HVPS+ standard opens the door to enhanced and superior payments data quality requirements.

[This white paper introduces a strategy to expedite the adoption of ISO 20022 structured data requirements by employing a blend of ISO 20022-specific machine learning and integration / orchestration technology.](#)

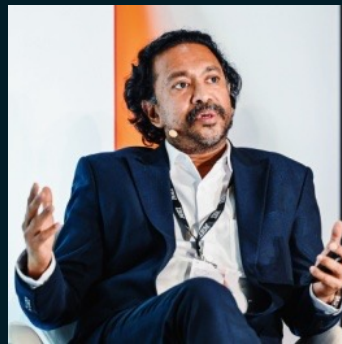
Emphasizing the inherent value of ISO 20022 data, the approach is framed within the context of providing long-term strategic value for organizations transitioning to ISO 20022.

“

For many financial institutions, gateway layer translation services that worked for incoming MX compliance will not serve outgoing MX requirements.

Structured data requirements for meeting outgoing MX requirements are significantly different from earlier incoming compliance considerations.

”



Biju Suresh Babu
*Managing Director,
Banking & Financial Services
Fiorano*

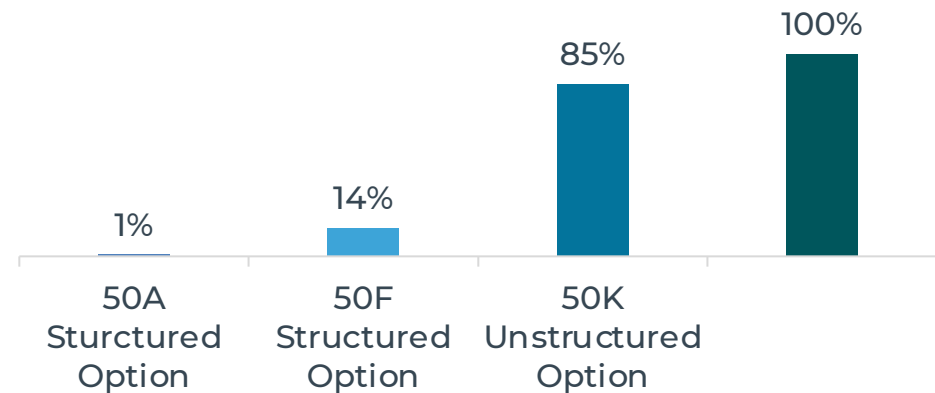


PAYMENTS DATA QUALITY CHALLENGES

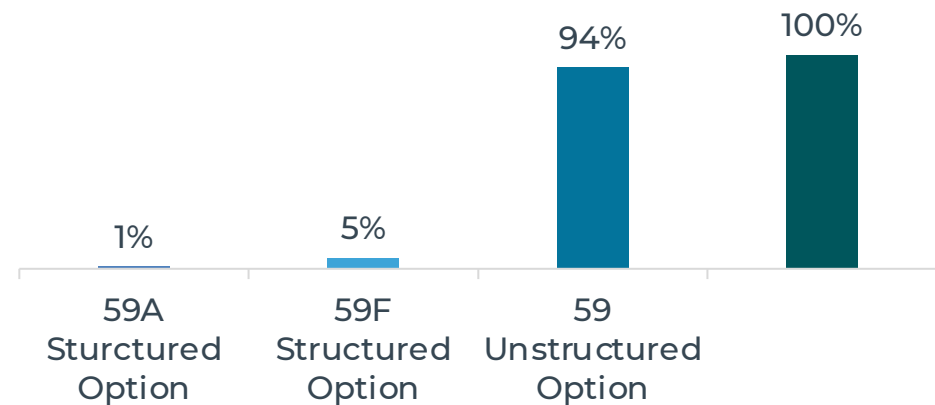
Swift's correspondent banking traffic data from 2017 and 2018 consistently indicates 85-94% usage of unstructured ordering and beneficiary customer field options.

Requiring multiple institutions to interpret ambiguous information, leading to 10% of payments needing manual interventions.

MT 103, Field 50: Ordering Customer



MT 103, Field 59: Beneficiary Customer

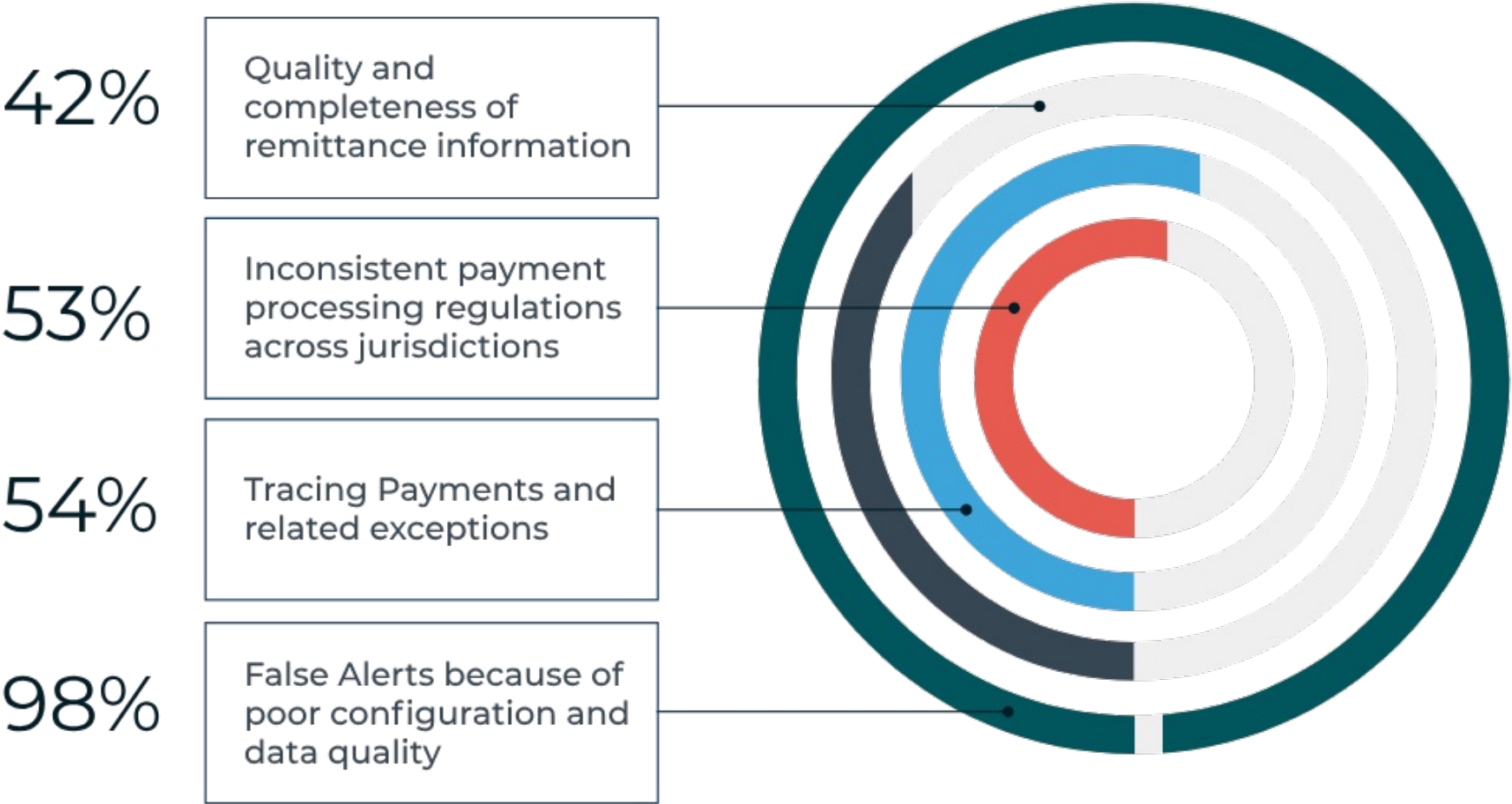


Source: SWIFT correspondent banking traffic data

Limited space in MT / FIN messages for remittance information forces customers to exchange data separately, resulting in costly reconciliations.

The constrained space to permit identification of all parties in a payment chain hampers consistent identification, reducing the efficacy of compliance controls.

Critical Data Elements responsible for Cross-border Payments Failures



Structured Payments Data

Addressing data challenges is crucial for streamlining international transactions, reducing operational burdens, and ensuring a seamless payment experience for both businesses and customers.

ISO 20022's enhanced, structured data will address the challenges faced by payments businesses during **sanctions screening**, **regulatory reporting** and investigations.

Payment's operations can also take advantage by using **structured purpose codes** and **structured remittance information** to streamline payments processing while identifying key customer trends.

“

Payment failures lead to costly and time-consuming manual interventions, elevated operational expenses, customer dissatisfaction, and potential financial loss along with reputational damage if deadlines are not met.

”



Akhil Rao
Managing Director
nth Exception



THE FUTURE OF
PAYMENTS DATA
IS STRUCTURED

Core Structured / Enhanced Data Elements as per CPMI's ISO 20022 harmonization requirements and G20 targets

1 Structured Postal Address

The use of structured addresses speeds up the overall processing of cross-border payments, especially facilitating screening processes, preventing the need for manual interventions



3 Structured Remittance Codes

Enable inclusion and transport of remittance information in a structured format enabling automated reconciliation, improving transparency and reducing processing costs.



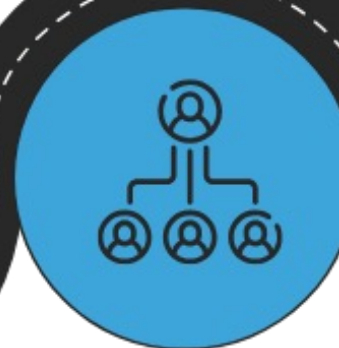
2 Structured Payment Purpose Codes

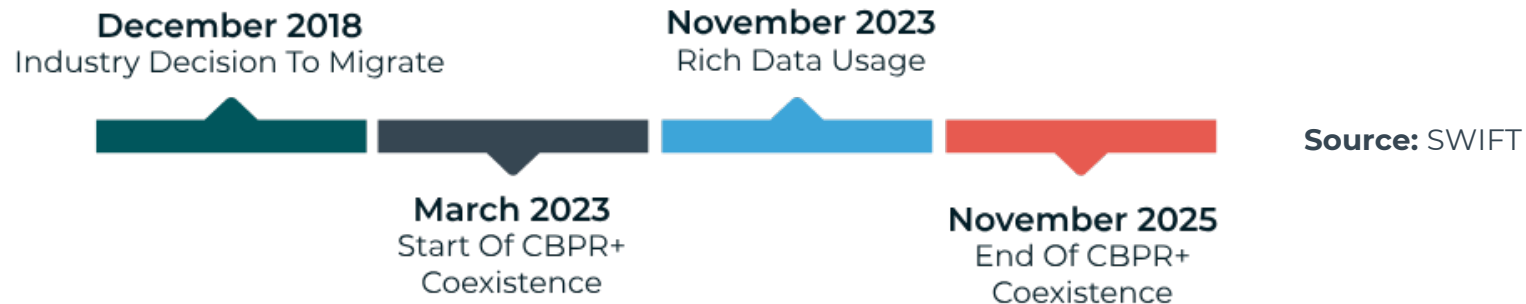
Using structured purpose codes, all parties involved in the processing of a cross-border payment can unambiguously understand the information, increasing the end-to-end processing speed and transparency of the payment details.



4 Legal Entity Identifiers

LEIs increase the speed of processing cross-border payments as it facilitates validation and screening processes, and is likely to reduce the number of "false positives" by compliance screening filters





Starting November 2023, the PMPG encourages transmitting comprehensive data for cross-border payments, leveraging ISO 20022.

Swift supports PMPG's guidance, endorsing enriched cross-border payments with detailed data to maximize ISO 20022 benefits.

The G20 is also in favor of harmonized use of ISO 20022 messages, recognizing its significant impact throughout the payments value chain.

Issues & Challenges

MT standard address

:59:/1234567890
Cuba Libre Bar and Grill
1234 Ocean Drive
90099 LA

While the payment on the left is highly likely to be part of the 10% of payments stopped by a sanctions filter, triggering an investigation.

ISO 20022 structured address

```
<Cdtr>
<Nm>Cuba Libre Bar and Grill</Nm>
<PstlAdr>

    <StrtNm>Ocean Drive</StrtNm>
    <BldgNb>1234</BldgNb>
    <PstCd>90099</PstCd>
    <TwnNm>Los Angeles</TwnNm>
    <CtrySubDvsn>CA</CtrySubDvsn>
    <Ctry>US</Ctry>

</PstlAdr>
:
etc.
:
</Cdtr>
```

With the same name and address in ISO 20022's structured format, unambiguously identifying the country code as 'US', with 'Cuba' being part of the business name 'Nm', a false positive compliance hit should not occur.

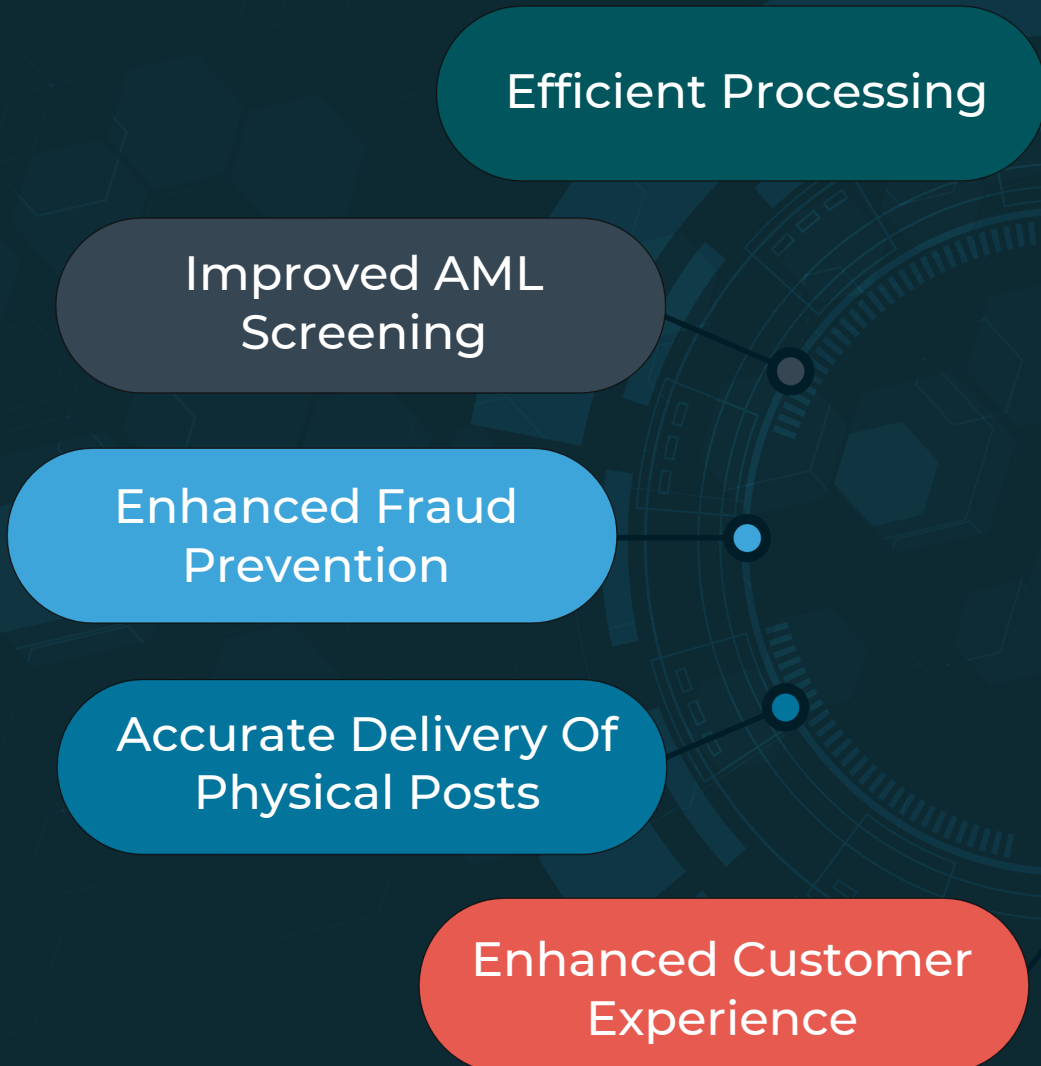
Industry Mandates

Central banks all over the world have started mandating the use of structured postal addresses to meet standardization and payments harmonization initiatives, including the G20 cross-border payments roadmap.

Level	Tag	Element	Position in subfield
3	<PstlAdr>	Postal Address	Information that locates and identifies a specific address, as defined by postal services
4	<Dept>	Department	Identification of a division of a large organization or building
4	<SubDept>	Sub Department	Identification of a sub-division of a large organization or building
4	<StrtNm>	Street Name	Name of a street or thoroughfare
4	<BldgNb>	Building Number	Number that identifies the Position of a building on a street
4	<BldgNm>	Building Name	Name of the building or house
4	<Flr>	Floor	Floor or storey within a building
4	<PstBx>	Post Box	Numbered box in a post office, assigned to a person or organization, where letters are kept until called for
4	<Room>	Room	Building room number
4	<PstCd>	Post Code	Identifier consisting of a group of letters and/or numbers that is added to a postal address to assist the sorting of mail
4	<TwnNm>	Town Name	Name of a built-up area, with defined boundaries, and a local government
4	<TwnLctnNm>	Town Location Name	Specific location name within the town
4	<DstrctNm>	District Name	Identifies a subdivision within a country sub-division
4	<CtrySubDvsn>	Country Subdivision	Identifies a subdivision of a country such as state, region, country
4	<Ctry>	Country	Nation with its own government

Industry Benefits

While more networks are following suite, the UK's Bank of England and the European Central Bank (ECB) are amongst the first to issue statements specifying the usage of structured address data, in-line with granular address elements.



Efficient Processing

Improved AML Screening

Enhanced Fraud Prevention

Accurate Delivery Of Physical Posts

Enhanced Customer Experience

Implementation Challenges: **Resource Intensive**

Most banks have opted for a **resource intensive** approach i.e. updating client facing channels or currently reviewing off-the-shelf automation tools to extract granular address fields as per the ISO 20022 address standard.

In our view, this approach may not deliver the expected results because:

1	2	3	4	5
Of the high complexity & build costs to structure existing client data bases and systems.	Multiple solutions are in play to collect, store & process data related to payments, including but not limited to Sanctions, CRM, Core Banking, Trade & Treasury.	Of the risks involved in manipulating client data.	Even when easily available, most banking systems do not hold structured data in a format that is suitable for ISO 20022.	Country address formats vary, making programmatic standardization unviable.

Implementation Challenges: Country Variances

Country	Address	Address Format
USA	John Smith 123 Main Street Apartment 4B New York, NY 10001 United States	Recipient Name House number + Street name Apartment or Unit number (if applicable) City, State abbreviation + ZIP code Country (optional, for international mail)
UK	Mr. John Smith No. 123 Main Lane London W1K 1PN United Kingdom	Title + Recipient Name Building Name / Number + Street name Town / City, County (optional), Postcode Country
UAE	John Smith Villa 2, Al Barsha 1 Street 123 Al Barsha Dubai United Arab Emirates	Recipient Name Building Name / Number Street Name Area / Neighbourhood City Emirate (optional) Postcode (for major cities)

Purpose codes play a crucial role in aiding regulators to ascertain the exact nature of cross-border transactions.

Purpose and remittance codes are issued by a country's central bank and are essential for the successful execution of cross-border or a high value transactions.

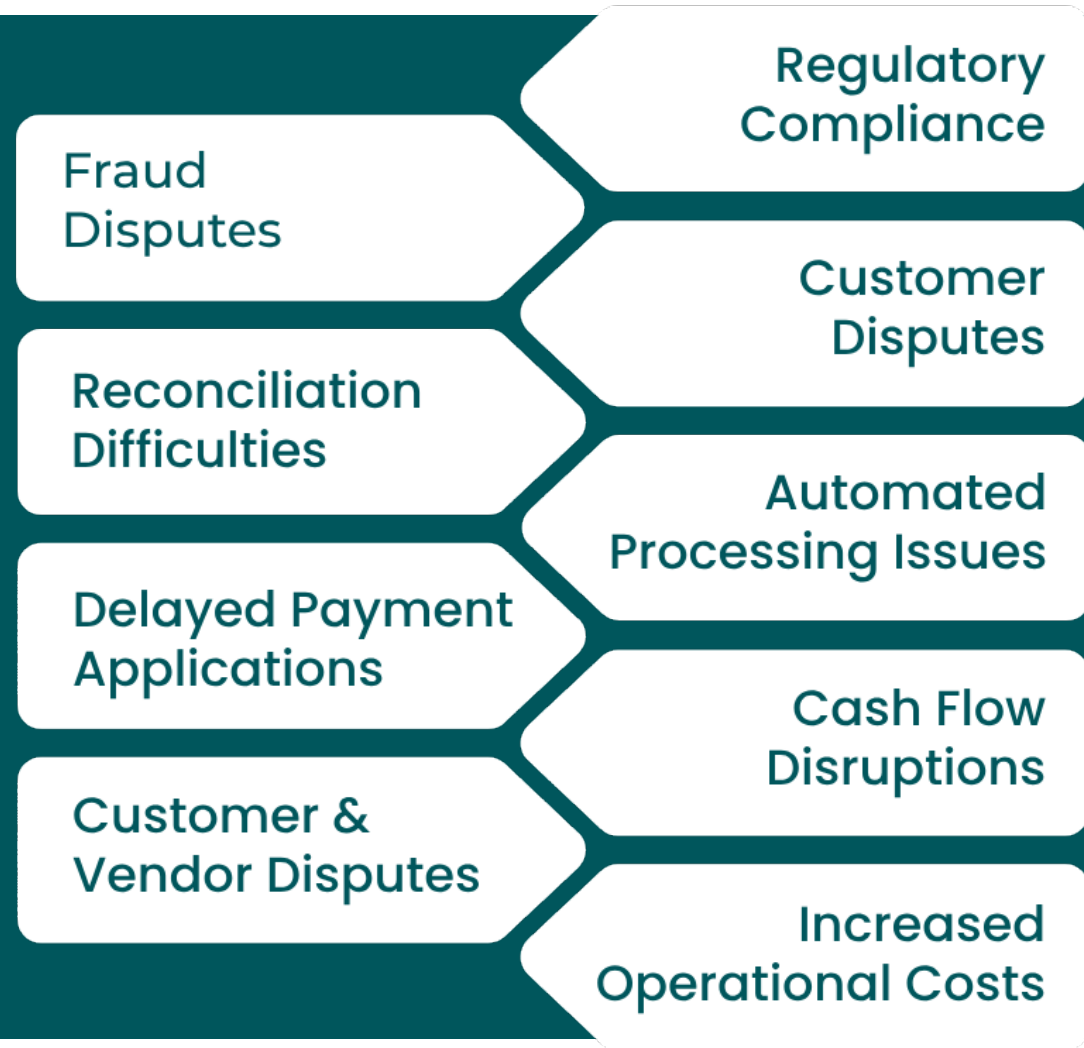
Each code is specifically assigned to transactions involving foreign currencies, elucidating the purpose behind the transaction.

```

<Cdtr>
  <Nm>ALEXANDRE KIMOCHI</Nm>
  <PstlAdr>
    <StrtNm>Mark Lane</StrtNm>
    <BldgNb>55</BldgNb>
    <PstCd>EC3R7NE</PstCd>
    <TwnNm>London</TwnNm>
    <Ctry>GB</Ctry>
  </PstlAdr>
  <Id>
    <OrgId>
      <LEI>4568951</LEI>
    </OrgId>
  </Id>
</Cdtr>
<CdtrAcct>
  <Id>
    <IBAN>GB29NWBK60161331926819</IBAN>
  </Id>
</CdtrAcct>
<Purp>EDUC</Purp>
<RmtInf>
  <Strd>
    <RfrdDocInf>
      <Tp>
        <CdOrPrtry>
          <Cd>TRAD</Cd>
        </CdOrPrtry>
      </Tp>
      <Nb>ABCD1234</Nb>
    </RfrdDocInf>
  </Strd>
</RmtInf>
</CdtTrfTxInf>
  
```

Challenges

Achieving standardization in MT103 message formats has proven challenging due to the prevalent use of free format text.



Mandates

Purpose codes are 4 letter codes indicating the classification and category for the payment.

The Bank of England has [released purpose codes](#) as part of its RTGS Renewal Programme.

Examples include:

BKFE : Bank Loan Fees

BKIP : Bank Loan Accrued Interest Payment

DEPT : Deposit (cash management)

In addition, current free format / unstructured Remittance information used in MT field 70's and carried forward in MX as USTRD fields will also need restructuring as per granular ISO 20022 data fields under the following <RMTINF> categories:

- Referred Document Information
- Referred Document Amount
- Creditor Reference Information
- Invoicer
- Invoicee
- Tax Remittance Garnishment

Implementation Challenges: Resource Intensive

While many banks have planned extensive educational activities, process reviews and channel updates to help avoid these structured purpose and remittance information related impact, it is likely to be difficult to force client behavior changes through channel systems.

Financial institutions will find the most efficient and scalable model of implementing change to be through the approaches presented in this paper.

The Changes

Unstructured Remittance Info.:

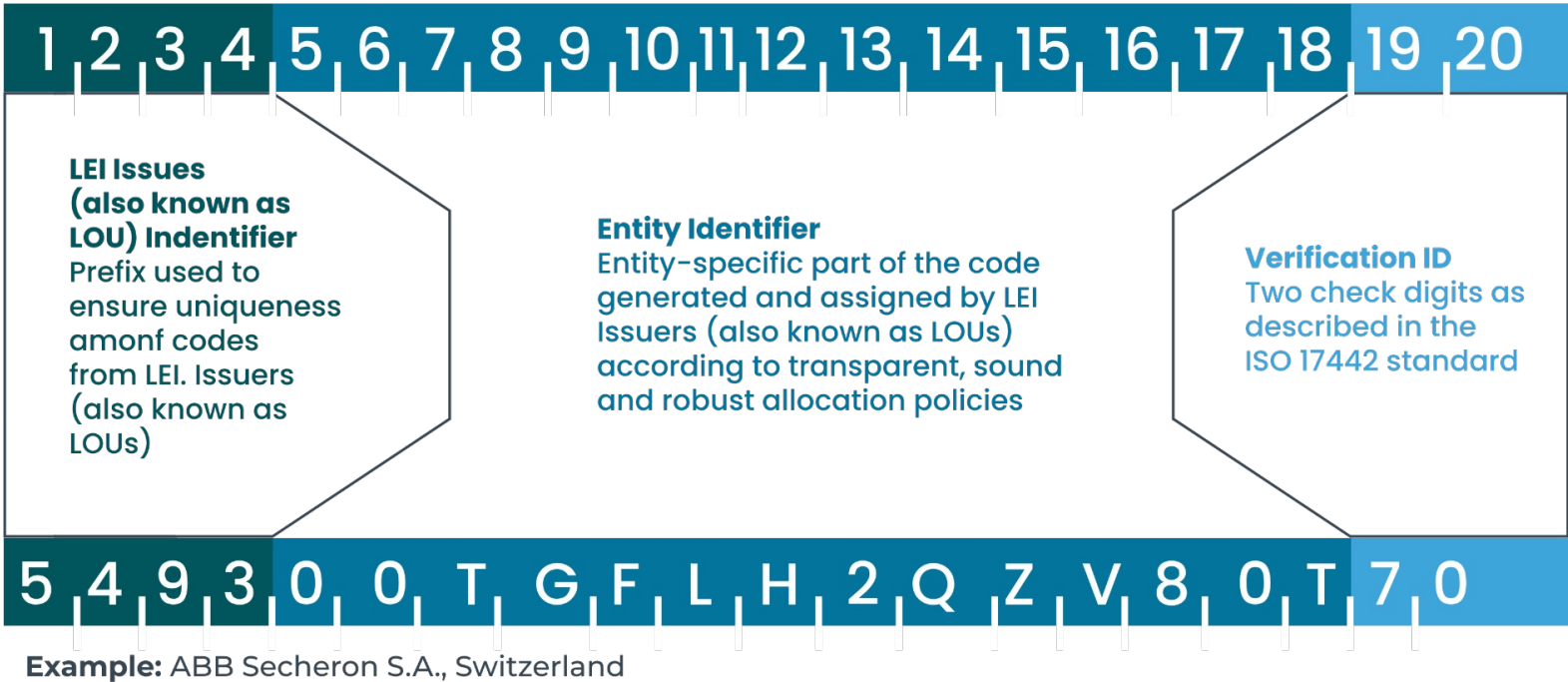
```
<Cdtr>
  <Nm>ALEXANDRE KIMOCHI</Nm>
  <PstlAdr>
    <StrtNm>Mark Lane</StrtNm>
    <BldgNb>55</BldgNb>
    <PstCd>EC3R7NE</PstCd>
    <TwnNm>London</TwnNm>
    <Ctry>GB</Ctry>
  </PstlAdr>
  <Id>
    <OrgId>
      <LEI>4568951</LEI>
    </OrgId>
  </Id>
</Cdtr>
<CdtrAcct>
  <Id>
    <IBAN>GB29NWBK60161331926819</IBAN>
  </Id>
</CdtrAcct>
<Purp>OVERSEAS EDUCATION</Purp>
<RmtInf>
  <Ustrd>
    MARCH TRADE</Ustrd>
  </RmtInf>
</CdtTrfTxInf>
```

Structured Remittance Info.:

```
<Cdtr>
  <Nm>ALEXANDRE KIMOCHI</Nm>
  <PstlAdr>
    <StrtNm>Mark Lane</StrtNm>
    <BldgNb>55</BldgNb>
    <PstCd>EC3R7NE</PstCd>
    <TwnNm>London</TwnNm>
    <Ctry>GB</Ctry>
  </PstlAdr>
  <Id>
    <OrgId>
      <LEI>4568951</LEI>
    </OrgId>
  </Id>
</Cdtr>
<CdtrAcct>
  <Id>
    <IBAN>GB29NWBK60161331926819</IBAN>
  </Id>
</CdtrAcct>
<Purp>EDUC</Purp>
<RmtInf>
  <Strd>
    <RfrdDocInf>
      <Tp>
        <CdOrPrtry>
          <Cd>TRAD</Cd>
        </CdOrPrtry>
      </Tp>
      <Nb>ABCD1234</Nb>
    </RfrdDocInf>
  </Strd>
</RmtInf>
</CdtTrfTxInf>
```

ISO 17442

The LEI, a 20-digit alphanumeric code following ISO 17442, uniquely identifies legal entities.

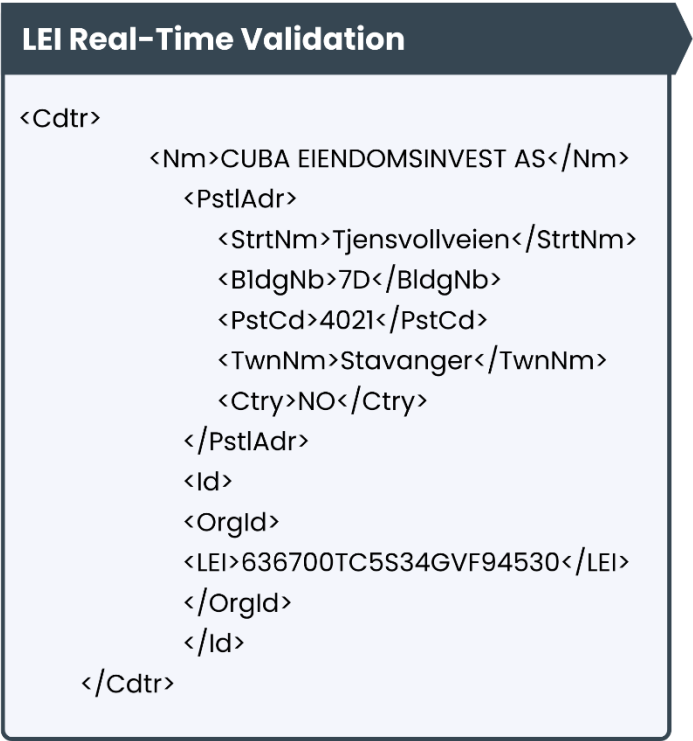


Although devoid of inherent intelligence, it is linked to reference data, allowing singular identification and providing insights into ownership structures.

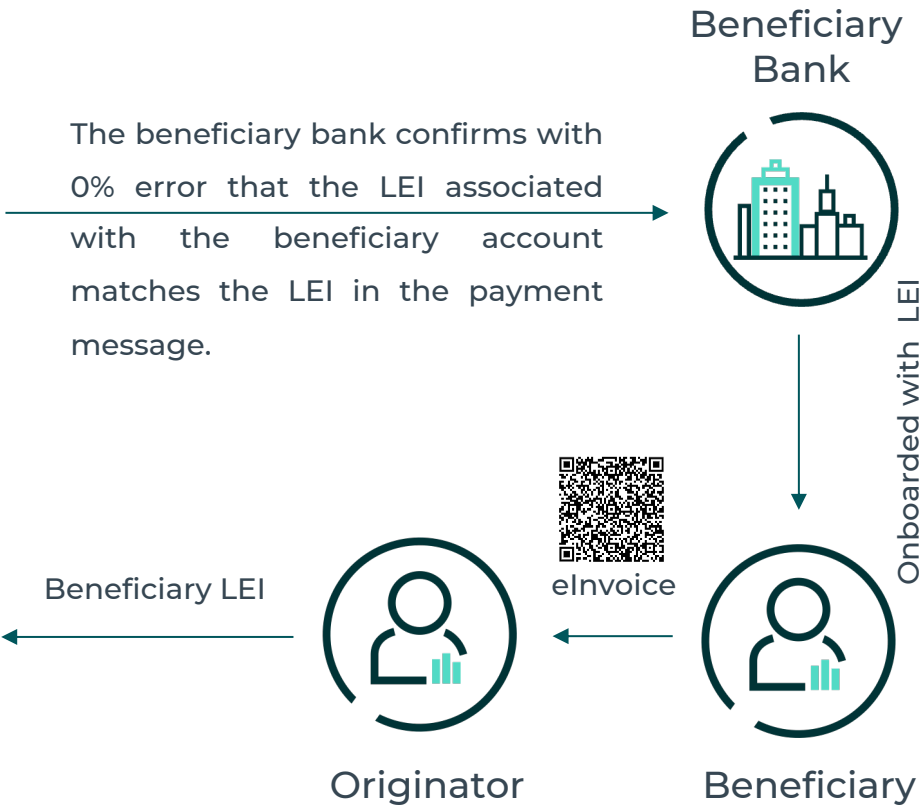
Benefits



ISO 17442



The name and address information is pulled directly from the Global LEI System via GLEIF API. It unambiguously identifies the country code as 'US', with 'Cuba' being part of the business name 'Nm", a false positive compliance hit should not occur.



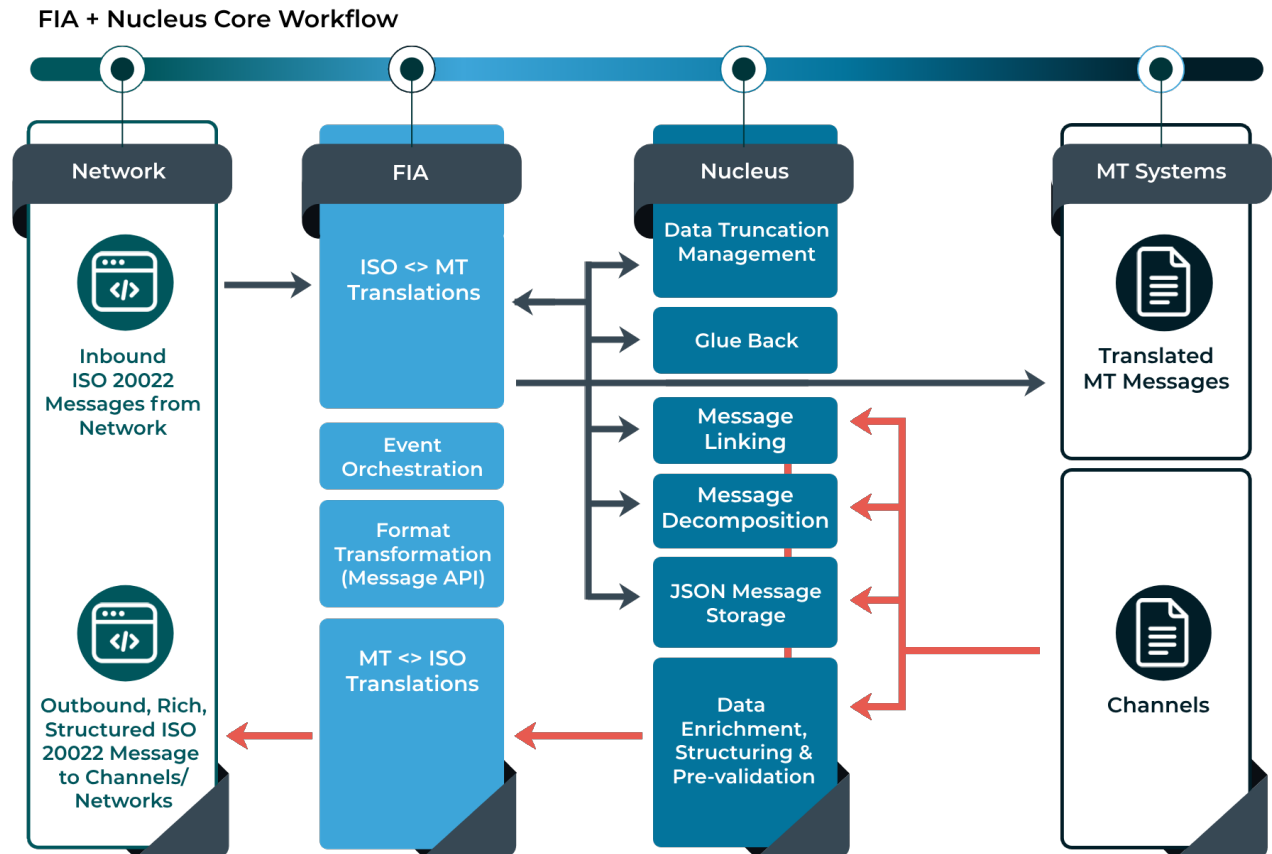
Originator confirms Beneficiary LEI matches its supplier profile



ENABLING DATA RICH PAYMENTS

Fiorano's ISO 20022 Middleware and Nucleus ISO 20022 Data Fabric collectively form a centralized ISO 20022 native environment which:

- ✓ Manages incoming and outgoing translations & transactions.
- ✓ Facilitates data structuring and validations, and
- ✓ Drives innovation based on ISO 20022 data principles.



Individually, both products offer critical features essential for payments modernization, serving as a bridge between current MT / FIN based and emerging payment architectures.

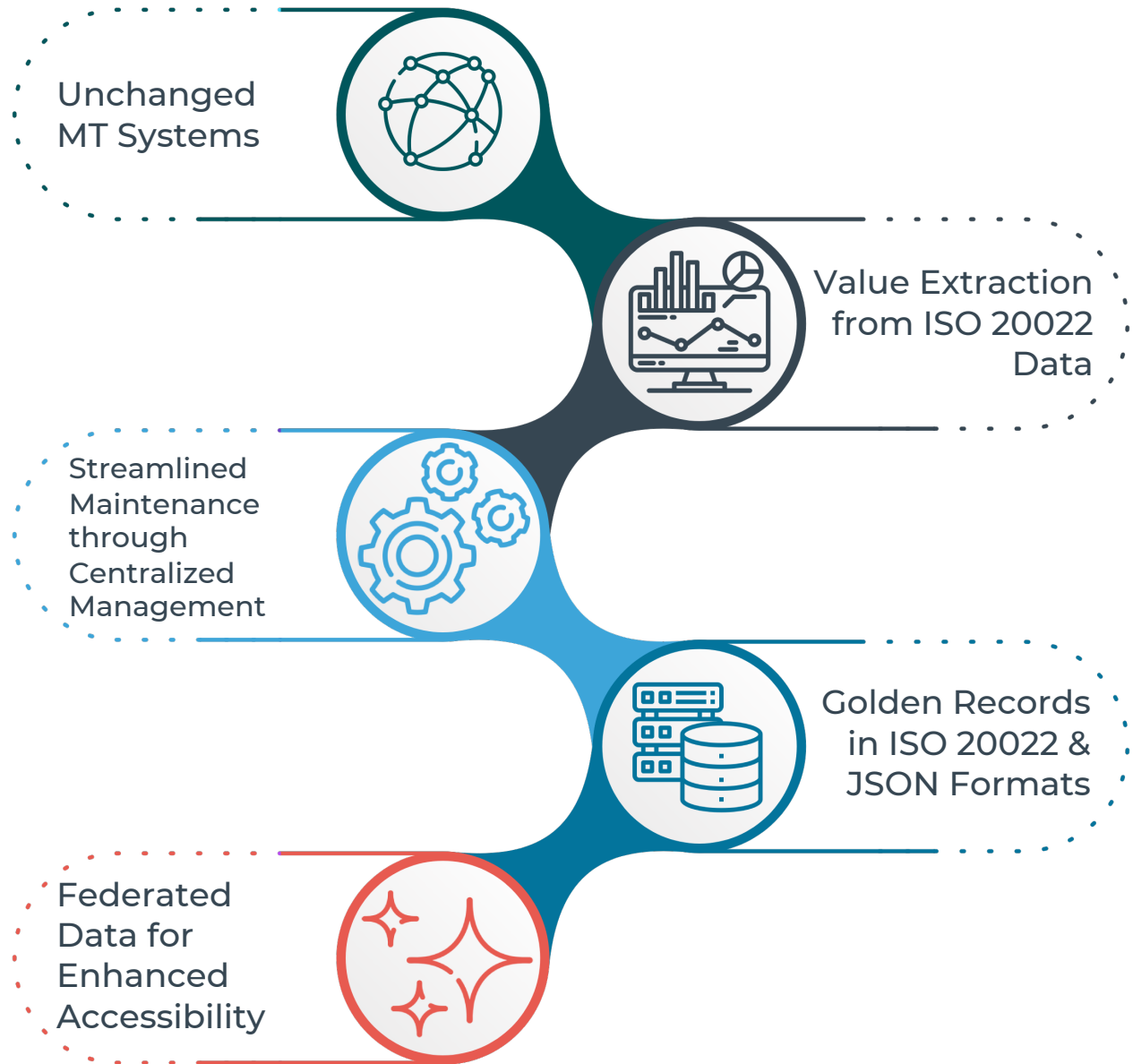
When incorporated into a centralized payments system, FIA + Nucleus offers institutions an instant means to comply with outgoing structured data requirements, avoiding expensive and disruptive upgrades.

While core upgrades may not be the primary choice for many banks initially, a centralized ISO 20022 data environment brings significant additional features and benefits.

To fully reap the advantages of ISO 20022, embracing a new ISO 20022 native data layer is essential, providing superior tactical and long-term strategic value.

Benefits

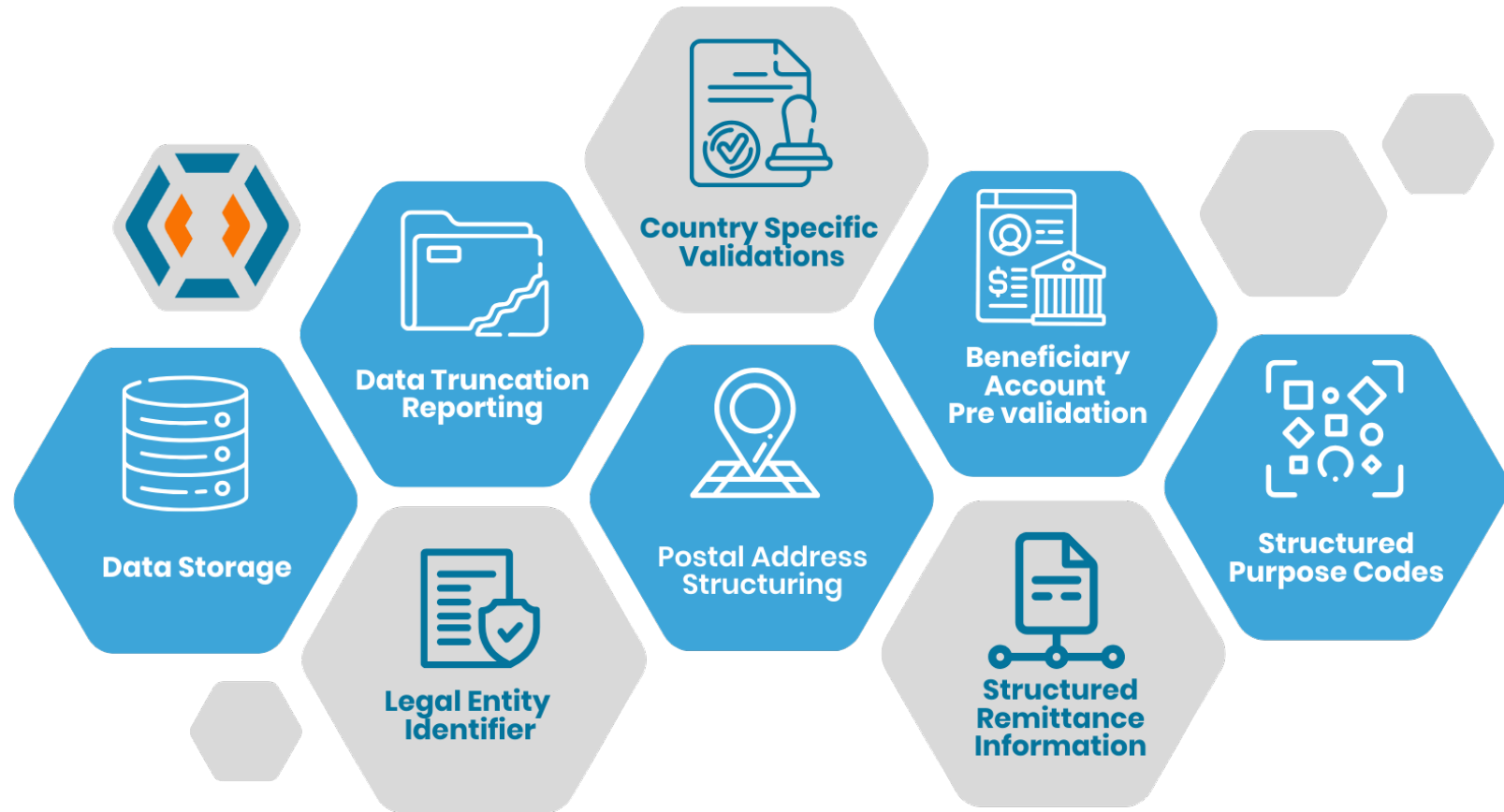
Complementary functionality provided by Fiorano and Nucleus provides adopting organizations with a centralized, unified environment for ISO 20022 translations, ISO 20022 data, and ISO 20022 derived business intelligence.





NUCLEUS ISO 20022 DATA FABRIC

Nucleus is ISO 2002 native, AI powered Data Fabric, which supports global ISO 2002 migrations through rich ISO 2002 data.



Nucleus utilizes machine learning to drive value from ISO 20022 migration.

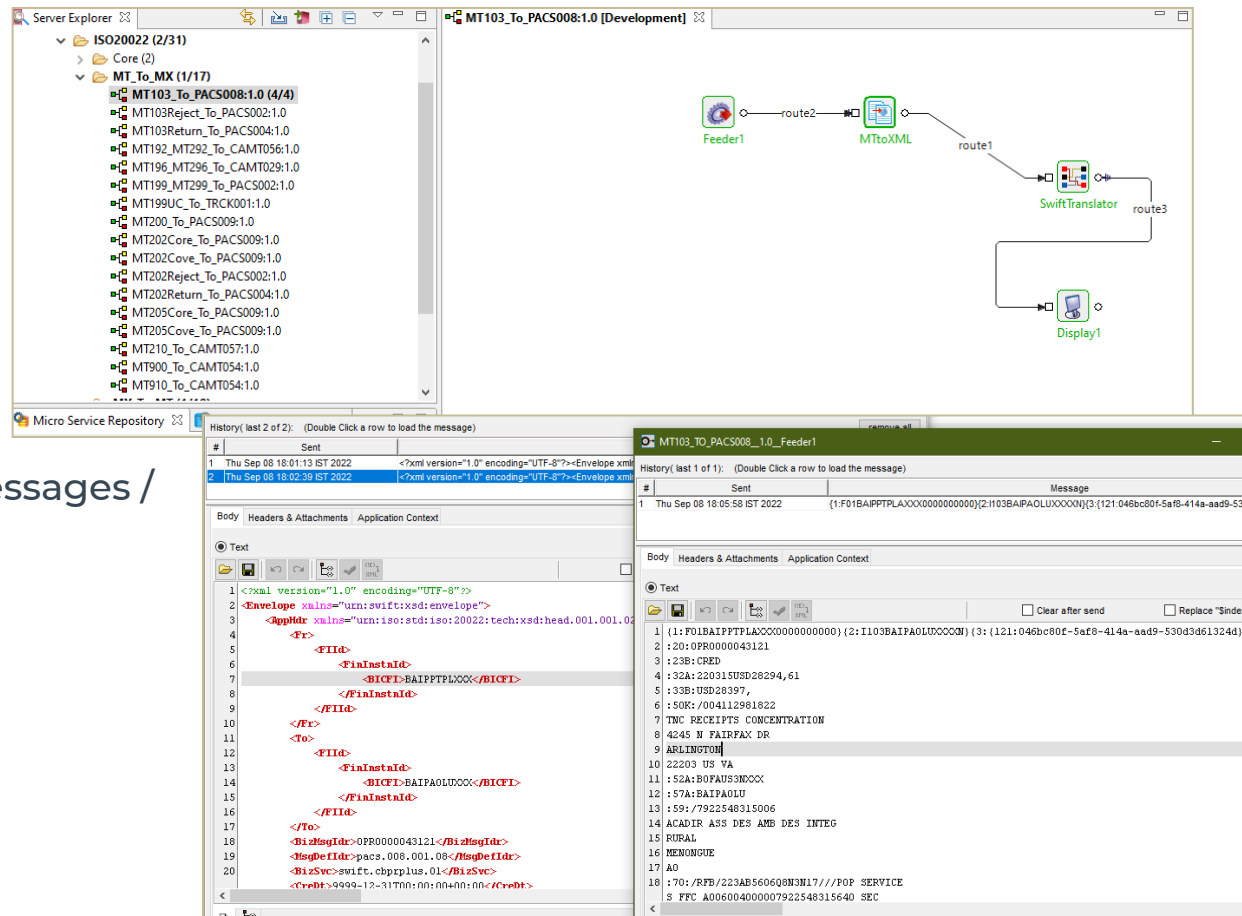
Nucleus seamlessly integrates with middleware platforms, allowing financial institutions to benefit from data validation, structuring, standardization, and enrichment capabilities.



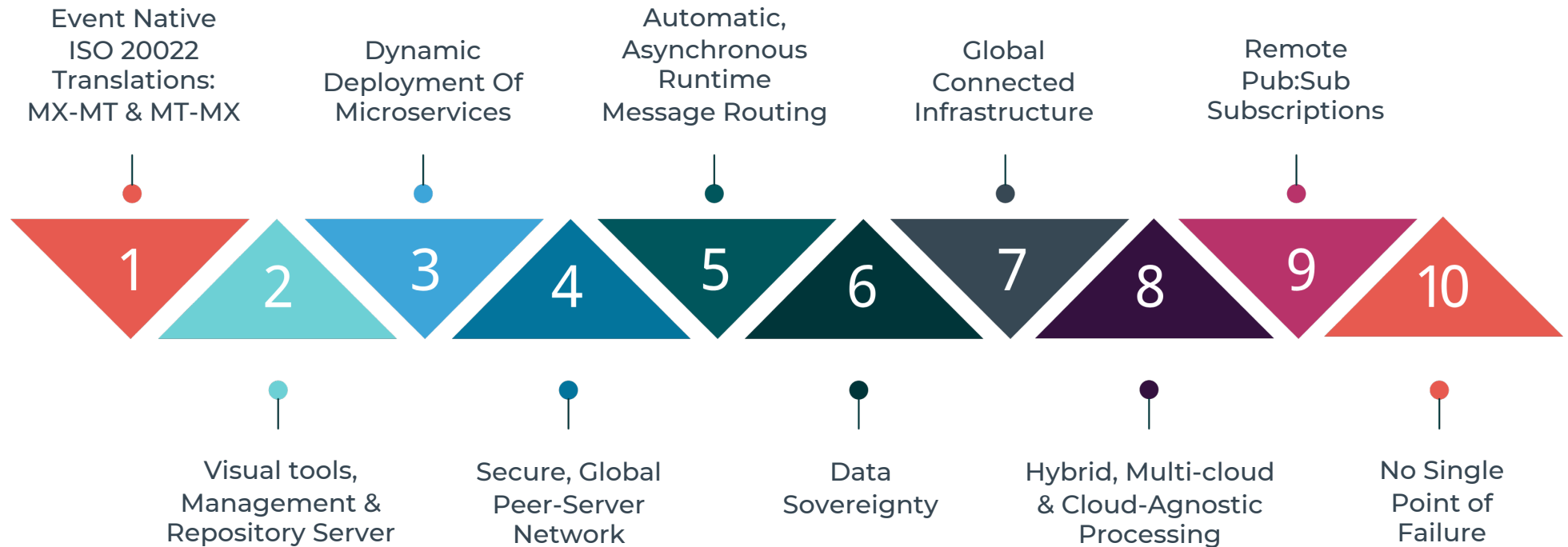
**FIORANO
ISO 20022
ACCELERATOR**

Fiorano's SWIFT listed ISO 2022 middleware (FIA) offers fast compliance to CBPR+ requirements and is extensible to other schemes, domains and message formats:

- ✓ Plug-and-Play.
- ✓ CBPR+ ready.
- ✓ Pre-built **MX > MT** and **MT > MX** translations.
- ✓ No development required.
- ✓ No-code integration studio.
- ✓ Multi-format: API / Streaming / Messages / FTP.
- ✓ Event native: Pub Sub



Built on Fiorano's underlying [Cloud Native Integration](#) (CNI) platform, its capabilities and benefits extend considerably beyond the scope of ISO 20022 translations, offering the best of [traditional middleware](#), [iPaaS](#) and [enterprise grade API and microservices infrastructure](#).



```
import java.io.FileNotFoundException;  
import java.io.PrintWriter;  
  
public class GenerateDummyCode {  
    public static void main(String[] args) {  
        String newLine = "\n";  
        String closeBracket = "}";  
        String temp = null;  
        int size = 10000;  
        for (int i = 0; i <= size; i++) {  
            temp = String.format("System.out.println(\" %6d - ci satis\");", i);  
            dummyContent += tab + tab + temp + newLine;  
        }  
    }  
}
```

Fiorano's no-code platform has been an active component in global banking modernization programs for more than 15 years.

```
        closeBracket = newLine + newLine +  
        tab + mainStart + newLine + newLine +  
        closeBracket + newLine;  
    }  
    try {  
        System.out.println("File not found");  
        out.println(outputCode);  
    } catch (FileNotFoundException e) {  
        System.out.println("File not found");  
    }  
}
```

In today's world of connected banking propositions, it helps organizations innovate and run faster than ever before, allowing innovation driven enterprises to rapidly deploy global, hybrid and where-necessary multi-cloud applications at speed and at scale.

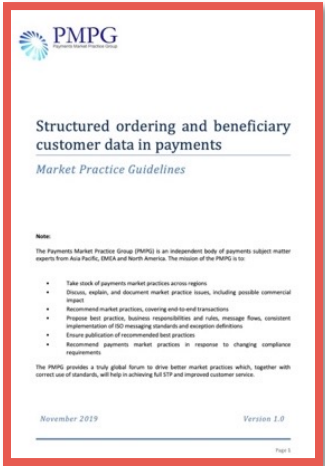




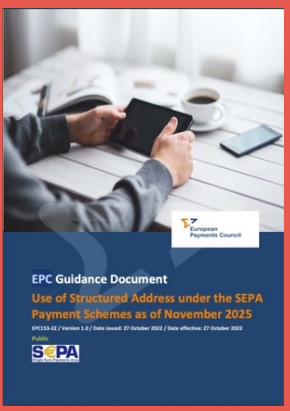
REFERENCES

Payments Market Practice Group (PMPG):

Structured ordering and beneficiary customer data in payments.



IMPACT:
Impact summary, specifications & illustrations for structured address requirements

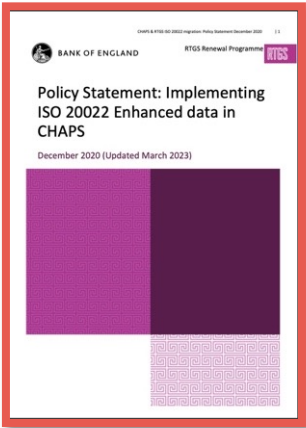


European Payments Council:

Use of Structured Address under the SEPA Payment Schemes as of November 2025

Bank of England: ISO 20022:

Policy Statement: Implementing ISO 20022 Enhanced data in CHAPS.



IMPACT:
From Phase 1, June 2023:

- CHAPS DPs initiating payments to use Structured Addresses for UK-to-UK, payments.
- CHAPS DPs to work with indirect participants to ensure when they are the originating PSP, to provide Structured Addresses.

As SWIFT switches off MT messages:
• Mandatory for all DPs to use Structured Addresses for all payments.

AUSTRAC:

IFTI-E single report data entry guide for reporting ISO 20022 messages

IMPACT:
Mandatory enhancements to postal addresses, to contribute to robust travel rule validation and the mitigation of false positives during OFAC screening.



Bank for International Settlements:

ISO 20022 harmonization requirements for enhancing cross-border payments.

IMPACT:
Common, minimum level of structured postal address information, avoiding unstructured free formatted address options.



CONTACT

Nucleus ISO 20022 Data Fabric is from **Nth Exception**, a boutique payments technology and consulting firm headquartered in London.

Nth Exception works with Banks and Financial Institutions globally to help navigate the complexities of ISO 20022 and leverage next-generation payments technologies to streamline operations, deliver compelling new customer propositions, improve risk management and stay competitive.

For more information, visit www.iso20022.ai or www.nthexception.com, and follow us on LinkedIn.

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United Kingdom

Fiorano Software is a specialist Banking ISV, headquartered in Singapore, with offices globally.

Fiorano's products have been used by Banks, and in mission critical enterprises (including healthcare and defence) all over the world, since 1996.

Fiorano technology is routinely used in some of the most innovative banking modernisation, financial inclusion and API projects in the world.

For more information, visit www.fiorano.com/banking, and follow us on LinkedIn.

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