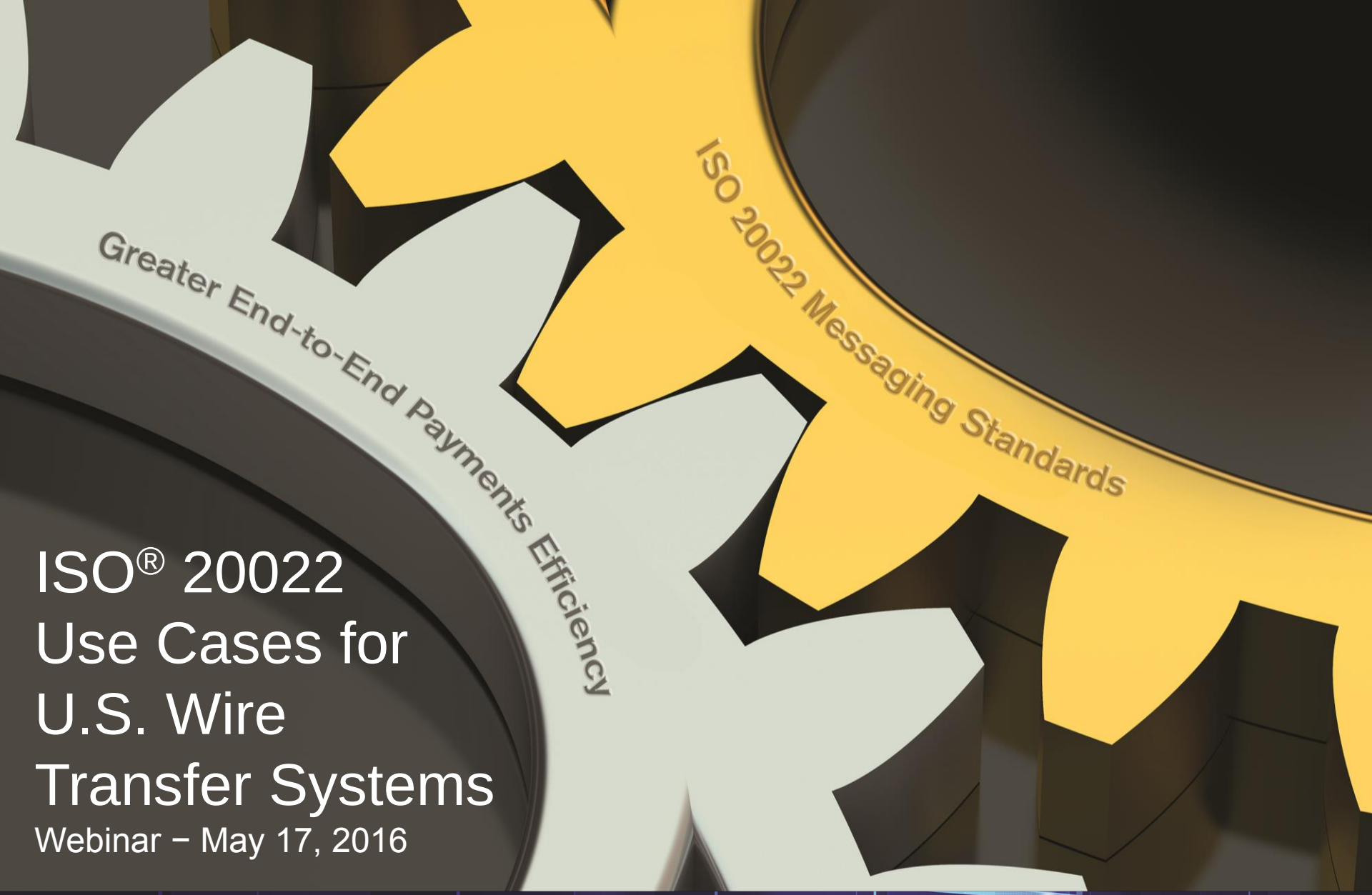

ISO® 20022 Use Cases for U.S. Wire Transfer Systems

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Executive Summary

The Case for U.S. Wire Transfer Systems to Adopt ISO 20022

U.S. Wire Transfer Systems Intend to Adopt ISO 20022

- Adoption of ISO 20022 messages for U.S. wire transfer systems is a ***strategic imperative*** and no longer a question of "if" but of "when" and "how".

- When?
  - The Federal Reserve Banks and The Clearing House (TCH) have announced a high-level strategy to begin the conversion to the ISO 20022 message format for both inputs and outputs for their wire transfer systems in **2020**.

- How?
  - The Federal Reserve Banks and TCH each plan to implement mandated phases for conversion and a sunset date for their legacy formats.

Strategic reasons to adopt ISO 20022 messages for U.S. wire transfer systems

- The U.S. needs to invest in the future to modernize the message formats for wire transfer payments in order to meet increasing demands for richer data, more easily comply with evolving regulatory requirements, improve interoperability given a global economy, and provide enhanced services to clients.

- The ISO 20022 format has characteristics that can help the U.S. payments market meet these needs.

- Provides richer data
  - ISO 20022 format contains structured fields to support longer names and specific address components, including a country code, which can reduce data loss and improve the regulatory screening process.
  - ISO 20022 format supports a structured format for extended remittance information, which could improve straight-through processing for corporate business-to-business payments.

Strategic reasons to adopt ISO 20022 messages for U.S. wire transfer systems

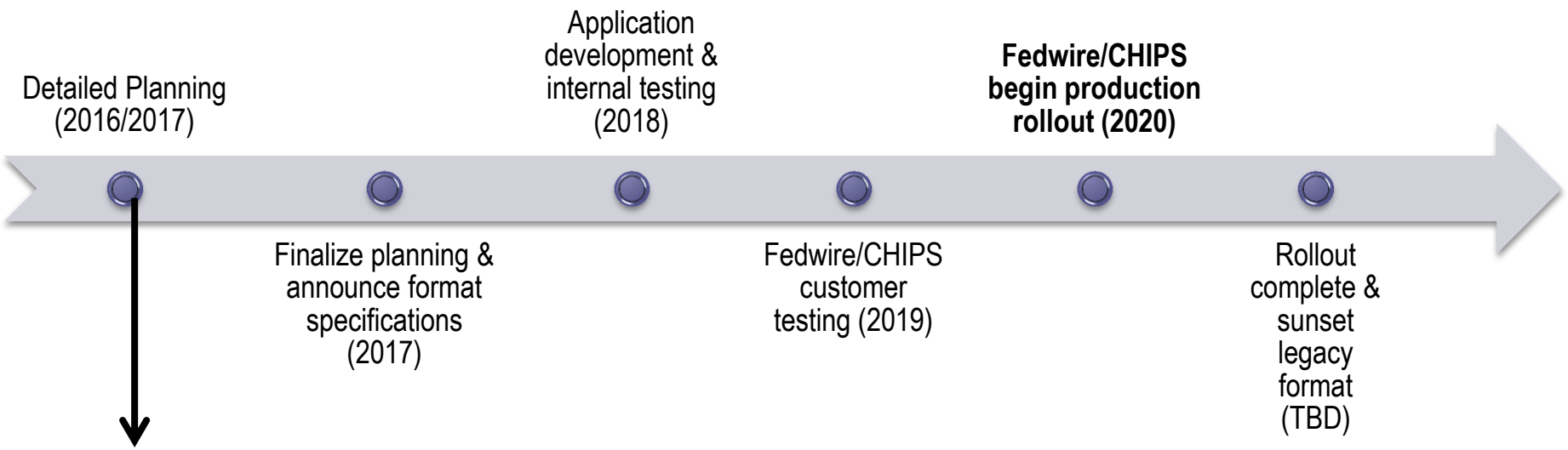
- Promotes domestic & cross-border interoperability
  - A common format promotes ease of transacting domestically and globally by using a single, open standard rather than multiple proprietary standards, which require mapping and can be costly and cumbersome for banks, corporates and vendors.
  - ISO 20022 format contains fields that are common across the suite of ISO 20022 payment messages so that the same information can be carried end to end through the payment chain, which could increase accuracy and straight-through processing and reduce operating costs for all participants.
  - Other payments markets, including those of key U.S. trading partners, have gone live with ISO 20022 (Japan, India, China) or are in the development stages of implementing ISO 20022 (Switzerland, Europe, Canada). See Appendix 1.
- Provides opportunities to improve existing processes or add new services
  - Reduce the need for market practices that arise due to inconsistent formats and field and/or message capacity limitations
  - Improve extended remittance information capabilities
  - Consider value-added services (e.g., payment tracking & prioritization, administrative and reporting functions)

Potential Adverse Consequences of Not Adopting ISO 20022 Messages

- U.S. payment systems could fall behind the rest of the world and be perceived as “outdated,” which could:
  - Degrade the U.S. dollar’s leadership as a global settlement currency
  - Encourage migration of U.S. dollar clearing offshore, to other currencies, or to emerging payment systems built with new technologies.

ISO 20022 for U.S. Wire Transfer Systems

Preliminary High-Level Timeline



Detailed Planning Activities

- Define project teams, detailed project plans, and timelines
- Develop customer communications plans
- Ensure ISO 20022 can accommodate everything needed for the Fedwire® Funds Service & CHIPS® wire transfer systems
  - Identify the specific ISO 20022 messages and fields that will be needed
  - Could provide opportunity to streamline processes or eliminate messages with little or no usage
  - May identify changes needed to ISO message formats
- Collaborate with the industry to identify, prioritize & design enhancements that will be included in implementations
- Define format specifications/message implementation guides & validate with industry

Conclusion

- The U.S. has long led the international payments market and actively participated in the development of the next generation of messaging standards.
- Other payments markets, including those of key U.S. trading partners, have gone live with ISO 20022 or are in the development stages of implementing ISO 20022.
- The Federal Reserve Banks and TCH are each committed to begin the conversion to ISO 20022 for their wire transfer systems in 2020.
- The Federal Reserve Banks and TCH plan to continue to collaborate with global ISO 20022 efforts to help ensure interoperability.

Detailed Use Cases for Adopting ISO 20022 Messages for U.S. Wire Transfer Systems

ISO 20022 Use Cases for U.S. Wire Transfer Systems

Use Case	Limitations of Current Wire Formats	ISO 20022 Benefits
Compliance with domestic & global regulatory requirements	▪ Name limited to 35 characters, which can lead to either data truncation or carry-over data being mapped to other free-text fields. ▪ Free-text address fields. ▪ No discrete field for country code, which makes regulatory screening for sanctioned countries more difficult.	To comply with existing and evolving regulatory requirements, complete origination and beneficiary name and address information is critical. The ISO 20022 format has characteristics that make it easier to identify full name and address information in the payment message. Specifically, the ISO 20002 format: ▪ Includes consistent, user-friendly field names and has discrete fields to support specific data elements, several of which can be critical for proper regulatory screening (e.g. structured address fields, including a country code; see example in Appendix 2). Also contains discrete timestamp fields to make it easier to comply with liquidity reporting requirements. ▪ Provides more capacity to allow for longer names (i.e., up to 140 characters) to reduce data loss, which is critical for proper regulatory screening and can improve straight-through processing and reduce compliance costs. ▪ Provides banks that act as intermediaries with an effective way to identify missing information in cross-border wire transfers to enable them to take actions accordingly in a timely manner.

ISO 20022 Use Cases for U.S. Wire Transfer Systems

Use Case	Limitations of Current Wire Formats	ISO 20022 Benefits
Domestic & cross-border interoperability	▪ The Fedwire Funds Service and CHIPS wire payment systems and SWIFT® messaging system have propriety message formats. ▪ While the formats are mostly interoperable, each format has its own unique field tag names & characteristics. ▪ Banks that participate in more than one system must maintain mapping routines to ensure that data is mapped correctly between systems. ▪ Global banks also need to ensure they can map to other systems outside the U.S. to support cross-border payments. ▪ Whenever wire format changes are made, banks must update all systems or develop market conventions for mapping to or from systems that haven't changed. ▪ In 2020, SWIFT will eliminate the free-format options in fields 50, Ordering Customer, and 59, Beneficiary Customer, and only support the structured format option for those fields.	Moving to a common ISO 20022 format for both major wire systems in the U.S. that would be compatible with the ISO 20022 messages that could be carried over the SWIFT network could **reduce or eliminate** the: ▪ Gaps between different systems, which can result in data truncation. ▪ Costs associated with maintaining mapping routines and market conventions to accommodate different formats. ▪ Costs associated with maintaining MT 103 and MT 103+ formats.

ISO 20022 Use Cases for U.S. Wire Transfer Systems

Use Case	Limitations of Current Wire Formats	ISO 20022 Benefits
Negative business case	As other markets outside the U.S. adopt ISO 20022 payment messages (see Appendix 1), banks and their corporate customers engaged in global trade will need to make system changes to accommodate the ISO 20022 upgrades in those markets. Lack of cross-border interoperability could lead to: ▪ Perception that U.S. is an outlier with outdated payment systems. ▪ U.S. dollar becoming less attractive as a global currency. ▪ Increased risk of migration of U.S. dollar clearing business to offshore dollar clearing arrangements that become capable of conducting transactions in the ISO 20022 format over time. ▪ Counterparties deciding to conduct transactions in other currencies in markets that have already migrated to ISO 20022.	Adoption of ISO 20022 in the U.S. could: ▪ Modernize payment message formats with a common data dictionary that can be used across different message suites and business domains (i.e., trade, payments, FX, cards, cash management, corporate actions). ▪ Make it easier for global banks and corporates to conduct transactions across different markets. ▪ Reduce costs associated with having to maintain multiple formats to accommodate markets that have not yet adopted the ISO 20022 payment message format. ▪ Prevent migration of U.S. dollar payments to offshore clearing arrangements or other currencies, which may help the U.S. dollar remain attractive as a global currency.

ISO 20022 Use Cases for U.S. Wire Transfer Systems

Use Case	Limitations of Current Wire Formats	ISO 20022 Benefits
Single end-to-end payment file format	On the *payment origination* side: ▪ Some corporations send commingled payment files (i.e., in EDI 820 or ISO 20022 format) to instruct their banks to make various payment types (e.g., wire, ACH, check). ▪ The banks then need to convert these instructions to the appropriate format for the respective payment system, which today involves separate formats for wire, ACH, and check. On the *payment receipt* side: ▪ Banks need to be able to receive different formats from the major wire transfer systems. ▪ Banks then need to convert those instructions to other formats (e.g., BAI format or proprietary format) to deliver payment information to beneficiaries.	The ISO 20022 format: ▪ Has sufficient data fields to support a single, uniform format for high-value, low-value, and emerging real-time retail systems. ▪ Contains fields that are common across the suite of ISO 20022 payment messages so that the same information can be carried end to end through the payment chain as follows: ➢ Payment initiation (corporate to bank) ➢ Interbank settlement (bank to bank) ➢ Cash management (bank to corporate) ▪ Could allow corporations, their banks, and intermediaries to exchange payments in the same format regardless of the type of system they are using to process the payment.

ISO 20022 Use Cases for U.S. Wire Transfer Systems

Use Case	Limitations of Current Wire Formats	ISO 20022 Benefits
Consistent format for extended remittance information (ERI)	The U.S. does not have a uniform format for ERI: ▪ ACH systems use both legacy ERI formats (i.e., EDI, STP 820), as well as XML and ISO 20022 REMT 001 structured remittance. ▪ ERI for wire payments was introduced in November 2011, but adoption has been limited. ▪ Numerous ERI formats prevent uptake of ERI in a consistent way because banks, corporations, and their vendors need to make changes to support and maintain each format.	ISO 20022 provides a consistent, structured format to carry ERI within the payment message and supports the end-to-end payment flow from the originator to the beneficiary, which could: ▪ Make end-to-end adoption of ERI easier. ▪ Increase the likelihood that when an originator sends ERI, the beneficiary can receive and process it. ISO 20022 also now has a standalone remittance advice message (i.e., REMT) for banks that want to deliver remittance information outside of the payment message.

ISO 20022 Use Cases for U.S. Wire Transfer Systems

Use Case	Limitations of Current Wire Formats	ISO 20022 Benefits
End-to-end payment tracking	Each party to a payment transaction has limited visibility into the end-to-end transaction flow to ensure the payment was successfully processed from the originator to the beneficiary.	The ISO 20022 payment and cash management messages: ▪ Contain an end-to-end ID and structured messages (e.g., status messages, return messages) to support real-time payment tracking and reporting, which could provide a revenue opportunity for banks. ▪ Can enable a central utility to provide banks and/or their customers with information about the status of their payments.

ISO 20022 Use Cases for U.S. Wire Transfer Systems

Use Case	Limitations of Current Wire Formats	ISO 20022 Benefits
Next-generation workforce	As seasoned format experts change jobs or retire, maintaining staff with expertise on legacy proprietary formats becomes more challenging and costly.	XML is a modern language that has become mainstream for the millennials. An XML format is easier to use with modern programming tools. Upgrading to a common, XML-based format for payment messages could make it easier to attract and retain resources and expand the knowledge base of formatting experts in the payments industry.

ISO 20022 Use Cases for U.S. Wire Transfer Systems

Use Case	Limitations of Current Wire Formats	ISO 20022 Benefits
Enhanced corporate capabilities	Current wire formats: ▪ Require corporates to maintain multiple formats to communicate with their multiple banking partners for both payment initiation and cash management reporting. • Have many free-text fields and size limitations, which can lead to data truncation or data appearing in other free-text fields in an inconsistent manner. ▪ Do not provide banks with a mechanism to easily provide end-to-end payment tracking services to corporates. While current wire formats support up to 9,000 characters of extended remittance information (ERI), banks and vendors have not made the necessary investments to support ERI in wire transfer payments due to the proprietary nature of the Fedwire Funds Service and CHIPS messages formats and because the SWIFT MT format only supports up to 140 characters for remittance information in the MT 103 message. Some large global corporates demand that their banking partners support XML messages for payment initiation and cash management reporting. Over time, these corporates may only do business with banks that can support XML.	Contains discrete, structured fields with more capacity to support specific data elements and richer data (e.g., longer names, address data elements, ERI, purpose codes) that are common across the suite of ISO 20022 payment messages so that the same information can be carried end to end from the corporate originator to the beneficiary. Could reduce exceptions and improve straight-through-processing of wire payments. Makes it easier for global corporates to conduct transactions across different markets that are also moving toward ISO 20022. Has messages that support trade financing, electronic bank account management (EBAM), and bank services billing (BSB). Could allow corporations to send all their payments in a single payment file to their banks. Could reduce costs associated with maintaining multiple formats. Can enable end-to-end payment tracking services. Is already supported by many enterprise resource planning (ERP) systems and Treasury management systems.

ISO 20022 Adoption Efforts for High-Value Payment Systems[1]

Jurisdiction	High-Value Payment System	Operator	ISO 20022 Implementation Date
Australia	RITS	Reserve Bank of Australia	No public information available
Bangladesh	RTGS in Bangladesh	Bangladesh Bank	Live since November 2015
Brunei	Brunei RTGS	AMDB - Monetary Authority of Brunei Darussalam (AMBD)	Live since November 2014
Canada	Large Value Transfer System (LVTS)	Canadian Payments Association	Planned but date not yet known
China	CNAPS2	People's Bank of China	Live since November 2014
Europe	Target 2	European Central Bank	Planned but date not yet known
Europe	European Banking Association (EBA) EURO1/STEP1	EBA Clearing	Planned but date not yet known
India	RTGS India	Reserve Bank of India	Live since December 2013
Japan	BOJ-Net	Bank of Japan	Live since October 2015
Switzerland	SIX Group - SIC	SIX Interbank Clearing	EuroSIC - Planned but date not yet known SIC - Planned live July 2016
United Kingdom	CHAPS	Bank of England & CHAPS Clearing Company Limited	No public information available
United States	Fedwire Funds Service	Federal Reserve Banks	Targeted to begin in 2020
United States	Clearing House Interbank Payments System (CHIPS)	The Clearing House Payments Company L.L.C.	Targeted to begin in 2020

[1]The table reflects status of ISO 20022 adoption efforts as of February 2016. See ISO 20022 Adoption mApp for latest updates.

ISO 20022 Example

Address information in proprietary format vs ISO 20022 format

The Fedwire Funds Service & CHIPS proprietary formats contains 3 free-text address lines for each of the various party fields in the message.	**The ISO 20022 format uses XML syntax and contains discrete fields designed to contain specific address information, which makes it easier to identify components of the address (e.g., country code).**
Address Line 1 (up to 35 characters) Address Line 2 (up to 35 characters) Address Line 3 (up to 35 characters)	Postal Address <PstlAdr> <AdrTp> (4 characters) <Dept> (up to 70 characters) <SubDept> (up to 70 characters) <StrtNm> (up to 70 characters) <BldgNb> (up to 16 characters) <PstCd> (up to 16 characters) <TwnNm> (up to 35 characters) <CtrySubDvsn>[1] (up to 35 characters) <Ctry> (2 characters) [1] This is equivalent to the states in the U.S.

Notices

- “ISO” is a registered service mark of the International Organization for Standardization.
- “Fedwire” is a registered service mark of the Federal Reserve Banks.
- “CHIPS” is a registered service mark of The Clearing House Payments Company L.L.C.
- “SWIFT” is a registered trademark of S.W.I.F.T. SCRL.

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