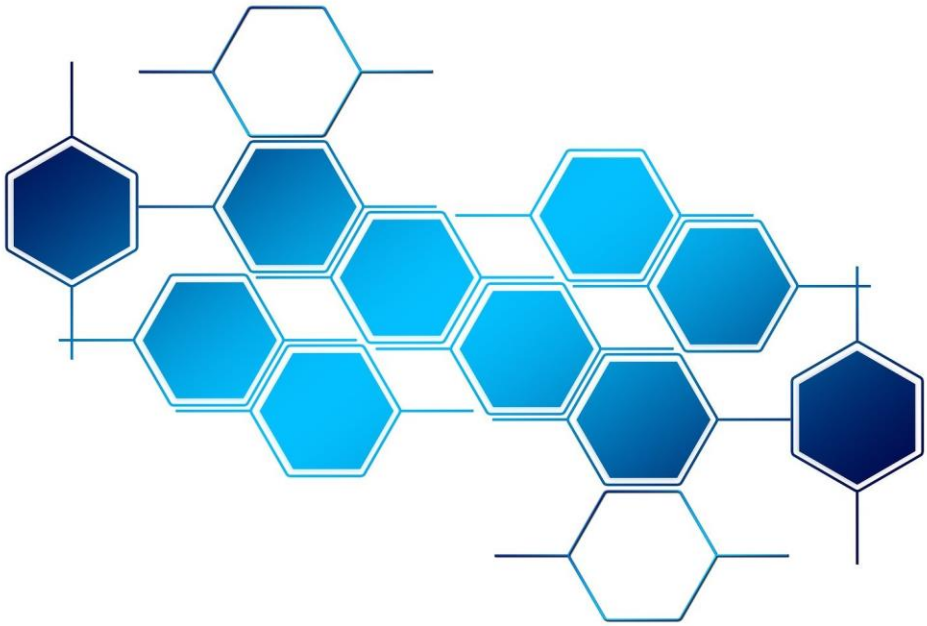

Accredited Standards Committee X9 – Financial Industry Standards

Program of Work

Accredited Standards Committee X9 Inc.
Financial Industry Standards ®

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1.0 X9 Disclaimers and Information

1.1 Copyright Notice

This Document is Published by:
Accredited Standards Committee X9, Financial Industry Standards
275 West Street, Suite 107
Annapolis, MD 21401 USA
Email: admin@x9.org
X9 Web Site: http://www.x9.org

1.2 Officers and Staff of X9

Officers:

Corby Dear	Chair of the X9 Board of Directors
Michelle Wright	Vice Chair of the X9 Board of Directors
Alan Thiemann	X9 Treasurer
Steve Stevens	Corporate Secretary and Executive Director of X9

Staff:

Janet Busch	Director of Operations and International Standards
Ambria Frazier	Manager of U.S. Standards and X9 Social Media
Lindsay Conley	Project Manager
Mark Tiggas	Payments Consultant

2.0 Introduction

The Accredited Standards Committee X9 ("X9") has approximately 400 member companies that provide over 1500 representatives that work on domestic and international standards and reports related to the financial services industry. X9 is accredited by the American National Standards Institute ("ANSI") to develop United States standards for the financial services industry and through ISO TC68 for the international financial services industry. X9's program of work ("POW") includes its American National Standards and technical reports, ISO TC68 standards and all whitepapers and documents approved by the X9 Consensus Body for release. This document captures the current POW for X9. If you have any questions, please contact staff at admin@x9.org.

2.1 Access to X9 Standards

X9's standards and technical reports are available for download on the ANSI Store (Click for ANSI Store). Some documents are free but there is a nominal charge for most. This helps to defray the cost of developing the documents. Whitepapers, position statements and press releases are all free and are available for download from the X9 web site.

2.2 Participation in Developing ANSI or ISO Standards

To participate in the development of an ANSI or ISO standard, requires a paid membership in X9. The fee for membership is used to support X9. Most X9 study groups and industry forums are open for public participation without having to pay to join X9. Contact X9 for more details.

2.3 A Brief History of X9

X9 was established in 1973 as an organization under the American Bankers Association (ABA). Initially, X9 focused on developing standards for the content and placement of information printed on the face of checks—standards that X9 continues to maintain today. Additionally, X9 created the CUSIP standard (X9.6), a financial identifier used for financial instruments. In 2001, X9 separated from the ABA and became an independent, non-profit organization. Today, X9 maintains or supports through ISO over 250 domestic and international standards.

2.4 X9 Governed PKI Solutions

In the first quarter of 2025, X9 will launch a groundbreaking service tailored to the financial industry. For over six years, X9 has worked to identify the best way to deliver PKI security certificates specifically designed for financial institutions. Traditionally, the financial industry relied on certificates intended for web browsers or managed the complex task of creating and supporting their own certificates.

To address these challenges, X9 has developed a new standard to govern the creation of PKI certificates for the financial sector. This standard currently outlines 34 distinct financial use cases. Additionally, X9 has partnered with a leading PKI certificate supplier that will create and market certificates that comply with the X9 standard and meet the diverse needs of these use cases.

Further details will be announced in the first quarter of 2025.

3.0 X9 Membership

As of January 17, 2025, X9 proudly includes over 400 member companies and more than 1,500 representatives actively contributing to our work. We deeply appreciate the dedication of all our member companies and their representatives.

We would like to extend special recognition to the companies listed below that are paid members of X9. Your support is invaluable, and X9 would not exist without it.

ACI Worldwide	MagTek, Inc.
Amazon	Marchant Advisory Group (MAG)
American Bankers Association	Marvell Asia Ptf
American Express	MasterCard Europe Sprl
Bank of America	Maximus
Bank of New York Mellon	Micro Focus
BankVOD	Morse
Bloomberg LP	NACHA The Electronic Payments Association
Burger, Carroll & Associates	National Grocers Association
Capital One	National Institute of Standards and Technology
CDP, Inc.	National Security Agency
Citi	Nautilus Hyosung
comForte 21 GmbH	Navy Federal Credit Union
Communications Security Establishment	NCR Atleos Corporation
Conduent	NCR Voyix
Conexxus	Office of Financial Research, U.S. Treasury Dept.
CUSIP Service Bureau	PCI Security Standards Council
Deluxe Corporation	PNC
Diebold, Inc.	Publix
Digicert	Qrypt
Discover Financial Services	Quantum Bridge Technologies
DT2PS	Rosetta Technologies
FactSet	Safari SOP
Federal Reserve Bank	Source Technologies
First National Bank of Omaha	SWIFT
FirstBank	Taylor Communications
FIS Global	TECSEC Incorporated
Fiserv	Texas Health and Human Services WIC EBT
FIX Protocol Ltd - FPL	Thales e-Security, Inc.
FMI - The Food Industry Association	The Clearing House
Franchise Tax Board	Thomson Reuters
Futurex	Trusted Security Solutions
Gilbarco (now Invenco)	U.S. Bank
Harland Clarke	U.S. Commodity Futures Trading Commission
IBM Corporation	University Bank
Ingenico	USDA Food and Nutrition Service
Intuit	Utimaco
ISARA	Valid 8 Financial
ISITC	VeriFone, Inc.
iStream Imaging/Bank of Kenney	Viewpointe
ITS, Inc. (SHAZAM Networks)	VISA
J.P. Morgan Chase	Wayne Fueling Systems
JJ 4 Tech	Wells Fargo
K3DES LLC	Wolters Kluwer
Keyfactor	

4.0 X9 Organization Structure

4.1 Top Level Groups

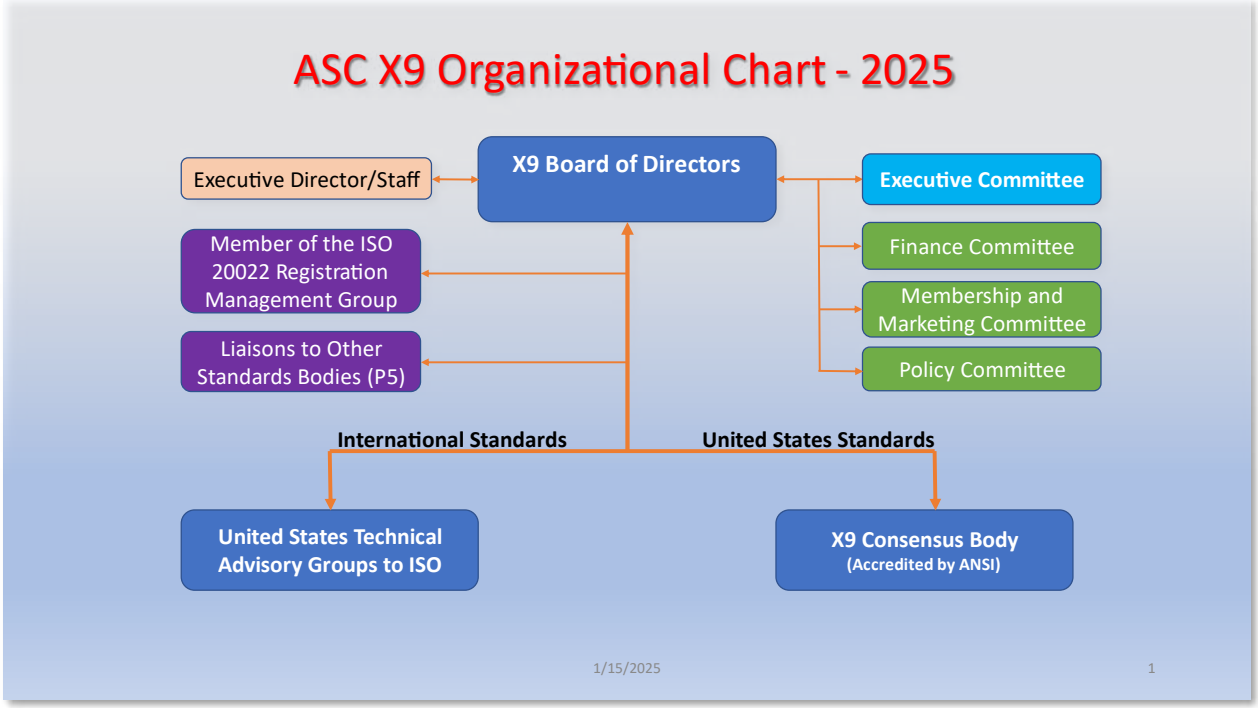


Chart 1 – X9's Top Level Groups

The X9 Board of Directors serves as the governing body of X9, with all other groups subordinate to the Board. The Board oversees all aspects of X9's operations, although certain functions are delegated to other groups.

For instance, the Board has delegated responsibility for overseeing the creation and approval of domestic standards to the X9 Consensus Body. Since X9 is accredited by the American National Standards Institute (ANSI) to develop standards, the Consensus Body's rules and procedures must comply with all ANSI requirements.

In the area of international standards, the Board has approved the formation of Technical Advisory Groups (TAGs) to represent the United States in ISO groups. Further details about these TAGs will be shared later.

Additionally, X9 has established official liaisons with other standards organizations. These liaisons enable X9 to coordinate efforts, share information, and facilitate collaboration between organizations.

The X9 Board also oversees four management committees, which report directly to the Board: the Executive Committee, the Finance Committee, the Membership and Marketing Committee, and the Policy Committee. These committees, composed of Board members, are assigned specific responsibilities to support X9's mission.

Lastly, the Executive Director of X9 reports directly to the Board.

4.2 X9 Consensus Body

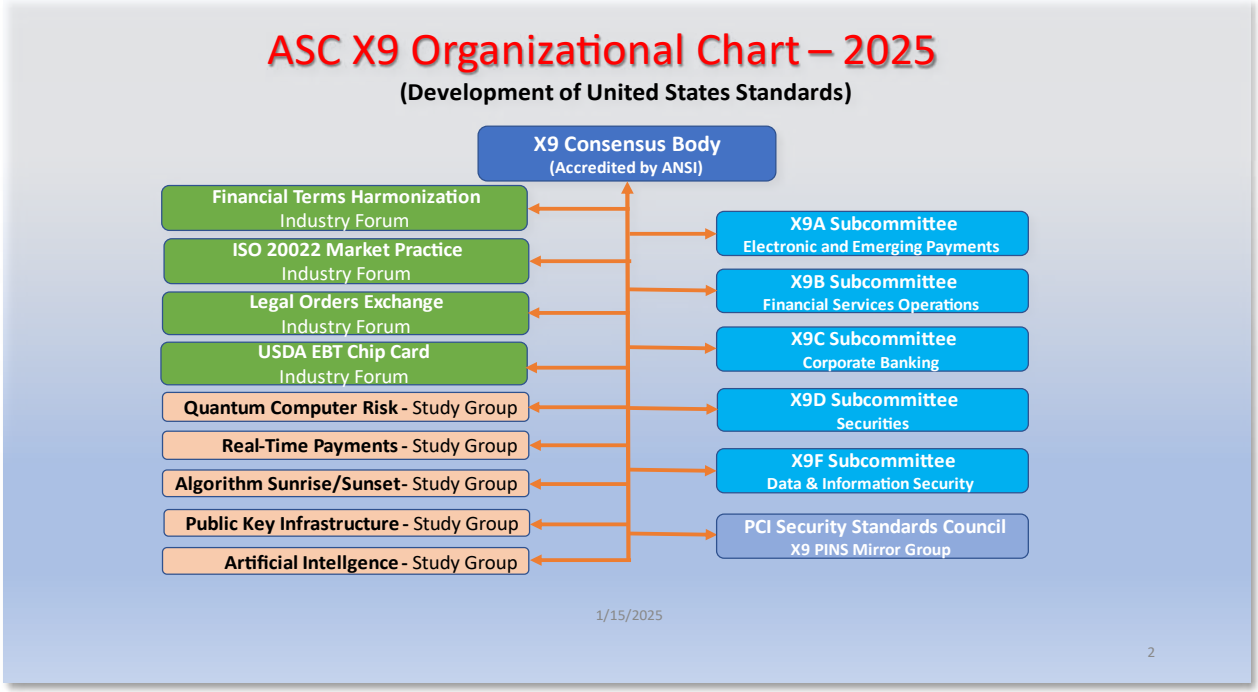


Chart 2 – X9 Consensus Body

The X9 Consensus Body is composed of X9 Category A members and is responsible for governing the process of creating ANSI American National Standards. While the Consensus Body may delegate limited authority to subgroups that report directly to it, all groups involved in the development of ANSI standards are accountable solely to the Consensus Body.

Subordinate groups play a key role in drafting standards and may vote on their work; however, the Consensus Body ensures compliance with ANSI processes and makes the final determination on whether a standard is approved by X9 and submitted to ANSI for review.

X9 has five subcommittees that report to the Consensus Body, each focused on developing standards for specific technologies or product areas. The names of these subcommittees generally reflect their areas of responsibility. Since subcommittees and their associated workgroups develop standards, membership in these groups is restricted to paid X9 members. Detail on each subcommittee are provided later in this document.

In addition, the Consensus Body oversees two other types of groups that are open to participation at no cost. These groups address specific issues within the financial industry:

1. **Industry Forums**: These forums are established to either educate the industry on a particular topic or gather industry input on an issue that is used for development of standard.
2. **Study Groups**: Created to explore emerging technologies or products, study groups aim to deepen understanding and educate X9 members. These groups may produce whitepapers (informative reports) that summarize findings, suggest best practices for using a technology, or highlight the need for new standards.

4.3 X9's International Groups

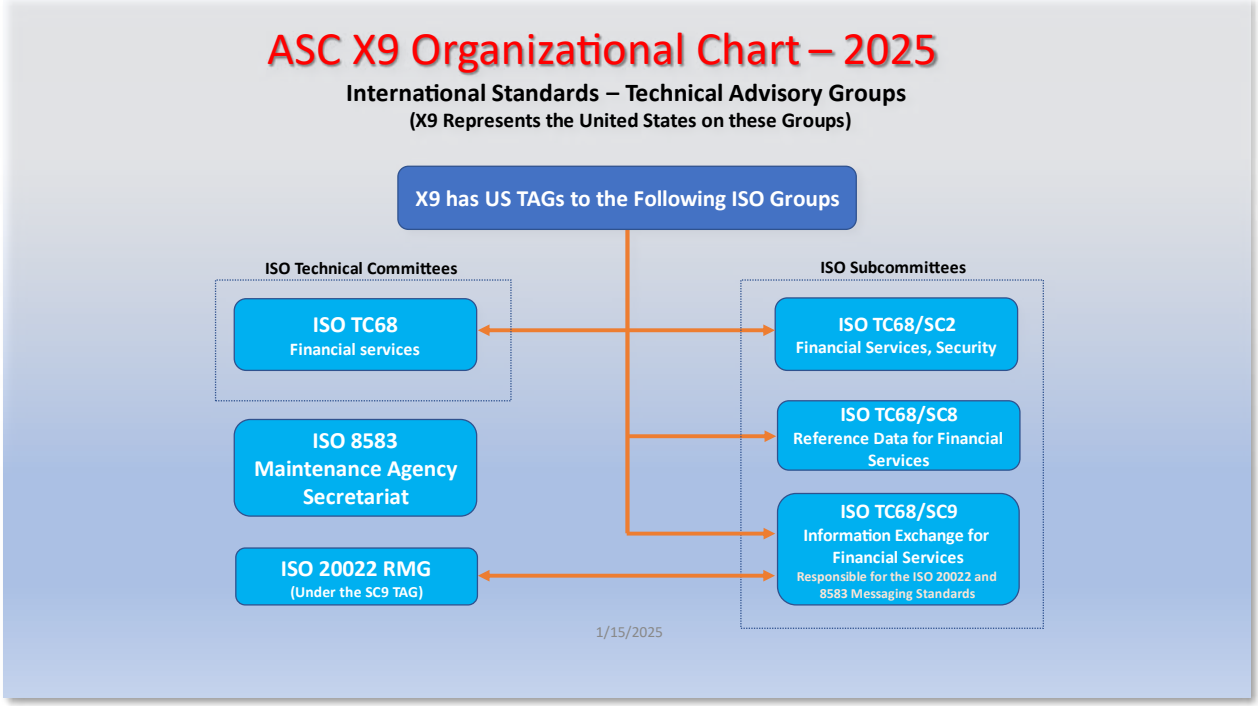


Chart 3 – X9's International Groups

X9 represents the United States in the development and management of international financial standards through ISO. These standards are used globally to support financial transactions, such as international credit card transactions and the transfer of money. Additionally, the standards support the cryptography that secures these transactions. Notable examples of some standards include ISO 8583 and ISO 20022.

To manage this work, X9 has established Technical Advisory Groups (TAGs). Each TAG corresponds to one of the four ISO groups that support the international financial industry. The primary group, ISO TC68, performs work similar to X9 but at the international level. The remaining groups are subcommittees (SCs) under ISO TC68, each focusing on specific areas or technologies.

Since ISO membership is organized by country, X9 TAGs act as the official representatives of the United States, advocating for U.S. needs and positions within ISO groups. Additionally, TAGs provide subject matter experts to develop and review ISO standards.

X9 also at as the Maintenancy Agency Secretariat for the ISO 8583 standard. X9 posts a number of supporting documents for ISO 8583 on our public web site.

Membership in X9 TAGs is restricted to Category A (paid) members.

4.4 X9 Liaisons to other Organizations

Chart 4 – X9's Liaisons with Other Organizations

Many organizations support technologies that are integral to or assist with financial transactions. X9 has found it beneficial to monitor—and, in some cases, actively participate in—the work of these organizations. In fact, X9 was a founding member of several of these groups, helping to establish them in their early stages.

Most agreements with these organizations allow one or two X9 representatives to participate in their activities. These representatives provide valuable updates to keep X9 informed about ongoing developments.

For more information, please contact a staff member.

5.0 List of All X9 Standards & Documents

5.1 How to Create a New Work Item to Develop an ANSI Standard

X9 was established to develop and maintain ANSI standards for the United States financial industry. To achieve this mission and stay aligned with evolving technology, a continuous flow of new ideas for standards is essential. The following is an outline of the process.

Any representative of an X9 member organization can initiate the process to create a standard. If you have an idea for a new standard or technical report, email the X9 staff to request a "New Work Item" (NWI) form. Once you have completed the form, return it to a staff member. If you have any questions about the form, the staff will be happy to assist.

To ensure there is sufficient support for the proposed work, at least five Category A members must be listed as sponsors. After the form is submitted, the staff and Executive Director will review the proposal before forwarding it to the X9 Executive Committee for review and approval. Following this step, the NWI is submitted to the X9 Board of Directors for final review and approval.

The involvement of the X9 Board is necessary because approving work on a new standard requires allocating X9 resources, which is a significant business decision.

If the Board approves the NWI, the staff will assign the new work to a subcommittee or work group and issue a call for experts from X9 members to join the group and begin the project.

If you have ideas for new work related to the financial industry, please reach out to a staff member, or speak with someone in the group most likely to handle the proposed work. Additionally, X9 serves as the United States representative to ISO TC68, the international counterpart to X9. The ISO process for creating a standard is more complex, so please contact a staff member for the details.

5.2 List of X9 Standards, Documents and Reports

This follow is a list of the standards, supporting documents and reports maintained by X9. You can click on each title to get more information.

1. SD023 Check Image Test Index
2. SD034 Registry of Approved Cryptographic Resources
3. SD036 ISO TC68 SC2 Secretariat Report September 2009
4. SD038 X9 Automatic Information Object Identifier (OID) Assignments
5. TR 33-2018 Check Image Quality Assurance with Data Transaction Integrity
6. TR 52-20XX Remotely Created Checks (RCC) Design and Usage Guide
7. TR-38-3 TR/ISO 20022-3 TS Financial Services - Universal Financial Industry Message Scheme Part 3: ISO 20022 Modelling Guidelines
8. TR-38-4 TR/ISO 20022-4 TS Financial Services - Universal Financial Industry Message Scheme Part 4: ISO 20022 XML Design Rules
9. X9 TG-10 Signature Guarantee Guideline
10. X9 TG-9 Abstract Syntax Notation & Encoding Rules for Financial Industry Standards

11. X9 TR 100-20XX Organization of Standards for Paper and Image-Based Check Payments Part 1: Organization of Standards, Part 2: Definitions used in Standards
12. X9 TR 2-20XX Understanding, Designing & Producing Checks
13. X9 TR 31-20XX Interoperable Secure Key Exchange Key Block Specification for Symmetric Algorithms
14. X9 TR 34-202X Interoperable Method for Distribution of Symmetric Keys Using Asymmetric Techniques: Part 1 - Using Factoring-Based Public Key Cryptography Unilateral Key Transport
15. X9 TR 40-20XX (R2016) Bridging ANSI X9.100-187 to ANSI X9.100-182-2-1: Transferring Data from an Image Cash Letter File to an XML Check Delivery Document
16. X9 TR 42-20XX Core Deduction Reason Codes
17. X9 TR 43-20XX Remittance Glossary
18. X9 TR 44-20XX Remittance Standards Inventory
19. X9 TR 45-20XX Retail Industry Debit Balances Best Practices, Terminology, and Procedures
20. X9 TR 47-20XX Universal Companion Document Industry Adoption of X9.100-187
21. X9 TR 48-20XX CNP Fraud Mitigation
22. X9 TR 50-20XX Quantum Techniques in Cryptographic Messaging Syntax (CMS)
23. X9 TR 51-202X v3 Levies Companion Document Uniform Adoption of X9.129 for Levies Version 3.0
24. X9 TR 53-20XX Cybersecurity Diversity Index
25. X9 TR 54-20XX Framework for Auditing a Blockchain within a Distributed System
26. X9 TR 55-20XX Framework for the Adoption of a Zero Trust in Information Systems
27. X9 TR 56-202X Crypto-Agility: A Method for Remote Upgrade to Stronger Terminal Master Keys
28. X9 TR 57-20XX Methods of Hybrid use of Post-Quantum Cryptography with Classical Cryptography Techniques
29. X9 TR 6-20XX Quality MICR Printing and Evaluation
30. X9 TR 8-20XX Check Security
31. X9.8-2 Approved Algorithms for PIN Encipherment
32. X9.100-10-202X Paper for MICR Documents
33. X9.100-110-202X Document Imaging Compatibility
34. X9.100-111-20XX Check Endorsements
35. X9.100-120-20XX (R2021) Bank Deposit Tickets
36. X9.100-130 (R20XX) Universal Interbank Batch/Bundle Ticket
37. X9.100-140-20XX Image Replacement Document (IRD)
38. X9.100-150-20XX (R2017) Check Carrier Envelopes
39. X9.100-151 (R20XX) Check Correction Strips
40. X9.100-160-1-20XX Magnetic Ink Printing (MICR) Part 1: Placement and Location
41. X9.100-160-2-202X Magnetic Ink Printing (MICR) - Part 2: EPC Field Use
42. X9.100-161 (R20XX) Creating MICR Document Specification Forms
43. X9.100-170 (R20XX) Check Fraud Deterrent Icon
44. X9.100-180-20XX (S2018) Specifications for Electronic Exchange of Check and Image Data (non-domestic)

45. X9.100-181-20XX (R2021) TIFF Image Format for Image Exchange
46. X9.100-182-20XX (R2017) Bulk Image and Data Delivery (standard, XSD Schema, and TR 40)
47. X9.100-183 (R20XX) Electronic Check Adjustments
48. X9.100-187-201XX Electronic Exchange of Check and Image Data
49. X9.100-188-20XX Return Reasons for Check Image Exchange and IRDs
50. X9.100-189-20XX Savings Bond Paying Agent Virtual Stamp
51. X9.100-20 Parts 1, 2 and 3 Print & Test Specifications for Magnetic Ink Printing
52. X9.100-30 (R20XX) Optical Measurement Specifications for MICR Documents
53. X9.100-40-1&2-20XX(R2017) Specifications for Check Image Tests Part 1: Definition of Elements and Structures Part 2: Application and Registration Procedures)
54. X9.101-2003 (R20XX)/ISO 6166 International Securities Identification Numbering System (ISIN)
55. X9.102-20XX Symmetric Key Cryptography for the Financial Services Industry - Wrapping of Keys and Associated Data
56. X9.103-20XX (R2018) Motor Vehicle Retail Sale and Lease Electronic Contracting
57. X9.104-1-20XX (R2017) Financial transactions card originated messages - Card acceptor to acquiring host messages: Messages, data elements and code values
58. X9.104-2-20XX (R2016) Financial transaction card originated messages - Card acceptor to acquiring host messages - Part 2 Convenience store and petroleum marketing industry
59. X9.105-1-20XX/ISO 8583-1-20XX (R2019) Financial transaction card originated messages - Interchange message specifications - Part 1: Messages, data elements, and code values
60. X9.105-3-20XX/ISO 8583-1:20XX (R2019) Financial transaction card originated messages - Interchange message specifications - Part 3: Maintenance Procedures for messages, data elements and code values
61. X9.106-20XX (R2019)/ISO 18245 Retail Financial Services - Merchant Category Codes
62. X9.110-20XX(R2020) Transfer of Location of Electronic Contracts
63. X9.111-20XX Penetration Testing within the Financial Services Industry
64. X9.112-1-20XX Wireless Management and Security Part 1: General Requirements
65. X9.112-2-202X Wireless Management and Security Part 2: POS and ATM
66. X9.112-3-20XX Wireless Management and Security Part 3: Mobile Banking
67. X9.117-202X Secure Remote Access Mutual Authentication
68. X9.118-1/ISO 13616-1 Financial services - International bank account number (IBAN) - Part 1: Structure of the IBAN
69. X9.118-2/ISO 13616-2 Financial services - International bank account number (IBAN) - Part 2: Role and responsibilities of the Registration Authority
70. X9.119-1-202X Retail Financial Services - Requirements for Protection of Sensitive Payment Data - Part 1: Using Encryption Methods
71. X9.119-2 Requirements for Protection of Sensitive Payment Card Data - Part 2: Using Tokenization Methods
72. X9.121-20XX Balance and Transaction Reporting Standard
73. X9.12-XXXX (S20XX) Specifications for Fully Registered Municipal Securities

74. X9.122-202X Secure Consumer Authentication for Internet Debit Transactions
75. X9.123-201X Public Key Cryptography for the Financial Services Industry, Elliptic Curve Qu-Vanstone Implicit Certificates
76. X9.124-1-202X Symmetric Key Cryptography for the Financial Services Industry Format Preserving Encryption – Part 1: Definitions and Mode
77. X9.124-2 Symmetric Key Cryptography For the Financial Services Industry — Format Preserving Encryption- Part 2: Key Stream with Counter Mode
78. X9.124-3 Format Preserving Encryption of Financial Information-Part 3
79. X9.124-4 Format Preserving Encryption of Financial Information-Part 4
80. X9.124-5-202X Format Preserving Encryption – Part 5 Format-preserving Feistel-based Mode FF3.1
81. X9.125 Cloud Management & Security
82. X9.126-201X/ISO 17442-2019 LEI
83. X9.128 - Retailer interface for smart cards
84. X9.129-202X Legal Orders Exchange, Version 3
85. X9.130/ISO 10962 Classification of Financial Instruments (CFI)
86. X9.131-20XX Financial transaction messages - Electronic benefits transfer (EBT) – WIC retailer interface
87. X9.132 Issuer PIN Generation, Verification, and Storage Methodologies Using AES
88. X9.133-20XX Identity Based Encryption for the Financial Services Industry
89. X9.134-1 Core Banking: Mobile Financial Services – General Framework
90. X9.134-2-202X Security and Data Protection for Mobile Financial Services
91. X9.134-3-202X Mobile Financial Application Lifecycle Management
92. X9.134-4-202X Mobile Payments-to-Persons
93. X9.135-20XX Secret Sharing Schemes
94. X9.137 Tokenization Management and Security
95. X9.138-202X Distributed Ledger Technologies Terminology
96. X9.139-20XX Interoperable Method for Distribution of Symmetric Keys Using Asymmetric Techniques: Part 1 - Using Factoring-Based Public Key Cryptography Unilateral Key Transport
97. X9.141 Financial and Personal Data Protection and Breach Notification Standard
98. X9.142-202X Public Key Cryptography: The Elliptic Curve Digital Signature Algorithm (ECDSA)
99. X9.143-20XX Interoperable Secure Key Exchange Key Block Specification for Symmetric Algorithms
100. X9.144 Production Subpoena Orders Exchange
101. X9.145 Framework for Financial Instrument Identification
102. X9.146-202X Quantum-Safe TLS Handshake Extension
103. X9.147-202X Audit Confirmation and Account Verification Exchange
104. X9.148 QR Code Protection using Cryptographic Solutions
105. X9.24-1-202X Retail Financial Services Symmetric Key Management Part 1: Using Symmetric Techniques
106. X9.24-2-20XX Retail Financial Service Symmetric Key Management Part 2: Using Asymmetric Techniques for the Distribution of Symmetric Keys
107. X9.24-3-202X Retail Financial Services Symmetric Key Management Part 3: Derived Unique Key per Transaction

108. X9.42-20XX (R2013) Public Key Cryptography for Financial Services Industry: Agreement of Symmetric Keys Using Discrete Logarithm Cryptography
109. X9.44-20XX (R2017) Key Establishment Using Integer Factorization Cryptography
110. X9.58-20XX Financial transaction messages — Electronic Benefits Transfer (EBT) — Supplemental Nutrition Assistance Program (SNAP) and cash benefit programs
111. X9.59-20XX (R2013) Electronic Commerce for the Financial Services Industry: Account-Based Secure Payment Objects
112. X9.6-202X Committee on Uniform Security Identification Procedures Securities Identification CUSIP
113. X9.63-20XX Key Agreement and Key Management Using Elliptic Curve-Based Cryptography
114. X9.69-20XX Framework for Key Management Extensions
115. X9.73-20XX Cryptographic Message Syntax - ASN.1 and XML
116. X9.79-4-20XX Public Key Infrastructure - Part 4: Asymmetric Key Management
117. X9.80-202X Prime Number Generation, Primality Testing, and Primality Certificates
118. X9.8-1-20XX/ISO 9564-1-2017 (Identical Adoption) Financial Services – Personal identification number (PIN) management and security — Part 1: Basic principles and requirements for PINs in card-based systems
119. X9.82-1-202X Random Number Generation Part 1: Overview and Basic Principles
120. X9.82-2-20XX Random Number Generation Part 2: Entropy Sources
121. X9.82-3-20XX (R2017) Random Number Generation Part 3: Deterministic Random Bit Generator Mechanisms
122. X9.82-4 (R20XX) Random Number Generation Part 4: Random Bit Generator Constructions
123. X9.84-20XX Biometric Information Management & Security for the Financial Services Industry
124. X9.92-1:20XX (R2017) Public Key Cryptography for the Financial Services Industry Digital Signature Algorithms Giving Partial Message Recovery Part 1: Elliptic Curve Pintsov-Vanstone Signatures (ECPVS)
125. X9.93-1-20XX Financial Transaction Message - Electronic Benefits Transfer - Part 1: Messages
126. X9.93-2-20XX Financial transaction messages - Electronic Benefits Transfer (EBT) Part 2: Files
127. X9.95-20XX Trusted Time Stamp Management and Security
128. X9.97-1-20XX Secure Cryptographic Devices (Retail) - Part 1: Concepts, Requirements and Evaluation Methods
129. X9.97-2-20XX Secure Cryptographic Devices (Retail) Part 2: Security Compliance Checklists for Devices Used in Financial Transactions
130. X9.98-20XX (R2017) Lattice-Based Polynomial Public Key Encryption Algorithm part 1: Key Establishment; Part 2: Data Encryption
131. X9.99-20XX (R2020) Privacy Impact Assessment Standard

See section *12.2* for a list of 103 international standards support by X9.

6.0 X9A Subcommittee – Electronic and Emerging Payments

X9A Scope

The X9A subcommittee develops and supports standards that are focused on electronic and mobile payments, including wholesale, retail, and benefits. This subcommittees also houses U.S. mirror groups to ISO TC68 that are responsible for developing and supporting international retail card and mobile-based payments.

X9A Chair – Ainsley Hargest
X9A Vice Chair – Jennifer Bond-Caswell

Current Standard Projects

1. X9 TR 48-2018 CNP Fraud Mitigation
2. X9 TR 54-201x Framework for Auditing a Blockchain within a Distributed System
3. X9.104-1-2004 (R2017) Financial transactions card originated messages - Card acceptor to acquiring host messages: Messages, data elements and code values
4. X9.104-2-2004 (R2016) Financial transaction card originated messages - Card acceptor to acquiring host messages - Part 2 Convenience store and petroleum marketing industry
5. X9.105-1-2009/ISO 8583-1-2009 (R2019) Financial transaction card originated messages - Interchange message specifications - Part 1: Messages, data elements, and code values
6. X9.105-3-2009/ISO 8583-1:2009 (R2019) Financial transaction card originated messages - Interchange message specifications - Part 3: Maintenance Procedures for messages, data elements and code values
7. X9.106-2003 (R2019)/ISO 18245 Retail Financial Services - Merchant Category Codes
8. X9.131-2015 Financial transaction messages - Electronic benefits transfer (EBT) – WIC retailer interface
9. X9.134-1 Core Banking: Mobile Financial Services – General Framework
10. X9.134-2-202x Security and Data Protection for Mobile Financial Services
11. X9.134-3-202X Mobile Financial Application Lifecycle Management
12. X9.134-4-202X Mobile Payments-to-Persons
13. X9.138-2020 Distributed Ledger Technologies Terminology
14. X9.58-201X Financial transaction messages — Electronic Benefits Transfer (EBT) — Supplemental Nutrition Assistance Program (SNAP) and cash benefit programs
15. X9.59-2006 (R2013) Electronic Commerce for the Financial Services Industry: Account-Based Secure Payment Objects
16. X9.93-1-201X Financial Transaction Message - Electronic Benefits Transfer - Part 1: Messages
17. X9.93-2-201X Financial transaction messages - Electronic Benefits Transfer (EBT) Part 2: Files

6.1 X9A1 Distributed Ledger Terminology (DLT) Work Group

X9A1 Scope

The main goal for this work group is to publish and maintain a continuous maintenance standard for Distributed Ledger Terminology (DLT) that defines platform independent DLT based terms and definitions to enable common understanding and use in financial services. Given the current

embryotic state of this technology, this terminology is expected to change over time and this work effort will keep the standard updated as the industry evolves.

X9A1 Chair – Jennifer Bond-Caswell
X9A1 Vice Chair - Amy Kim

Current Standard Projects

1. X9.138-2020 Distributed Ledger Technologies Terminology
2. TR 60-202X Risk Assessment Framework for Bank Provided Crypto-Asset Custodial Accounts

6.2 X9A2 Mobile Banking and Payments Work Group

X9A2 Scope

The X9A2 work group develops standards that support mobile financial services. The X9.134 effort seeks to develop a domestic mobile financial services standard modeled after the ISO 12812: Core Banking – Mobile Financial Services standard and technical specifications published in 2017. X9.134 consists of five parts: (1) a general framework; (2) security and data protection requirements, including authentication (3) app lifecycle management including authentication; (4) payments to persons; and (5) payments to businesses.

X9A2 Chair - David Nichamoff
X9A2 Vice Chair - Susan Pandy

Current Standard Projects

1. X9.134-1 Core Banking: Mobile Financial Services – General Framework
2. X9.134-2-202x Security and Data Protection for Mobile Financial Services
3. X9.134-3-202X Mobile Financial Application Lifecycle Management
4. X9.134-4-202X Mobile Payments-to-Persons
5. ISO 8583 - Financial transaction card originated messages — Interchange message specifications

6.3 X9A4 QR Code Payments Work Group

X9A4 Scope

The workgroup will develop a standard on QR Code Payments. The workgroup will focus on content including the format, specifications and minimum information included in the payload to generate a QR code - either presented by a Merchant or presented by a Consumer. Content also includes the format, specifications and minimum information included in the alphanumeric string representation of the QR Code. Each position in the string provides information about a payment transaction including things like transaction amount, currency, biller/merchant etc.

Items out of scope would be URL QR Codes. This type of QR Code is scanned by the camera app on a mobile device, and redirects the user to a landing page with more information.

X9A4 Chair – Sarah Hoisington
X9A4 Vice Chair – Jeff Stapleton and Steve Mott

Current Standard Projects

1. ASC X9.150 QR Code Payments

6.4 X9A11 Electronic Benefits Transactions Work Group

X9A11 Scope

The X9A11 work group develops standards around electronic benefits including Electronic Benefits Transactions (EBT), Supplemental Nutrition Assistance Program (SNAP), and Women Infant and Children program (WIC).

X9A11 Chair – Jamie Topolski

Current Standard Projects

1. X9.131-2015 Financial transaction messages - Electronic benefits transfer (EBT) – WIC retailer interface
2. X9.58-201X Financial transaction messages — Electronic Benefits Transfer (EBT) — Supplemental Nutrition Assistance Program (SNAP) and cash benefit programs
3. X9.59-2006 (R2013) Electronic Commerce for the Financial Services Industry: Account-Based Secure Payment Objects
4. X9.93-1-201X Financial Transaction Message - Electronic Benefits Transfer - Part 1: Messages
5. X9.93-2-201X Financial transaction messages - Electronic Benefits Transfer (EBT) Part 2: Files

7.0 X9B Financial Services Operations Subcommittee

X9B Scope

The X9B Financial Services Operations subcommittee develops and maintains standards and guidance focused on interoperability and reduction of dependency on manual and paper-based processing. These include standards for design of all elements of manufacturing, electronic processing, and delivery of checks, as well as other back-office operations, such as exchange of legal orders (subpoenas, levies, account related information and other similar services and operations).

X9B Chair - Jackie Pagan
X9B Vice Chairs - Michelle Wright

Current Standard Projects

1. X9 TR 100-2019 Organization of Standards for Paper and Image-Based Check Payments Part 1: Organization of Standards, Part 2: Definitions used in Standards
2. X9 TR 2-2019 Understanding, Designing & Producing Checks
3. X9 TR 40-2011 (R2016) Bridging ANSI X9.100-187 to ANSI X9.100-182-2-1: Transferring Data from an Image Cash Letter File to an XML Check Delivery Document
4. X9 TR 47-2016 Universal Companion Document Industry Adoption of X9.100-187
5. X9 TR 51-2020 v3 Levies Companion Document Uniform Adoption of X9.129 for Levies Version 3.0
6. X9 TR 6-2016 Quality MICR Printing and Evaluation
7. X9 TR 8-2016 Check Security
8. SD023 Check Image Test Index
9. TR 33-2018 Check Image Quality Assurance with Data Transaction Integrity
10. TR 52-201X Remotely Created Checks (RCC) Design and Usage Guide
11. TR-38-3 TR/ISO 20022-3 TS Financial Services - Universal Financial Industry Message Scheme Part 3: ISO 20022 Modelling Guidelines
12. TR-38-4 TR/ISO 20022-4 TS Financial Services - Universal Financial Industry Message Scheme Part 4: ISO 20022 XML Design Rules
13. X9.100-10-202X Paper for MICR Documents
14. X9.100-110-202X Document Imaging Compatibility
15. X9.100-111-2018 Check Endorsements
16. X9.100-120-2015 (R2021) Bank Deposit Tickets
17. X9.100-130 (R2017) Universal Interbank Batch/Bundle Ticket
18. X9.100-140-2018 Image Replacement Document (IRD)
19. X9.100-150-2010 (R2017) Check Carrier Envelopes
20. X9.100-151 (R2017) Check Correction Strips
21. X9.100-160-1-201X Magnetic Ink Printing (MICR) Part 1: Placement and Location
22. X9.100-160-2-2020 Magnetic Ink Printing (MICR) - Part 2: EPC Field Use
23. X9.100-161 (R2017) Creating MICR Document Specification Forms
24. X9.100-170 (R2017) Check Fraud Deterrent Icon
25. X9.100-180-2006 (S2018) Specifications for Electronic Exchange of Check and Image Data (non-domestic)
26. X9.100-181-2014 (R2021) TIFF Image Format for Image Exchange

27. X9.100-182-2011 (R2017) Bulk Image and Data Delivery (standard, XSD Schema, and TR 40)
28. X9.100-183 (R2017) Electronic Check Adjustments
29. X9.100-187-201x Electronic Exchange of Check and Image Data
30. X9.100-188-2018 Return Reasons for Check Image Exchange and IRDs
31. X9.100-189-2019 Savings Bond Paying Agent Virtual Stamp
32. X9.100-20 Parts 1, 2 and 3 Print & Test Specifications for Magnetic Ink Printing
33. X9.100-30 (R2017) Optical Measurement Specifications for MICR Documents
34. X9.100-40-1&2-2007(R2017) Specifications for Check Image Tests Part 1: Definition of Elements and Structures Part 2: Application and Registration Procedures)
35. X9.118-1/ISO 13616-1 Financial services - International bank account number (IBAN) - Part 1: Structure of the IBAN
36. X9.118-2/ISO 13616-2 Financial services - International bank account number (IBAN) - Part 2: Role and responsibilities of the Registration Authority
37. X9.128 - Retailer interface for smart cards
38. X9.129-2020 Legal Orders Exchange, Version 3
39. X9.144 Production Subpoena Orders Exchange
40. X9.147-202X Audit Confirmation and Account Verification Exchange

7.1 X9B1 Organizational Standards Paper & Image Work Group

X9B1 Scope
The X9B1 work group supports the organization of check related payment standards and the definitions used in those standards.

X9B1 Chair - John McCleary and Michelle Wright
X9B1 Vice Chair - Daniel Welch

Current Standard Projects
1. X9 TR 100-2019 Organization of Standards for Paper and Image-Based Check Payments Part 1: Organization of Standards, Part 2: Definitions used in Standards

7.2 X9B2 Check and Image Related Standards Work Group

X9B2 Scope
The X9B2 work group supports standards and guidelines for check image exchange, file formats, TIFF and substitute check creation.

X9B2 Chair - Stephen Gibson-Saxty and Phyllis Meyerson
Current Standard Projects
1. X9 TR 2-2019 Understanding, Designing & Producing Checks
2. X9 TR 40-2011 (R2016) Bridging ANSI X9.100-187 to ANSI X9.100-182-2-1: Transferring Data from an Image Cash Letter File to an XML Check Delivery Document
3. X9 TR 47-2016 Universal Companion Document Industry Adoption of X9.100-187
4. X9 TR 33-2018 Check Image Quality Assurance with Data Transaction Integrity
5. X9.100-140-2018 Image Replacement Document (IRD)
6. X9.100-180-2006 (S2018) Specifications for Electronic Exchange of Check and Image Data
7. X9.100-181-2014 (R2021) TIFF Image Format for Image Exchange

8. X9.100-182-2011 (R2017) Bulk Image and Data Delivery (standard, XSD Schema, and TR 40)
9. X9.100-183 (R2017) Electronic Check Adjustments
10. X9.100-187-201x Electronic Exchange of Check and Image Data
11. X9.100-188-2018 Return Reasons for Check Image Exchange and IRDs
12. X9.100-189-2019 Savings Bond Paying Agent Virtual Stamp
13. X9.100-40-1&2-2007(R2017) Specifications for Check Image Tests Part 1: Definition of Elements and Structures Part 2: Application and Registration Procedures)

7.3 X9B3 Check Printing and Related Standards Work Group

X9B3 Scope

The X9B3 work group supports standards and guidelines for the production, printing, and testing of paper checks.

X9B3 Chair - Daniel Welch

Current Standard Projects

1. X9 TR 6-2016 Quality MICR Printing and Evaluation
2. X9 TR 8-2016 Check Security
3. TR 52-201X Remotely Created Checks (RCC) Design and Usage Guide
4. X9.100-10-202X Paper for MICR Documents
5. X9.100-110-202X Document Imaging Compatibility
6. X9.100-111-2018 Check Endorsements
7. X9.100-120-2015 (R2021) Bank Deposit Tickets
8. X9.100-130 (R2017) Universal Interbank Batch/Bundle Ticket
9. X9.100-150-2010 (R2017) Check Carrier Envelopes
10. X9.100-151 (R2017) Check Correction Strips
11. X9.100-160-1-201X Magnetic Ink Printing (MICR) Part 1: Placement and Location
12. X9.100-160-2-2020 Magnetic Ink Printing (MICR) - Part 2: EPC Field Use
13. X9.100-161 (R2017) Creating MICR Document Specification Forms
14. X9.100-170 (R2017) Check Fraud Deterrent Icon
15. X9.100-20 Parts 1, 2 and 3 Print & Test Specifications for Magnetic Ink Printing
16. X9.100-30 (R2017) Optical Measurement Specifications for MICR Documents

7.4 X9B4 Legal Order Processing Work Group

X9B4 Scope

The X9B4 work group supports the development of standards and guidelines for electronic legal order processing including levies and subpoenas. Working in collaboration, several financial institutions and state agencies have already created and implemented a standard for exchanging requests for information and payment related to levies, child support arrears, and taxes through X9B22 in an electronic file format. This workgroup is also focused on developing a standard for third parties to request financial information pursuant to subpoenas and similar legal requests, as well as the responses of financial institutions.

X9B4 Chair – Tom Melling
X9B4 Vice Chair – Diana Muse

Current Standard Projects

1. X9 TR 51-2020 v3 Levies Companion Document Uniform Adoption of X9.129 for Levies Version 3.0
2. X9.129-2020 Legal Orders Exchange, Version 3
3. X9.144 Production Subpoena Orders Exchange

7.5 X9B5 Audit Confirmation & Account Verification Work Group

X9B4 Scope

In most cases across the industry audit confirmations and deposit and account verifications are simple but very manual. They are received by mail, FAX, email or through a third-party web service that has to be accessed in order to ingest the request. Developing a data exchange standard that maps to the deposit systems of the financial institutions could automate the largest majority of this work and expedite service to the requestor while drastically reducing the expense for the financial institution.

X9B5 Chair – Natalie Thomas
X9B4 Vice Chair – Sean Dunlea

Current Standard Projects

1. X9.147 – Audit Confirmation and Account Verifications

8.0 X9C Corporate Banking Subcommittee

X9C Scope

Corporate Banking is an umbrella term for treasury, finance, and cash management functions within a corporation and for banking services offered to corporations. Corporate banking is separate from capital-raising, mergers advice or risk mitigation. It's usually the work-a-day stuff of a corporate treasurer: Moving cash between thousands of separate accounts; handling foreign-currency transactions; financing short-term trade balances; and processing customer payments. As payments evolve to real-time, X9C is committed to supporting Faster Payment initiatives to ensure a thoughtful end-to-end payment experience for corporate-related payments. Through ISO 20022 XML formats, payment origination and reporting can be greatly normalized across payment systems worldwide to simplify processes to identify and book payments. X9C will work closely with the Federal Reserve, The Clearing House, SWIFT, and other industry-leading clearing and standards organizations as they introduce these payment methods to the corporate community. X9C will collaborate with other X9 work-streams, including X9A that oversees consumer card payments.

X9C Chair – Ted Rothschild
X9C Vice Chair - Stephen Ranzini

Current Standard Projects

1. ASC X9 TR 42-2014 Core Deduction Reason Codes
2. ASC X9 TR 44-2013 Remittance Standards Inventory
3. ASC X9 TR 45-2016 Retail Industry Debit Balances Best Practices, Terminology, and Procedures
4. TR 43-2014 Remittance Glossary
5. X9.103-2004 (R2018) Motor Vehicle Retail Sale and Lease Electronic Contracting
6. X9.110-2008(R2020) Transfer of Location of Electronic Contracts
7. X9.121-2016 Balance and Transaction Reporting Standard

8.1 X9C1 Balance Transaction Reporting Specification (formerly BAI's Cash Management Reporting) Work Group

X9C1 Scope

In 2009, the Banking Administration Institute transferred the copyright of BAI2 to X9. Since that time, X9C1 revised the format into the BTRS/BTR3 standard by modernizing the codes list and rewriting the Format Guide to be more of a technical specification (both are available free for download on the x9.org/BTRS site). In 2020, X9C1 made further BTRS updates to standardize Information Reporting of Real-Time Payments (RTP) from The Clearing House. X9C1 will continue to follow Faster Payments initiatives to promote normalization of payment reporting between banks and from banks to corporates.

X9C1 Chair - David Repking

Current Standard Projects

1. X9.121-2016 Balance and Transaction Reporting Standard

8.2 X9C2 B2B Virtual Purchase Cards

X9C2 Scope

Virtual Purchase cards use different data input formats as well as custom formats for the emails that carry the card and invoice payment information. The scope of this Work Group will focus on providing standards for card input formats, email format, supplier (payee) authentication protocols, and life of the card. The workgroup will also promote a standard for downstream supplier remittance reporting. The focus will be on formats consistent with ISO 20022 and ease of integration into the major ERP applications in the marketplace.

X9C2 Chair – Bob Walker
X9C2 Vice Chair - Mick Talley

Current Standard Projects

1. X9.149 Virtual Purchase Cards Payment Automation

9.0 X9D Securities Subcommittee

X9D Scope

X9D is the securities subcommittee of X9. Their scope includes the development, maintenance, and adoption of standards that facilitate global straight-through processing and shortened settlement cycles in the securities industry. It also includes the maintenance of standards for clearance, settlement, transfer and related processes for physical securities in the US marketplace. X9D develops recommendations for US input into ISO 20022 Securities work efforts.

X9D Chair - Thomas Brown Jr.
X9D Vice Chair - Corby Dear

Current X9 Standard Projects

1. TG-10-1995 Signature Guarantee Guideline
2. X9.101-2003 (R2013)/ISO 6166 International Securities Identification Numbering System (ISIN)
3. X9.12-1991 (S2017) Specifications for Fully Registered Municipal Securities
4. X9.126-201X/ISO 17442-2019 LEI
5. X9.130/ISO 10962 Classification of Financial Instruments (CFI)
6. X9.145 Framework for Financial Instrument Identification
7. X9.6-2020 Committee on Uniform Security Identification Procedures Securities Identification CUSIP

International Standard Projects

1. ISO 4217:2015 Codes for the representation of currencies
2. ISO 6166:2021 International securities identification number (ISIN)
3. ISO 9362:2014 Business identifier code (BIC)
4. ISO 10383:2012 Codes for exchanges and market identification (MIC)
5. ISO 10962:2019 Classification of financial instruments (CFI) code
6. ISO 13616-1:2020 Structure of the IBAN
7. ISO 17442-1:2020 Legal entity identifier (LEI)
8. ISO 18774:2015 Financial Instrument Short Name (FISN)
9. ISO 20275:2017 Entity legal forms (ELF)
10. ISO 21586:2020 Specification for the description of banking products or services (BPoS)
11. ISO/TR 21797:2019 Overview of identification of financial instruments
12. ISO 23897:2020 Unique transaction identifier (UTI)
13. ISO 5009 Official Organizational Roles
14. ISO DIS 5116 IMPROVING TRANSPARENCY IN FINANCIAL AND BUSINESS REPORTING
15. ISO 24165 DIGITAL TOKEN IDENTIFIER (DTI)
16. ISO 24366 Natural Person Identification

9.1 X9D1 FIGI X9.145 Work Group (Inactive but starting up shortly)

X9D1 Scope
This work group is responsible for taking the OMG FIGI standard and adopting it as a draft X9 Standard.

X9D1 Chair – TBD

Current Standard Projects
1. X9.145 - Framework for Financial Instrument Identification

9.2 X9D2 CUSIP Work Group (Inactive but starting up shortly)

X9D2 Scope
This work group is responsible for the five-year review of the X9.6 CUSIP standard.

X9D2 Chair – TBD

Current Standard Projects
1. X9.6 - Committee on Uniform Security Identification Procedures Securities Identification CUSIP

10.0 X9F Data & Information Security Subcommittee Work Group

X9F Scope

X9F work efforts focus on data and information security standards. The X9F subcommittee is currently involved in projects like message encipherment, digital signature algorithms and security aspects of card payments. Members of this group are actively involved both nationally and internationally on identity theft and cardholder authentication issues.

X9F Chair – Steven Bowles
X9F Vice Chairs - Richard Kisley and Ed Scheidt

Current Standard Projects

1. X9.8-1-2019/ISO 9564-1-2017 (Identical Adoption) Financial Services – Personal identification number (PIN) management and security — Part 1: Basic principles and requirements for PINs in card-based systems
2. X9 TR 31-2018 Interoperable Secure Key Exchange Key Block Specification for Symmetric Algorithms
3. X9 TR 34-202X Interoperable Method for Distribution of Symmetric Keys Using Asymmetric Techniques: Part 1 - Using Factoring-Based Public Key Cryptography Unilateral Key Transport
4. X9 TR 50-2019 Quantum Techniques in Cryptographic Messaging Syntax (CMS)(Withdrawn by Board Ballot X9/23 LB#2)
5. X9 TR 53-201X Cybersecurity Diversity Index
6. X9 TR 57 Methods of Hybrid use of Post-Quantum Cryptography with Classical Cryptography Techniques
7. SD034-2000 Registry of Approved Cryptographic Resources
8. SD036 ISO TC68 SC2 Secretariat Report September 2009
9. SD038 X9 Automatic Information Object Identifier (OID) Assignments
10. X9 TG-9-1995 Abstract Syntax Notation & Encoding Rules for Financial Industry Standards
11. X9 TR 55-201X Framework for the Adoption of a Zero Trust in Information Systems
12. X9 TR 56-202X Crypto-Agility: A Method for Remote Upgrade to Stronger Terminal Master Keys
13. X9.8-2 Approved Algorithms for PIN Encipherment
14. X9.102-2020 Symmetric Key Cryptography for the Financial Services Industry - Wrapping of Keys and Associated Data
15. X9.111-2018 Penetration Testing within the Financial Services Industry
16. X9.112-1-2016 Wireless Management and Security Part 1: General Requirements
17. X9.112-2-2020 Wireless Management and Security Part 2: POS and ATM
    - Republished as X9.142
18. X9.112-3-2018 Wireless Management and Security Part 3: Mobile Banking
19. X9.117-2020 Secure Remote Access Mutual Authentication
20. X9.119-1-202x Retail Financial Services - Requirements for Protection of Sensitive Payment Data - Part 1: Using Encryption Methods

21. X9.119-2 Requirements for Protection of Sensitive Payment Card Data - Part 2: Using Tokenization Methods
22. X9.122-2020 Secure Consumer Authentication for Internet Debit Transactions
23. X9.123-201x Public Key Cryptography for the Financial Services Industry, Elliptic Curve Qu-Vanstone Implicit Certificates (needs support)
24. X9.124-1-2023 Symmetric Key Cryptography for the Financial Services Industry Format Preserving Encryption – Part 1: Definitions and Mode
25. X9.124-2-2018 Symmetric Key Cryptography For the Financial Services Industry — Format Preserving Encryption- Part 2: Key Stream with Counter Mode
26. X9.124-3 Format Preserving Encryption of Financial Information-Part 3
27. X9.124-4 Format Preserving Encryption of Financial Information-Part 4
28. X9.124-5-2021 Format Preserving Encryption – Part 5 Format-preserving Feistel-based Mode FF3.1
29. X9.125 Cloud Management & Security
30. X9.132 Issuer PIN Generation, Verification, and Storage Methodologies Using AES
31. X9.133-201x Identity Based Encryption for the Financial Services Industry (Abandoned)
32. X9.135-202x Secret Sharing Schemes
33. X9.137 Tokenization Management and Security
34. X9.139-201X Interoperable Method for Distribution of Symmetric Keys Using Asymmetric Techniques: Part 1 - Using Factoring-Based Public Key Cryptography Unilateral Key Transport
35. X9.141 Financial and Personal Data Protection and Breach Notification Standard
36. X9.142-2020 Public Key Cryptography: The Elliptic Curve Digital Signature Algorithm (ECDSA)
37. X9.143-201X Interoperable Secure Key Exchange Key Block Specification for Symmetric Algorithms
38. X9.146-202X Quantum-Safe TLS Handshake Extension
39. X9.148 QR Code Protection using Cryptographic Solutions
40. X9.24-1-202X Retail Financial Services Symmetric Key Management Part 1: Using Symmetric Techniques
41. X9.24-2-201X Retail Financial Service Symmetric Key Management Part 2: Using Asymmetric Techniques for the Distribution of Symmetric Keys
42. X9.24-3-202X Retail Financial Services Symmetric Key Management Part 3: Derived Unique Key per Transaction
43. X9.42-2003 (R2013) Public Key Cryptography for Financial Services Industry: Agreement of Symmetric Keys Using Discrete Logarithm Cryptography
44. X9.44-2007 (R2017) Key Establishment Using Integer Factorization Cryptography
45. X9.63-2017 Key Agreement and Key Management Using Elliptic Curve-Based Cryptography
46. X9.69-2017 Framework for Key Management Extensions
47. X9.73-2017 Cryptographic Message Syntax - ASN.1 and XML
48. X9.79-4-201X Public Key Infrastructure - Part 4: Asymmetric Key Management
49. X9.80-2020 Prime Number Generation, Primality Testing, and Primality Certificates
50. X9.82-1-2023 Random Number Generation Part 1: Overview and Basic Principles
51. X9.82-2-2015 Random Number Generation Part 2: Entropy Sources

52. X9.82-3-2007 (R2017) Random Number Generation Part 3: Deterministic Random Bit Generator Mechanisms
53. X9.82-4 (R2017) Random Number Generation Part 4: Random Bit Generator Constructions
54. X9.84-2018 Biometric Information Management & Security for the Financial Services Industry
55. X9.92-1:2009 (R2017) Public Key Cryptography for the Financial Services Industry Digital Signature Algorithms Giving Partial Message Recovery Part 1: Elliptic Curve Pintsov-Vanstone Signatures (ECPVS)
56. X9.95-2016 Trusted Time Stamp Management and Security
57. X9.97-1-201x Secure Cryptographic Devices (Retail) - Part 1: Concepts, Requirements and Evaluation Methods
58. X9.97-2-201x Secure Cryptographic Devices (Retail) Part 2: Security Compliance Checklists for Devices Used in Financial Transactions
59. X9.98-2010 (R2017) Lattice-Based Polynomial Public Key Encryption Algorithm part 1: Key Establishment; Part 2: Data Encryption
60. X9.99-2009 (R2020) Privacy Impact Assessment Standard

10.1 X9F1 Cryptographic Tools Work Group

X9F1 Scope

The Cryptographic Tools workgroup is responsible for drafting cryptographic algorithm standards under the X9F subcommittee. These tools are intended to be used to provide guidance for implementing confidentiality, integrity, and non-repudiation protection of financial data as well as authentication of financial system users. Standards drafted within the X9F1 work group are often referenced within other ASC X9 standards when such cryptographic tools are required. These standards are based on accepted cryptographic practices and sound mathematical techniques. The X9F1 work group maintains the ASC X9 Registry of Approved Cryptographic Resources for Financial Services Industry Standards, which references selected standards and techniques that were developed outside of ASC X9 but are now approved for ASC X9 use. X9F1 membership consists of government agencies for technology and security, consulting organizations, financial product vendors, financial service providers and end-users financial institutions.

X9F1 Chair - Michael Talley
X9F1 Vice Chair - Ralph Poore

Current Standard Projects

1. SD034 Registry of Approved Cryptographic Resources
2. SD036 ISO TC68 SC2 Secretariat Report September 2009
3. X9 TG-9-1995 Abstract Syntax Notation & Encoding Rules for Financial Industry Standards
4. X9 TR 57 Methods of Hybrid use of Post-Quantum Cryptography with Classical Cryptography Techniques
5. X9.102-2020 Symmetric Key Cryptography for the Financial Services Industry - Wrapping of Keys and Associated Data

6. X9.123-201x Public Key Cryptography for the Financial Services Industry, Elliptic Curve Qu-Vanstone Implicit Certificates
7. X9.124-1-2020 Symmetric Key Cryptography for the Financial Services Industry Format Preserving Encryption – Part 1: Definitions and Mode
8. X9.124-2 Symmetric Key Cryptography for the Financial Services Industry — Format Preserving Encryption- Part 2: Key Stream with Counter Mode
9. X9.124-3 Format Preserving Feistel Mode Encryption of Financial Information-Part 3
10. X9.124-4 Format Preserving Feistel Mode Encryption of Financial Information-Part 4
11. X9.124-5-2021 Format Preserving Encryption – Part 5 Format-preserving Feistel-based Mode FF3.1
12. X9.133-201x Identity Based Encryption for the Financial Services Industry
13. X9.135-201x Secret Sharing Schemes
14. X9.142-2020 Public Key Cryptography: The Elliptic Curve Digital Signature Algorithm (ECDSA)
15. X9.42-2003 (R2013) Public Key Cryptography for Financial Services Industry: Agreement of Symmetric Keys Using Discrete Logarithm Cryptography
16. X9.44-2007 (R2017) Key Establishment Using Integer Factorization Cryptography
17. X9.62-2005 Public Key Cryptography: The Elliptical Curve Digital Signature Algorithm (EDCSA)
18. X9.63-201X Key Agreement and Key Management Using Elliptic Curve-Based Cryptography
19. X9.80-2020 Prime Number Generation, Primality Testing, and Primality Certificates
20. X9.82-1-202X Random Number Generation Part 1: Overview and Basic Principles
21. X9.82-2-2015 Random Number Generation Part 2: Entropy Sources
22. X9.82-3-2007 (R2017) Random Number Generation Part 3: Deterministic Random Bit Generator Mechanisms
23. X9.82-4 (R2017) Random Number Generation Part 4: Random Bit Generator Constructions
24. X9.92-1:2009 (R2017) Public Key Cryptography for the Financial Services Industry Digital Signature Algorithms Giving Partial Message Recovery Part 1: Elliptic Curve Pintsov-Vanstone Signatures (ECPVS)
25. X9.98-2010 (R2017) Lattice-Based Polynomial Public Key Encryption Algorithm part 1: Key Establishment; Part 2: Data Encryption

10.2 X9F4 Cybersecurity and Cryptographic Solutions Work Group

X9F4 Scope

The X9F4 workgroup focuses on drafting security standards for the proper implementation and evaluation of protocols and technologies for the financial services industry. One of four work groups reporting to the X9F subcommittee and established in 1996 to draft a secure remote banking standard, the X9F4 work group has had its scope expanded over the years to include cryptographic message syntax (CMS), public key infrastructure (PKI), biometrics, trusted time stamps and mutual authentication standards. X9F4 membership consists of consultants, auditors, attorneys, service providers, product providers and end-users, including both government as well as financial institutions. X9F4 provides technical comments on international standards in support

of the X9 role as the US technical advisory group (TAG) to ISO TC68 Financial Services. Overall, the X9F4 work group is drafting or initiating revisions to over a dozen standards.

X9F4 Chair - Jeff Stapleton
X9F4 Vice Chair - Sandra Lambert

Current Standard Projects

1. X9 TR 50-2019 Quantum Techniques in Cryptographic Messaging Syntax (CMS)
2. X9 TR 53-201X Cybersecurity Diversity Index
3. X9 TR 55-201X Framework for the Adoption of a Zero Trust in Information Systems
4. X9.148 QR Code Protection using Cryptographic Solutions
5. X9.111-2018 Penetration Testing within the Financial Services Industry
6. X9.112-1-2016 Wireless Management and Security Part 1: General Requirements
7. X9.112-2-2020 Wireless Management and Security Part 2: POS and ATM
8. X9.112-3-2018 Wireless Management and Security Part 3: Mobile Banking
9. X9.117-2020 Secure Remote Access Mutual Authentication
10. X9.119-2 Requirements for Protection of Sensitive Payment Card Data - Part 2: Using Tokenization Methods
11. X9.122-2020 Secure Consumer Authentication for Internet Debit Transactions
12. X9.125 Cloud Management & Security
13. X9.137 Tokenization Management and Security
14. X9.141 Financial and Personal Data Protection and Breach Notification Standard
15. X9.69-2017 Framework for Key Management Extensions
16. X9.73-2017 Cryptographic Message Syntax - ASN.1 and XML
17. X9.84-2018 Biometric Information Management & Security for the Financial Services Industry
18. X9.95-2016 Trusted Time Stamp Management and Security
19. X9.99-2009 (R2020) Privacy Impact Assessment Standard

10.3 X9F5 Financial PKIs Work Group

X9F5 Scope

X9F5 Public Key Infrastructure (PKI) workgroup develops standards, technical reports, and other PKI-related documents including Certificate Practice Statement (CPS) for the financial service industry. The workgroup supports the X9F PKI Study Group and the US TAG to ISO TC68/SC2/WG8 PKI. X9F5 also monitors other PKI standards and liaisons with other PKI-related development organization (SDO) and industry groups.

X9F5 Chair - Tim Hollebeek
X9F5 Vice Chair - Clay Epstein

Current Standard Projects

1. X9.146-202X Quantum-Safe TLS Handshake Extension
2. X9.79-4-201X Public Key Infrastructure - Part 4: Asymmetric Key Management

10.4 X9F6 Cardholder Authentication Work Group

X9F6 Scope

X9F6 writes and maintains standards used in retail financial services to support authentication of payment card users. The suite of standards addressed by the work group includes standards on the secure management and handling of Personal Identification Numbers (PINs), encryption key management for keys used in retail financial transactions, message authentication, tamper-resistant security module evaluation, and Integrated Chip Cards (ICCs). The work group is also responsible for a series of technical reports that provide usage guidance for its standards.

X9F6 provides U.S. subject matter experts on the security aspects of card payments to ISO TC68/SC2/WG13 and WG11. The documents developed by these two ISO groups are circulated within X9F6 for comments and recommendations. Some of the topics include biometrics used for payments and Message Authentication Code (MAC) algorithms.

X9F6 Chair – Scott Spiker
X9F6 Vice Chair – Joshua Peak
X9F6 Secretariat – Darlene Kargel

Current Standard Projects

1. X9.8-1-2019/ISO 9564-1-2017 (Identical Adoption) Financial Services – Personal identification number (PIN) management and security — Part 1: Basic principles and requirements for PINs in card-based systems
2. X9 TR 31-2018 Interoperable Secure Key Exchange Key Block Specification for Symmetric Algorithms
3. X9 TR 34-202X Interoperable Method for Distribution of Symmetric Keys Using Asymmetric Techniques: Part 1 - Using Factoring-Based Public Key Cryptography Unilateral Key Transport
4. X9 TR 56-202X Crypto-Agility: A Method for Remote Upgrade to Stronger Terminal Master Keys
5. X9.8-2 Approved Algorithms for PIN Encipherment
6. X9.119-1-202x Retail Financial Services - Requirements for Protection of Sensitive Payment Data - Part 1: Using Encryption Methods
7. X9.132 Issuer PIN Generation, Verification, and Storage Methodologies Using AES
8. X9.139-201X Interoperable Method for Distribution of Symmetric Keys Using Asymmetric Techniques: Part 1 - Using Factoring-Based Public Key Cryptography Unilateral Key Transport
9. X9.143-201X Interoperable Secure Key Exchange Key Block Specification for Symmetric Algorithms
10. X9.24-1-202X Retail Financial Services Symmetric Key Management Part 1: Using Symmetric Techniques
11. X9.24-2-201X Retail Financial Service Symmetric Key Management Part 2: Using Asymmetric Techniques for the Distribution of Symmetric Keys
12. X9.24-3-202X Retail Financial Services Symmetric Key Management Part 3: Derived Unique Key per Transaction
13. X9.97-1-201x Secure Cryptographic Devices (Retail) - Part 1: Concepts, Requirements and Evaluation Methods
14. X9.97-2-201x Secure Cryptographic Devices (Retail) Part 2: Security Compliance Checklists for Devices Used in Financial Transactions

X9F6 is Currently Reviewing the Following ISO Standards:

1. ISO 9564-1 - Financial services — Personal Identification Number (PIN) management and security — Part 1: Basic principles and requirements for PINs in card-based systems
2. ISO 9564-6 – PIN on COTS (commercial off the shelf)
3. ISO 11568 – Key management (X9.24 all parts into one ISO document)

4. ISO 13491-1 - Financial services - Secure cryptographic devices (retail) - Part 1: Concepts, requirements and evaluation methods
5. ISO 13491-2 - Financial services — Secure cryptographic devices (retail) — Part 2: Security compliance checklists for devices used in financial transactions
6. ISO 19092 – Biometrics for payment
7. ISO 16609 – Requirements for message authentication
8. ISO 14742 – Recommendations on cryptographic algorithms and their use (considerations for Quantum)

10.5 X9F7 Artificial Intelligence Work Group

X9F7 Scope

This is X9's first work group primarily focused on artificial intelligence (AI). The primary purpose of the group is to develop and maintain standards related to the use of generative AI by the financial services industry. The work group should also aid in the education of the membership of X9 about the responsible usage of AI. The work group should work with other X9 groups to determine if some aspects of AI should be included in their standards. The work group should also coordinate its work with the X9 AI Study Group. Some of the research of the work group that may be incorporated into a standard are: 1) evaluating threats posed by and rules for the integration of these new AI solution into a financial infrastructure; 2) determining the minimum requirements for AI products to allow for transparency, compliance, auditability, risk management, fairness, ethics, and the ability to explain; 3) identifying methods for determining accuracy, reliability, security, risk and fit for purpose; 4) defining the roles and responsibilities both within an organization, and within the broader AI ecosystem, for integrating AI within a firm; and 5) reviewing threats posed by external attacks aided by AI. Note: X9F7 was created by the X9 Board at their fall 2023 meeting.

X9F7 Chair – Ben Dynkin
X9F7 Vice Chair – Open

11.0 X9 Study Groups and Industry Forums

11.1 X9A – USDA EBT Chip Card Industry Forum

Created: June 21, 2023

Scope

The purpose of this industry forum is to provide an environment for the groups associated with the USDA's issuance, processing and redemption of SNAP benefits to discuss issues related to the upgrading of the SNAP EBT card to a chip card, as well as the associated updates around mobile NFC payments and SNAP Electronic Healthy Food Incentive Program (eHIP). These groups include the USDA, State Agencies, Retailers, Card Processors, and others. The group is to work through issues related to upgrading the SNAP EBT card and make recommendations to the X9A11 work group which is responsible for the ASC X9.58 standard that controls the SNAP card. The group will provide an open forum to discuss and reach consensus on these issues. Industry Forum cannot generate X9 standards representative participants will collaborate to define use cases from a practitioner point of view and to understand best practices across payment types, based on consensus across industries.

Forum Chair – Jamie Topolski

11.2 X9C - U.S. ISO 20022 Market Practice Industry Forum

Created: October 14, 2020

Scope

U.S. ISO 20022 Market Practice Industry Forum identifies and addresses important topics for market coordination to promote consistent industry approaches for ISO 20022 implementations, and to lower the barriers to adoption. Toward those ends, the group proposes to bring together a broad spectrum of stakeholders, including corporations and other industry organizations. These representative participants will collaborate to define use cases from a practitioner point of view and to understand best practices across payment types, based on consensus across industries.

Forum Chair - David Repking

11.3 X9D - Financial Data Integration and Harmonization Industry Forum

Created: March 26, 2021

Scope

The Financial Data Integration and Harmonization Industry Forum was created to perform the following functions:

1. Review and harmonize current differences in financial data standards terms, meanings and definitions (Establish a common Data Dictionary);
2. Identify key financial instrument reference data gaps and propose solutions to address these gaps, including integration of multiple data sets;
3. Identify financial data service functions that are currently unavailable to meet critical industry needs; and
4. Work with participating organizations to resolve identified issues.

Initially, the forum will assess the state of financial and reference data used by the financial industry by seeking input from industry experts and data providers. After the assessment period, the forum will create a white paper on its initial findings and provide guidance on what additional actions may be required. The Forum will regularly provide feedback to the X9 Board on its progress toward meeting these goals.

Forum Chair – Tom Brown

11.4 X9C Real-time Payments Study Group (Inactive)

Scope

This study group is focused on faster/real-time payments. The study group will review real-time and faster payments activity in the financial industry, with the intent to become X9's central point of contact for all related and supporting X9 technical standards and to coordinate related work within X9.

X9 Real-time Payments Study Group Chair - Stephen Ranzini

11.5 X9F Cryptographic Algorithm Sunrise/Sunset Study Group

Scope

Cryptographic Algorithm Sunrise/Sunset Study Group has been formed under the X9F subcommittee. The purpose of this study group is to document cryptographic algorithm sunrise and sunset dates. This is needed to address industry changes in what is deemed acceptable for adequate protection of sensitive data. As each subcommittee talks about how to move the industry standards forward and away from older inadequate protocols, it was determined the best approach was to scope, select and document sunrise and sunset dates for cryptographic algorithms used in X9 standards.

The objectives for the Cryptographic Algorithms Study Group are to:

- Review and validate the new approach for establishing sunrise and sunset dates for cryptographic algorithms in X9 standards.
- Identify a minimum scope (i.e., applicable X9 standards and Registry) for each work group.
- Define an action plan across the work groups to define and document sunrise and sunset dates to address the minimum scope.

Sunrise/Sunset Study Group Chair – Ralph Poore

Current Projects

1. ASC X9 SD-34-2009 – Registry of Approved Cryptographic Resources for Financial Services Industry Standards

11.6 X9F Public Key Infrastructure (PKI) Study Group

Scope

The focus of this study group is to examine the reliance concerns and processing issues related to "Certificate Authority" third party service providers and the possibility of operating a centralized

Certificate Authority specifically devoted to the financial services industry. This would be a Certificate Authority on which trust for current and future financial industry security could rely upon as a fully interoperable point of service that would exist above any question of security, user authentication, or commercial interest. It would also be independent of rules and requirements from other industry groups which have much different needs than the financial community.

Existing commercial Certificate Authorities exist primarily for the Web PKI, that is, the general usage of the Internet by businesses and individuals. This has traditionally been governed by Browsers, who consume certificates to present security information in their user interface. However, Browsers and the financial community interests are not always aligned. Hence when Browsers dictate policies which Certificate Authorities are forced to follow; the financial community has no choice but to go along.

This group will examine options to determine a way that would protect the financial community's interest while maintaining a strong security posture.

Update: the group is currently proceeding with foundational work to establish a financial PKI product governed by X9 standards.

PKI Study Group Chair - Dean Coclin
PKI Study Group Vice Chair - Bill Poletti

11.7 X9F Quantum Computing Risk Study Group

Scope

The Quantum Computing Risk study group was created to review the state of quantum computing and determine a best estimate for when a large-scale, fault tolerant quantum computer capable of cracking certain current cryptography will exist. Based on this prediction, the group will propose a plan for how X9 will address the issues and develop plans for members of the U.S. financial industry to use to address these issues.

X9F Quantum Computing Risk Study Group Chair - Steve Stevens
X9F Quantum Computing Risk Study Group Vice Chair – Tim Hollebeek

Current Projects

1. ASC X9 IR 01-2019 – Quantum Computing Risks to the Financial Services Industry
2. ASC X9 IR 02-2021 – Quantum Computing Risk Check List
3. Propose a process for X9 to identify and address risks posed by quantum computers

11.8 X9F Artificial Intelligence Study Group (4/21/2023)

Scope

The group should initially investigate the current AI product offerings and learn as much as possible about each. Special addition should be given to products that target the financial industry. The group should then create educational information for X9 members targeted to people with little or no background in AI. The group should identify areas where standards are or

could be needed to safeguard financial and user data. The group should also investigate and document general use cases for AI in the financial industry. The group may investigate any aspect of AI that may pertain to or be usable by the Financial Industry. With respect to the educational information, the group should attempt to provide at least high-level information on the following topics: 1) What companies have AI products that can at least be demonstrated today.? 2) Identify AI products that target financial applications. 3) What methods of learning do the AI engines use and what information would they need? If the required information includes sensitive data, how would that data be protected? 4) What features or improvements are already planned for future releases? 5) Identify some of the ways AI could help reduce cost or friction in the financial industry. 6) Identify potential security issues created by the introduction of an AI product in a financial environment. 7) Consider what security requirements would be needed within an AI product to protect data or infrastructure connected to the AI product.

X9F Quantum Computing Risk Study Group Chair – Peter Bordow
X9F Quantum Computing Risk Study Group Vice Chair – Ralph Poore

12.0 International Financial Standards Work

The International Organization for Standardization ("ISO") develops international standards for many industries, including the financial industry. Membership in ISO is by country. Countries that participate in ISO have national standard's bodies that join one or more ISO committees or groups and they represent their home country on those committees and groups. When a national standard's body joins an ISO committee or group, they create a Technical Advisor Group ("TAG") for that ISO committee or group. Individual companies or organizations can participate on an ISO committee or group by joining their country's TAG for that ISO committee or group.

Through ANSI, X9 represents the United States on ISO TC68, TC68/SC2, TC68/SC8, and TC68/SC9. X9 has TAGs for each committee and group and they are described in more detail below. Most TAGs meet every month. Participation in an X9 TAG is restricted to category A members of X9.

For ISO TC68, X9 provides leadership of the ISO committee by performing the secretariat functions and by providing the committee's chair. Additionally, X9 has liaisons with other organizations to monitor work that may have an impact on the financial services industry.

12.1 ISO TC68 Financial Services (X9 is the US TAG and Secretariat)

Scope
Technical Committee 68 (ISO/TC 68) is responsible for creating global standards for the financial services industry. TC 68 is responsible for standards that cover core banking, capital markets including asset management, payments, credit card processing, and information security aspects specific to financial services. The committee is organized into three subcommittees: SC2 (Information Security), SC8 (Reference Data), and SC9 (Information Exchange). ISO standards can be purchase from the ISO Store. Click here for just TC68 standards.

The ISO 20022 messaging standard is controlled by TC68/SC9. Operational data used by the ISO 20022 standard is governed by the ISO 20022 RMG. The X9 TAG to ISO TC68/SC9 is the gateway to both SC9 and the RMG.

ISO TC68 Chair – Jim Northey (US-X9)
ISO TC68 Committee Manager – Janet Busch (US-X9)

12.2 List of International Standards Supported by X9 (including projects for ISO TC68, TC68/SC2, TC68/SC8 and TC68/SC9)

1. ISO 1004-1:2013 - Information processing — Magnetic ink character recognition — Part 1: Print specifications for E13B
2. ISO 1004-2:2013 - Information processing — Magnetic ink character recognition — Part 2: Print specifications for CMC7
3. ISO 10383:2012 - Securities and related financial instruments — Codes for exchanges and market identification (MIC)
4. ISO 10962:2019 - Securities and related financial instruments — Classification of financial instruments (CFI) code

5. ISO 11568-1:2005 - Banking — Key management (retail) — Part 1: Principles
6. ISO 11568-2:2012 - Financial services — Key management (retail) — Part 2: Symmetric ciphers, their key management and life cycle
7. ISO 11568-4:2007 - Banking — Key management (retail) — Part 4: Asymmetric cryptosystems — Key management and life cycle
8. ISO 11649:2009 - Financial services — Core banking — Structured creditor reference to remittance information
9. ISO 12812-1:2017 - Core banking — Mobile financial services — Part 1: General framework
10. ISO 13491-1:2016 -Financial services — Secure cryptographic devices (retail) — Part 1: Concepts, requirements and evaluation methods
11. ISO 13491-2:2017 - Financial services — Secure cryptographic devices (retail) — Part 2: Security compliance checklists for devices used in financial transactions
12. ISO 13492:2019 - Financial services — Key-management-related data element — Application and usage of ISO 8583-1 data elements for encryption
13. ISO 13616-1:2020 - Financial services — International bank account number (IBAN) — Part 1: Structure of the IBAN
14. ISO 13616-2:2020 - Financial services — International bank account number (IBAN) — Part 2: Role and responsibilities of the Registration Authority
15. ISO 15022-1:1999 - Securities — Scheme for messages (Data Field Dictionary) — Part 1: Data field and message design rules and guidelines
16. ISO 15022-1:1999 - Securities — Scheme for messages (Data Field Dictionary) — Part 1: Data field and message design rules and guidelines — Technical Corrigendum 1: .
17. ISO 15022-2:1999 - Securities — Scheme for messages (Data Field Dictionary) — Part 2: Maintenance of the Data Field Dictionary and Catalogue of Messages
18. ISO 15022-2:1999 - Securities — Scheme for messages (Data Field Dictionary) — Part 2: Maintenance of the Data Field Dictionary and Catalogue of Messages — Technical Corrigendum 1:.
19. ISO 16609:2012 - Financial services — Requirements for message authentication using symmetric techniques
20. ISO 17442-1:2020 - Financial services — Legal entity identifier (LEI) — Part 1: Assignment
21. ISO 17442-2:2020 - Financial services — Legal entity identifier (LEI) — Part 2: Application in digital certificates
22. ISO 18245:2003 - Retail financial services — Merchant category codes
23. ISO 18774:2015 - Securities and related financial instruments — Financial Instrument Short Name (FISN)
24. ISO 19092:2008 - Financial services — Biometrics — Security framework
25. ISO 20022-1:2013 - Financial services — Universal financial industry message scheme — Part 1: Metamodel
26. ISO 20022-2:2013 - Financial services — Universal financial industry message scheme — Part 2: UML profile
27. ISO 20022-3:2013 - Financial services — Universal financial industry message scheme — Part 3: Modelling
28. ISO 20022-4:2013 - Financial services — Universal financial industry message scheme — Part 4: XML Schema generation

29. ISO 20022-5:2013 - Financial services — Universal financial industry message scheme — Part 5: Reverse engineering
30. ISO 20022-6:2013 - Financial services — Universal financial industry message scheme — Part 6: Message transport characteristics
31. ISO 20022-7:2013 - Financial services — Universal financial industry message scheme — Part 7: Registration
32. ISO 20022-8:2013 - Financial services — Universal financial industry message scheme — Part 8: ASN.1 generation
33. ISO 20038:2017 - Banking and related financial services — Key wrap using AES
34. ISO 20038:2017 - Banking and related financial services — Key wrap using AES — Amendment 1
35. ISO 20275:2017 - Financial services — Entity legal forms (ELF)
36. ISO 21188:2018 - Public key infrastructure for financial services — Practices and policy framework
37. ISO 21586:2020 - Reference data for financial services — Specification for the description of banking products or services (BPoS)
38. ISO 22307:2008 - Financial services — Privacy impact assessment
39. ISO 23897:2020 - Financial services — Unique transaction identifier (UTI)
40. ISO 4217:2015 - Codes for the representation of currencies
41. ISO 6166:2021 - Financial services — International securities identification number (ISIN)
42. ISO 8532:1995 - Securities — Format for transmission of certificate numbers
43. ISO 8583-1:2003 - Financial transaction card originated messages — Interchange message specifications — Part 1: Messages, data elements and code values
44. ISO 8583-2:1998 - Financial transaction card originated messages — Interchange message specifications — Part 2: Application and registration procedures for Institution Identification Codes (IIC)
45. ISO 8583-3:2003 - Financial transaction card originated messages — Interchange message specifications — Part 3: Maintenance procedures for messages, data elements and code values
46. ISO 9019:1995 - Securities — Numbering of certificates
47. ISO 9144:1991 - Securities — Optical character recognition line — Position and structure
48. ISO 9362:2014 - Banking — Banking telecommunication messages — Business identifier code (BIC)
49. ISO 9564-1:2017 - Financial services — Personal Identification Number (PIN) management and security — Part 1: Basic principles and requirements for PINs in card-based systems
50. ISO 9564-2:2014 - Financial services — Personal Identification Number (PIN) management and security — Part 2: Approved algorithms for PIN encipherment
51. ISO 9564-4:2016 - Financial services — Personal Identification Number (PIN) management and security — Part 4: Requirements for PIN handling in eCommerce for Payment Transactions
52. ISO/AWI 13491-1 - Financial services — Secure cryptographic devices (retail) — Part 1: Concepts, requirements and evaluation methods
53. ISO/AWI 18245 - Retail financial services — Merchant category codes

54. ISO/AWI 19092 - Financial services — Biometrics — Security framework
55. ISO/AWI 5158 - Mobile financial services — customer identification guidelines
56. ISO/AWI 5201 - Financial services — Code-scanning payment security
57. ISO/AWI 8583 - Financial transaction card originated messages — Interchange message specifications
58. ISO/AWI 9564-1 - Financial services — Personal Identification Number (PIN) management and security — Part 1: Basic principles and requirements for PINs in card-based systems
59. ISO/AWI TR 14742 - Financial services — Recommendations on cryptographic algorithms and their use
60. ISO/AWI TS 23526 - Security aspects for digital currencies
61. ISO/CD 16609 - Financial services — Requirements for message authentication using symmetric techniques
62. ISO/DIS 11568 - Financial services — Key management (retail) — Principles, symmetric ciphers and asymmetric cryptosystems, their key management and life cycle
63. ISO/DIS 24165-1 - Digital token identifier (DTI) — Registration, assignment and structure — Part 1: Method for registration and assignment
64. ISO/DIS 24165-2 - Digital token identifier (DTI) — Registration, assignment and structure — Part 2: Data elements for registration
65. ISO/DIS 24366 - Financial services – Natural Person Identifier (NPI)
66. ISO/DIS 3531-1 - Financial services – Financial information eXchange session layer — Part 1: FIX TagValue encoding
67. ISO/DIS 3531-2 - Financial services – Financial information eXchange session layer — Part 2: FIX session layer
68. ISO/DIS 3531-3 - Financial services – Financial information eXchange session layer — Part 3: FIX session layer test cases
69. ISO/DIS 4914 - Financial services – Unique Product Identifier (UPI)
70. ISO/DIS 5009 - Financial Services — Official organizational roles — Scheme for official organizational roles
71. ISO/DIS 5116-1 - Improving transparency in financial and business reporting — Harmonization topics — Part 1: European data point methodology for supervisory reporting
72. ISO/DIS 5116-2 - Improving transparency in financial and business reporting — Harmonization topics — Part 2: Guidelines for data point modelling
73. ISO/DIS 5116-3 - Improving transparency in financial and business reporting — Harmonization topics — Part 3: Mapping between DPM and MDM
74. ISO/DIS 9564-5 - Financial services — Personal Identification Number (PIN) management and security — Part 5: Methods for the generation, change, and verification of PINs and card security data using the advanced encryption standard
75. ISO/DTR 32220 - Sustainable Finance – Glossary of key terms
76. ISO/NP 13491-2 - Financial services — Secure cryptographic devices (retail) — Part 2: Security compliance checklists for devices used in financial transactions
77. ISO/NP TR 22126-1 - ISO 20022 Additional External Representations — Part 1: General
78. ISO/NP TR 22126-2 - ISO 20022 Additional External Representations — Part 2: RDF/OWL Representation of the ISO 20022 Metamodel and e-Repository

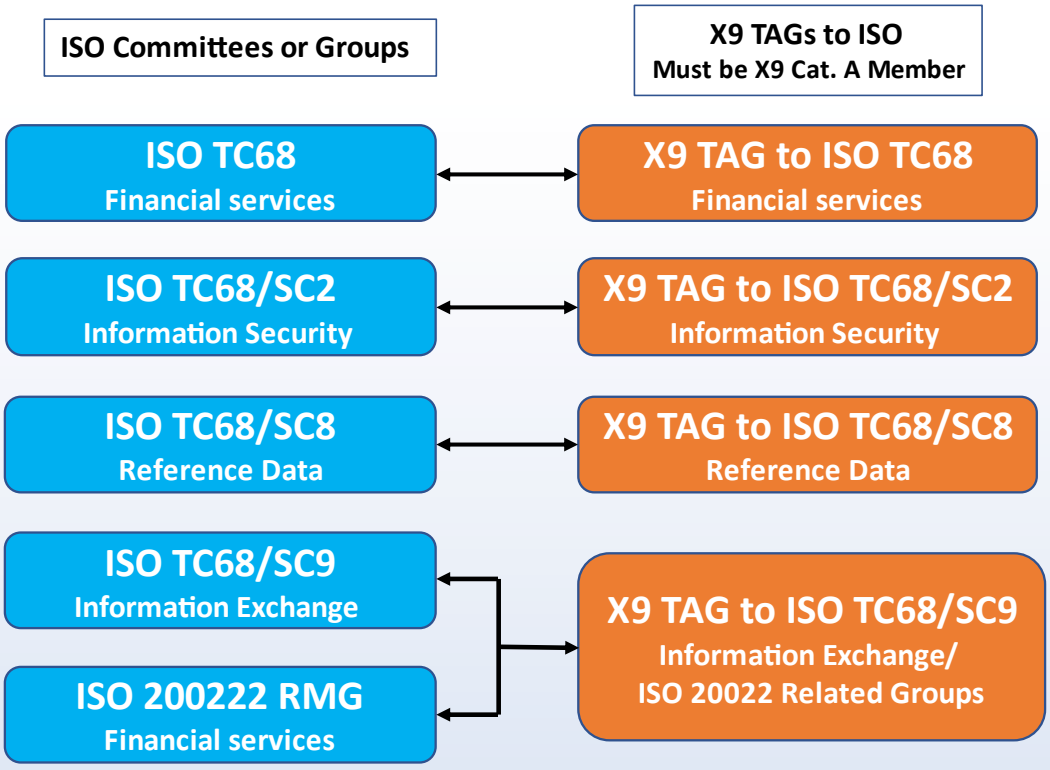
79. ISO/NP TR 22126-3 - ISO 20022 Additional External Representations — Part 3: Semantic Enrichment of the ISO 20022 Conceptual Model
80. ISO/NP TR 22126-4 - ISO 20022 Additional External Representations — Part 4: Multi-Standard Semantic Portal for Finance
81. ISO/PRF 10962 - Securities and related financial instruments — Classification of financial instruments (CFI) code
82. ISO/PRF 23195 - Security objectives of information systems of third-party payment services
83. ISO/PWI 32212 - Requirements for sustainable private equity and venture capital funds
84. ISO/PWI 5106 - Guidelines on sharing of product traceability information in e-commerce
85. ISO/PWI 5107 - Guidelines on acceptance of product quality evaluation information in e-commerce
86. ISO/PWI PAS 32211 - Principles and guidelines for development and implementation of sustainable finance products and services
87. ISO/PWI TR 22126-5 - ISO 20022 Additional External Representations — Part 5: Mapping from FIX Orchestra to the common portal data model
88. ISO/PWI TR 22126-6 - ISO 20022 Additional External Representations — Part 6: Mapping from IMIX to the common portal data model
89. ISO/PWI TR 22126-7 - ISO 20022 Additional External Representations — Part 7: Mapping from ISO 15022/MT to the common portal data model
90. ISO/PWI TR 22126-8 - ISO 20022 Additional External Representations — Part 8: Mapping from IFX to the common portal data model
91. ISO/PWI TR 22126-9 - ISO 20022 Additional External Representations — Part 9: Mapping from BIAN to the common portal data model
92. ISO/TR 14742:2010 - Financial services — Recommendations on cryptographic algorithms and their use
93. ISO/TR 19038:2005 - Banking and related financial services — Triple DEA — Modes of operation — Implementation guidelines
94. ISO/TR 21797:2019 - Reference data for financial services — Overview of identification of financial instruments
95. ISO/TR 21941:2017 - Financial services — Third-party payment service providers
96. ISO/TS 12812-2:2017 - Core banking — Mobile financial services — Part 2: Security and data protection for mobile financial services
97. ISO/TS 12812-3:2017 - Core banking — Mobile financial services — Part 3: Financial application lifecycle management
98. ISO/TS 12812-4:2017 - Core banking — Mobile financial services — Part 4: Mobile payments-to-persons
99. ISO/TS 12812-5:2017 Core banking — Mobile financial services — Part 5: Mobile payments to businesses
100. ISO/WD 24374 - Information technology — Security techniques — DLT and Blockchain for Financial Services
101. ISO/WD 32110 - Transaction assurance in E-commerce ---- Terminology
102. ISO/WD 32111 - Transaction assurance in E-commerce — Principles and Framework
103. ISO/WD 32210 - Framework for sustainable finance: Principles and guidance

ASC X9 Interface to ISO Groups

International Standards – Technical Advisory Groups

X9 Represents the United States on these ISO Groups

All TAGs Report to the X9 Consensus Body



Note 1: X9 is the secretariat for the ISO 8583 Maintenance Agency

Note 2: X9 has a liaison with ISO TC307

1/15/2025

12.2.1 X9 TAG to ISO TC68 - Financial Services

ISO TC68 is a Technical Committee of ISO. It has been designated by ISO to be responsible for International Financial Standards. At present, all development and maintenance of standards have been moved to the subcommittees under ISO TC68. This may change in the future. While not having active standards to support, ISO TC68 is still responsible for the management and oversight of the subcommittees and their work. The X9 TAG to ISO TC68 is responsible for representing the United States on any issues before ISO TC68. This includes tracking the activities of TC68, providing the vote for the United States on any TC68 ballot, and providing subject matter experts when needed. The TAG may, with the support of other members, put forward a request for a new work item as the need is identified. Note: TC68 does have several work groups that report to it but these groups are not developing standards.

The TC68 TAG meets every three months or more often if needed.

TAG Chair: Corby Dear

12.2.2 X9 TAG to ISO TC68/SC2 - Information Security

ISO TC68/SC2 was established to look at Information Security for the financial industry. This includes cryptographic algorithms to protect financial data. The X9 TAG to ISO TC68/SC2 is responsible for representing the United States on any issues before ISO TC68/SC2. This includes tracking the activity of SC2, providing the vote for the United States on any SC2 ballot, and providing subject matter experts when needed to develop international ISO standards. The TAG may, with the support of other members, put forward requests for new work items as the need is determined. The SC2 subcommittee has the following work groups:

WG8 – PKI/Quantum
WG11 – Encryption
WG13 – Security in Retail Banking (F6)
WG16 – 3rd Party Payment
WG17 – Digital Currency
WG18 – Customer ID
WG19 – Code scanning payments (QR)

The X9 TAG to ISO TC68/SC2 meets once a month. As with all international work, only X9 Category A members can participate. (This restriction is due to the added expense to X9 for working with ISO.)

The TC68/SC2 TAG meets every month or as needed.

TAG Chair: Richard Kisley

12.2.3 X9 TAG to ISO TC68/SC8 – Reference Data

ISO TC68/SC8 handle data used to identify, classify, and track financial information. The X9 TAG to ISO TC68/SC8 is responsible for representing the United States on any issues before ISO TC68/SC8. This includes tracking the activity of SC8, providing the vote for the United

States on any SC8 ballot, and providing subject matter experts, when needed, to develop international ISO standards. The TAG may, with the support of other members, put forward requests for new work items as the need is determined. The SC8 subcommittee has the following work groups:

SG5 – Digital wallet
WG3 – Digital token ID
WG7 – Nature Person ID (Mirror group at present)
WG10 – Revision of FIN
WG11 – Verifiable LEI

The X9 TAG to ISO TC68/SC8 meets once a month, usually after the X9D monthly meeting. As with all international work, only X9 Category "A" members can participate. (This restriction is due to the added expense to X9 for working with ISO.)

The TC68/SC8 TAG meets every month, usually either before or after the X9D meeting.

TAG Chair: Tom Brown

12.2.4 X9 TAG to ISO TC68/SC9 – Information Exchange

ISO TC68/SC9 handles standards related to information exchange. The best-known standard, controlled by SC9, is ISO 20022. This standard is widely used around the world and its acceptance is growing rapidly. The X9 TAG to ISO TC68/SC9 is responsible for representing the United States on any issues before ISO TC68/SC9. This includes tracking the activity of SC9 (including work on ISO 20022), providing the vote for the United States on any SC9 ballot, and providing subject matter experts, when needed, to develop international ISO standards for the group. The TAG may, with the support of other members, put forward requests for new work items as the need is determined. The SC9 subcommittee has the following work groups:

WG1 – Semantic Model
WG3 – Revision of 8583 & 18245
WG4 – Revision of 20022
TG1 – Card Standards

The X9 TAG to ISO TC68/SC9 meets once a month, only X9 Category "A" members can participate. (This restriction is due to the added expense to X9 for working with ISO.)

Note: In addition to representing the United States on TC68/SC9, this TAG also represents X9 on the ISO 20022 RMG. See below for more details. If you are interested in ISO 20022, joining this TAG will provide access to ISO TC68/SC9 (the standard) and to the ISO 20022 RMG (operations).

TAG Chair: Rich Robinson

12.3 ISO 20022 Registration Management Group (RMG)

Scope

The ISO 20022 Registration Management Group (RMG) is made of senior industry experts nominated by registered Member Entities. The RMG was created in 2004 and had its first meeting in January 2005. It is the highest ISO 20022 registration body: it supervises the overall registration process and reports to ISO TC68/SC9. The role of the RMG is to promote and support the involvement of financial service actors to facilitate the registration and maintenance of high quality globally relevant ISO 20022 compliant business models for exchange of information for financial services.

The mission of the RMG is to ensure that ISO 20022 is a trusted standard providing high quality business models for exchange of information for financial services. The RMG defines the scope of necessary SEGs, approves business justifications for new messages and allocates them to one or more SEGs. The RMG also acts as a "court of appeal" in case of conflicts between the RA, the TSG, the SEGs and the organizations that want to develop ISO 20022 messages (submitting organizations). This group is independent of X9.

ISO 20022 RMG Chair – Mike Tagai

X9 Representatives to the RMG:

- Rich Robinson (primary)
- Ted Rothschild (Alt)
- Mark Tiggas (Alt)

Current Projects

1. Vetting requests to register new information or data in the 20022 model

Participation in the RMG:

Participation in the ISO 20022 RMG is through the X9 TAG to ISO TC68/SC9. Since SC9 is the home of the ISO 20022 standard, it is appropriate for the TAG handle all issues with the ISO 20022 RMG. The X9 TAG to ISO TC68/SC9 meets once a month and covers issues with SC9 and the RMG. Only X9 Category “A” members can participate. (This restriction is due to the added expense to X9 for working with ISO.)

13.0 X9 Liaisons & Relationships with other Organizations

13.1 Liaison with ISO TC307 – Blockchain and Distributed Ledger

Scope: Standardization of blockchain technologies and distributed ledger technologies.
Secretariat: Australia
Chairperson: Ms. Amy Howie
X9 Liaison to ISO TC307: Jeff Stapleton

About ISO TC307
Over recent years, blockchain has evolved into a transformational technology promising to offer secure, real-time transactions across different sectors and industries that will revolutionize the way we do business. ISO is at the forefront of this technology to ensure that its users all speak the same language.

X9 has a liaison agreement with ISO TC307. This allows X9 to monitor and comment on their work.

13.2 Liaison with the Object Management Group (OMG)

About the OMG:
The Object Management Group® (OMG®) is an international, open membership, not-for-profit technology standards consortium with representation from government, industry, and academia. OMG Task Forces develop enterprise integration standards for a wide range of technologies and an even wider range of industries. OMG's modeling standards enable powerful visual design, execution and maintenance of software and other processes.

X9 has an agreement that allows the adoption of the Financial Instrument Global Identifier standard as an American National Standard under X9.

13.3 Liaison with PCI Security Standards Council

About PCI SSC:
The PCI Security Standards Council (PCI SSC) is a global forum for the ongoing development, enhancement, storage, dissemination and implementation of security standards for account data protection. Our role is to enhance global payment account data security by developing standards and supporting services that drive education, awareness, and effective implementation by stakeholders. We achieve this with a strategic framework to guide our decision-making process and ensure that every initiative is aligned with our mission and supports the needs of the global payments industry.

X9 has an agreement with PCI SSC to share development and support of the PCI Security Requirements and Testing Procedures (also known as the PCI PIN Security Standard.

13.4 Member of Faster Payments Council

About the FPC:
The Faster Payments Council (FPC) is an industry-led membership organization whose vision is a world-class payment system where every person or organization can safely and securely pay anyone, anywhere, at any time and with near-immediate funds availability. By design, the FPC encourages a diverse range of perspectives and is open to all stakeholders in the U.S. payment system. Guided by principles of fairness, inclusiveness, flexibility, and transparency, the FPC uses collaborative, problem-solving approaches to resolve the issues that are inhibiting broad faster payments adoption in this country.

X9 is a founding member and participates in the work of the FPC. X9 is also available to develop standards when needed.

13.5 Member of the NACHA Payments Innovation Alliance (PIA)

About PIA:
The Payments Innovation Alliance is the industry's leading membership group of smart, savvy payments professionals who believe in making innovation happen. The Alliance brings together diverse, global stakeholders—financial institutions, fintechs, solution providers, businesses and corporates, law firms and more—that can outline existing and future payment trends to help member organizations remain competitive. There is no better place than the Alliance to help members understand the critical issues facing the payments ecosystem.

X9 is a founding member and their parent organization, NACHA, is a member of X9. X9 provides subject matter experts.

13.6 Member of ISITC

About ISITC:
ISITC brings together investment managers, broker dealers, custodians, utilities, and technology vendors to develop and promote standards and best practices that increase operational efficiencies across the securities industry, enabling member companies to provide essential and enhanced products and services. Founded in 1991, ISITC's membership totals more than 2,000 financial services professionals representing more than 60 firms and trillions of dollars in AUM/AUA. Through its member committees and work groups, ISITC plays a direct role in shaping the future of securities operations by creating and updating market practices, and educating the membership around emerging trends in technology and regulations.

X9 is a member of ISITC and they are a member of X9. ISITC participates on the X9D subcommittee and X9 provides subject matter experts to ISITC.

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