



## American National Standard for Financial Services

X9.100-187-2008

# Specifications for Electronic Exchange of Check and Image Data- Domestic



Accredited Standards Committee X9, Incorporated  
Financial Industry Standards

**Date Approved: 11/11/2008**

American National Standards Institute

American National Standards, Technical Reports, and Guides developed through the Accredited Standards Committee X9, Inc., are copyrighted. Copying these documents for personal or commercial use outside X9 membership agreements is prohibited without express written permission of the Accredited Standards Committee X9, Inc. For additional information please contact ASC X9, Inc., 1212 West Street, Annapolis, Maryland, 21401 USA.

## Foreword

Approval of an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the standards or not from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

### NOTICE: INSTRUCTIONS FOR SUBMITTING A PROPOSED CHANGE TO THIS ASC X9 STANDARD UNDER CONTINUOUS MAINTENANCE

This standard is maintained under continuous maintenance procedures by the Accredited Standards Committee X9, Inc. which has established a documented program/process for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard.

Consideration will be given to proposed changes within 45 days of submittal. Proposed changes must be submitted to "continuous\_maintenance@x9.org" using the published change form.

**CAUTION NOTICE:** This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of approval.

Published by

**Accredited Standards Committee X9, Inc.**  
**1212 West Street Suite #200**  
**Annapolis, Maryland 21401 USA**  
**X9 Online <http://www.x9.org>**

Copyright © 2008 by Accredited Standards Committee X9, Inc.

All rights reserved.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without prior written permission of the publisher. Printed in the United States of America.

## Contents

Figures .....	xi
Introduction .....	xii
1 Scope, Purpose, and Application .....	1
1.1 Scope .....	1
1.2 Presentment Disclaimer .....	1
1.3 Purpose and Application .....	2
2 References .....	2
3 Definitions .....	2
4 File Structure.....	7
4.1 Record Types .....	7
4.2 File Structure Requirements .....	8
5 Data and Field Specifications.....	14
5.1 Generic Data Types .....	14
5.1.1 Alphabetic (A) .....	14
5.1.2 Numeric (N) .....	14
5.1.3 Blank (B) .....	14
5.1.4 Special characters (S) .....	14
5.1.5 Alphameric (AN).....	14
5.1.6 Alphameric/special (ANS).....	14
5.1.7 Numericblank (NB) .....	15
5.1.8 Numeric/special (NS).....	15
5.1.9 Binary.....	15
5.2 Special MICR line data types .....	15
5.2.1 Asterisk (*).....	15
5.2.2 Dash (-).....	15
5.2.3 Forward slash (/) .....	15
5.2.4 Numericblank/special MICR (NBSM) .....	15
5.2.5 Numericblank/special MICR On-Us (NBSMOS) .....	15
5.3 Fill data .....	16
5.4 Data justification .....	16
5.4.1 Right justification .....	16
5.4.2 Left justification .....	16
5.5 General Field Format.....	16
5.6 User fields .....	17
6 Table Headings Title Descriptions.....	17
6.1 Field.....	17
6.2 Field Name.....	17
6.3 Usage .....	17
6.4 Position.....	17
6.5 Size.....	17
6.6 Type.....	18
6.7 Format.....	18
6.8 Defined Values .....	18
7 File Header Record (Type 01) .....	19
7.1 Record Type .....	19

7.2	Standard Level .....	19
7.3	Test File Indicator .....	20
7.4	Immediate Destination Routing Number .....	20
7.5	Immediate Origin Routing Number .....	20
7.6	File Creation Date .....	21
7.7	File Creation Time.....	21
7.8	Resend Indicator.....	21
7.9	Immediate Destination Name .....	21
7.10	Immediate Origin Name.....	22
7.11	File ID Modifier .....	22
7.12	Country Code .....	22
7.13	User Field .....	22
7.14	Companion Document Indicator .....	23
8	Cash Letter Header Record (Type 10) .....	24
8.1	Record Type .....	24
8.2	Collection Type Indicator.....	25
8.3	Destination Routing Number.....	25
8.4	ECE Institution Routing Number.....	26
8.5	Cash Letter Business Date .....	26
8.6	Cash Letter Creation Date .....	26
8.7	Cash Letter Creation Time.....	27
8.8	Cash Letter Record Type Indicator.....	27
8.9	Cash Letter Documentation Type Indicator .....	28
8.10	Cash Letter ID .....	28
8.11	Originator Contact Name .....	28
8.12	Originator Contact Phone Number .....	29
8.13	Fed Work Type .....	29
8.14	Returns Indicator .....	29
8.15	User Field .....	29
8.16	Reserved.....	30
9	Bundle Header Record (Type 20).....	31
9.1	Record Type .....	31
9.2	Collection Type Indicator.....	31
9.3	Destination Routing Number .....	32
9.4	ECE Institution Routing Number.....	32
9.5	Bundle Business Date.....	33
9.6	Bundle Creation Date .....	33
9.7	Bundle ID .....	33
9.8	Bundle Sequence Number .....	33
9.9	Cycle Number.....	34
9.10	Reserved.....	34
9.11	User Field .....	34
9.12	Reserved.....	34
10	Check Detail Record (Type 25).....	35
10.1	Record Type .....	35
10.2	Auxiliary On-Us.....	36
10.3	External Processing Code .....	36
10.4	Payor Bank Routing Number.....	36
10.5	Payor Bank Routing Number Check Digit.....	36
10.6	On-Us .....	37
10.7	Item Amount.....	37
10.8	ECE Institution Item Sequence Number.....	37
10.9	Documentation Type Indicator .....	37

10.10	Electronic Return Acceptance Indicator .....	38
10.11	MICR Valid Indicator .....	38
10.12	BOFD Indicator .....	39
10.13	Check Detail Record Addendum Count .....	39
10.14	Correction Indicator .....	39
10.15	Archive Type Indicator .....	39
11	Check Detail Addendum A Record (Type 26) .....	41
11.1	Record Type .....	41
11.2	Check Detail Addendum A Record Number.....	42
11.3	Return Location Routing Number .....	42
11.4	BOFD / Endorsement Date.....	42
11.5	BOFD Item Sequence Number .....	43
11.6	Deposit Account Number at BOFD .....	43
11.7	BOFD Deposit Branch .....	43
11.8	Payee Name.....	43
11.9	Truncation Indicator .....	43
11.10	BOFD Conversion Indicator .....	44
11.11	BOFD Correction Indicator .....	44
11.12	User Field .....	45
11.13	Reserved.....	45
12	Check Detail Addendum B Record (Type 27) .....	46
12.1	Record Type .....	47
12.2	Variable Size Record Indicator .....	47
12.3	Microfilm Archive Sequence Number.....	47
12.4	Length of Image Archive Sequence Number/Image Archive Locator.....	48
12.5	Image Archive Sequence Number/Image Archive Locator .....	48
12.6	Description .....	48
12.7	User Field .....	49
12.8	Reserved.....	49
13	Check Detail Addendum C Record (Type 28) .....	50
13.1	Record Type .....	50
13.2	Check Detail Addendum C Record Number.....	51
13.3	Endorsing Bank Routing Number .....	51
13.4	BOFD / Endorsement Date.....	51
13.5	Endorsing Bank Item Sequence Number .....	51
13.6	Truncation Indicator .....	52
13.7	Endorsing Bank Conversion Indicator .....	52
13.8	Endorsing Bank Correction Indicator.....	52
13.9	Return Reason .....	53
13.10	User Field .....	53
13.11	Endorsing Bank Identifier .....	53
13.12	Reserved.....	54
14	Return Record (Type 31).....	55
14.1	Record Type .....	55
14.2	Payor Bank Routing Number.....	56
14.3	Payor Bank Routing Number Check Digit.....	56
14.4	On-U's .....	56
14.5	Item Amount.....	56
14.6	Return Reason .....	57
14.7	Return Record Addendum Count .....	57

14.8	Return Documentation Type Indicator .....	57
14.9	Forward Bundle Date.....	58
14.10	ECE Institution Item Sequence Number.....	58
14.11	External Processing Code .....	58
14.12	Return Notification Indicator .....	59
14.13	Archive Type Indicator .....	59
14.14	Number of times returned.....	59
14.15	Reserved.....	60
15	Return Addendum A Record (Type 32) .....	61
15.1	Record Type .....	61
15.2	Return Addendum A Record Number.....	62
15.3	Return Location Routing Number.....	62
15.4	BOFD / Endorsement Business Date.....	62
15.5	BOFD Item Sequence Number .....	63
15.6	Deposit Account Number at BOFD .....	63
15.7	BOFD Deposit Branch .....	63
15.8	Payee Name.....	63
15.9	Truncation Indicator .....	64
15.10	BOFD Conversion Indicator .....	64
15.11	BOFD Correction Indicator .....	64
15.12	User Field .....	65
15.13	Reserved.....	65
16	Return Addendum B Record (Type 33) .....	66
16.1	Record Type .....	66
16.2	Payor Bank Name .....	66
16.3	Auxiliary On-Us.....	66
16.4	Payor Bank Item Sequence Number.....	67
16.5	Payor Bank Business Date .....	67
16.6	Payor Account Name.....	67
17	Return Addendum C Record (Type 34) .....	68
17.1	Record Type .....	69
17.2	Variable Size Record Indicator .....	69
17.3	Microfilm Archive Sequence Number .....	69
17.4	Length of Image Archive Sequence Number/Image Archive Locator .....	69
17.5	Image Archive Sequence Number/Image Archive Locator .....	70
17.6	Description .....	70
17.7	User Field .....	70
17.8	Reserved.....	71
18	Return Addendum D Record (Type 35) .....	72
18.1	Record Type .....	72
18.2	Return Addendum D Record Number.....	73
18.3	Endorsing Bank Routing Number .....	73
18.4	Endorsing Bank Endorsement Date .....	73
18.5	Endorsing Bank Item Sequence Number .....	74
18.6	Truncation Indicator .....	74
18.7	Endorsing Bank Conversion Indicator .....	74
18.8	Endorsing Bank Correction Indicator.....	75
18.9	Return Reason .....	75
18.10	User Field .....	75
18.11	Endorsing Bank Identifier .....	75
18.12	Reserved.....	76
19	Account Totals Detail Record (Type 40).....	77

19.1	Record Type .....	77
19.2	Destination Routing Number .....	77
19.3	Key Account/Low Account in Account Number Range.....	78
19.4	Key Account/High Account in Account Number Range.....	78
19.5	Total Item Count .....	78
19.6	Total Item Amount .....	78
19.7	User Field .....	78
19.8	Reserved.....	79
20	Non-Hit Totals Detail Record (Type 41).....	80
20.1	Record Type .....	80
20.2	Destination Routing Number .....	80
20.3	Non-Hit Indicator.....	81
20.4	Total Item Count .....	81
20.5	Total Item Amount .....	81
20.6	User Field .....	81
20.7	Reserved.....	81
21	Image View Detail Record (Type 50).....	82
21.1	Record Type .....	83
21.2	Image Indicator .....	83
21.3	Image Creator Routing Number .....	83
21.4	Image Creator Date.....	83
21.5	Image View Format Indicator.....	84
21.6	Image View Compression Algorithm Identifier.....	84
21.7	Image View Data Size .....	85
21.8	View Side Indicator.....	85
21.9	View Descriptor.....	85
21.10	Digital Signature Indicator.....	86
21.11	Digital Signature Method .....	86
21.12	Security Key Size.....	86
21.13	Start of Protected Data.....	87
21.14	Length of Protected Data.....	87
21.15	Image Recreate Indicator.....	87
21.16	User Field .....	87
21.17	Image TIFF Variance Indicator .....	88
21.18	Override Indicator .....	88
21.19	Reserved.....	89
22	Image View Data Record (Type 52).....	90
22.1	Record Type .....	91
22.2	ECE Institution Routing Number.....	91
22.3	Bundle Business Date.....	91
22.4	Cycle Number.....	92
22.5	ECE Institution Item Sequence Number.....	92
22.6	Security Originator Name .....	92
22.7	Security Authenticator Name .....	92
22.8	Security Key Name .....	93
22.9	Clipping Origin.....	93
22.10	Clipping Coordinate h1 .....	93
22.11	Clipping Coordinate h2 .....	94
22.12	Clipping Coordinate v1 .....	94
22.13	Clipping Coordinates v2 .....	94
22.14	Length of Image Reference Key.....	94
22.15	Image Reference Key .....	95
22.16	Length of Digital Signature.....	95

22.17	Digital Signature .....	95
22.18	Length of Image Data .....	95
22.19	Image Data.....	96
23	Image View Analysis Record (Type 54) .....	97
23.1	Record Type .....	98
23.2	Global Image Quality .....	98
23.3	Global Image Usability .....	99
23.4	Imaging Bank Specific Test.....	99
23.5	Partial Image .....	99
23.6	Excessive Image Skew.....	100
23.7	Piggyback Image .....	100
23.8	Too Light Or Too Dark.....	100
23.9	Streaks And Or Bands.....	100
23.10	Below Minimum Image Size.....	101
23.11	Exceeds Maximum Image Size.....	101
23.12	Reserved.....	101
23.13	Reserved.....	102
23.14	Reserved.....	102
23.15	Reserved.....	102
23.16	Reserved.....	102
23.17	Reserved.....	102
23.18	Reserved.....	102
23.19	Reserved.....	102
23.20	Reserved.....	102
23.21	Reserved.....	102
23.22	Reserved.....	102
23.23	Reserved.....	102
23.24	Reserved.....	102
23.25	Image-Enabled POD .....	103
23.26	Source Document Bad .....	103
23.27	Date Usability .....	103
23.28	Payee Usability .....	103
23.29	Convenience Amount Usability.....	104
23.30	Amount in Words (Legal Amount) Usability .....	104
23.31	Signature Usability .....	104
23.32	Payor Name and Address Usability .....	105
23.33	MICR Line Usability .....	105
23.34	Memo Line Usability.....	105
23.35	Payor Bank Name And Address Usability.....	106
23.36	Payee Endorsement Usability .....	106
23.37	Bank of First Deposit Endorsement Usability .....	106
23.38	Transit Endorsement Usability.....	106
23.39	Reserved.....	107
23.40	Reserved.....	107
23.41	Reserved.....	107
23.42	Reserved.....	107
23.43	Reserved.....	107
23.44	Reserved.....	107
23.45	User Field .....	107
23.46	Reserved.....	108
24	Bundle Control Record (Type 70) .....	109
24.1	Record Type .....	109
24.2	Items Within Bundle Count.....	109
24.3	Bundle Total Amount .....	110

24.4	MICR Valid Total Amount.....	110
24.5	Images Within Bundle Count.....	110
24.6	User Field .....	110
24.7	Reserved.....	110
25	Box Summary Record (Type 75) .....	112
25.1	Record Type .....	112
25.2	Destination Routing Number.....	112
25.3	Box Sequence Number .....	113
25.4	Box Bundle Count .....	113
25.5	Box Number ID.....	113
25.6	Box Total Amount.....	113
25.7	Reserved.....	113
26	Routing Number Summary Record (Type 85).....	114
26.1	Record Type .....	114
26.2	Routing Number Within Cash Letter.....	114
26.3	Routing Number Total Amount .....	115
26.4	Routing Number Item Count.....	115
26.5	User Field .....	115
26.6	Reserved.....	115
27	Cash Letter Control Record (Type 90).....	116
27.1	Record Type .....	116
27.2	Bundle Count .....	116
27.3	Items Within Cash Letter Count .....	116
27.4	Cash Letter Total Amount.....	117
27.5	Images Within Cash Letter Count .....	117
27.6	ECE Institution Name .....	117
27.7	Settlement Date.....	117
27.8	Reserved.....	118
28	File Control Record (Type 99) .....	119
28.1	Record Type .....	119
28.2	Cash Letter Count.....	119
28.3	Total Record Count .....	120
28.4	Total Item Count .....	120
28.5	File Total Amount .....	120
28.6	Immediate Origin Contact Name .....	120
28.7	Immediate Origin Contact Phone Number .....	120
28.8	Reserved.....	121
Annex A (Normative)	Standard On-Ups Field Format.....	122
A.1	ANS X9.100-160-1 Definition of the On-Ups field .....	122
A.2	Standard On-Ups Field Format.....	122
Annex B	.....	122
B.1	General Comments.....	123
B.2	Customer / Monetary Returns .....	123
B.3	Administrative Returns .....	124
Annex C (Normative)	Relationship of Cash Letter Record Type Indicator and Cash Letter Documentation Type Indicator .....	125
C.1	General Comments.....	125
C.2	Definitions from Cash Letter Header Record (Type 10).....	125
Annex D (Normative)	Image Record Definition for Image View Not Present.....	128
D.1	Image Record Field Values for Image View Not Present .....	128

D.1.1	Image View Detail Record (Type 50) Field Values for Image View Not Present Condition .....	128
E.1.2	Image View Data Record (Type 52) Field Values for Image View Not Present condition.....	129
<b>Annex E (Normative) Variable Length Record File .....</b>		<b>131</b>
E.1	Methodology for Variable Length Record.....	131
E.2	Samples of Variable Length Record .....	132
E.2.1	File Header Record (Type 01) – 80 (x'50) Characters.....	132
E.2.2	Image View Data Record (Type 52) – 32,000 (x'7D00) Characters .....	133
<b>Annex F (Informative) Image Record Definitions .....</b>		<b>134</b>
F.1	Image View Data Record (Type 52).....	134
F.1.1	Item Reference Key .....	134
F.1.2	Clipping Information.....	134
F.2	Image View Analysis Record (Type 54).....	134
F.2.1	Quality.....	134
F.2.2	Usability.....	134
F.2.3	Image Analysis User Information.....	135
<b>Annex G (Informative) Check Digit Calculation.....</b>		<b>136</b>
G.1	General .....	136
G.2	Calculation .....	136
<b>Annex H (Informative) Examples of Electronic Exchange File Structures .....</b>		<b>137</b>
H.1	Examples .....	137
H.1.1	Example 1 .....	137
H.1.2	Example 2 .....	140
H.1.3	Example 3 .....	147
H.1.4	Example 4 .....	150
H.1.5	Example 5 .....	156
<b>Annex I (Informative) Image Keys.....</b>		<b>157</b>
I.1	Use of Image Keys.....	157
I.2	Item Reference Key .....	157
I.3	Image Reference Key .....	157
I.4	Image Archive Sequence Number .....	158
I.5	Image Archive Locator .....	158
<b>Annex J (Informative) Endorsements.....</b>		<b>159</b>
J.1	General .....	159
J.2	Use of the Standard for Endorsements.....	159
J.3	Suggested Implementation Considerations .....	160
J.4	X9.100-187 and X9.100-140 Interaction of Endorsements .....	161

## **Figures**

Figure 1 – X9.100-187 Forward and Return Cash Letter Hierarchy Diagram.....	10
Figure 1a – X9.100-187 Forward Presentment Bundle Hierarchy Diagram.....	11
Figure 1b – X9.100-187 Return Bundle Hierarchy Diagram.....	12
Figure 2 - X9.100-187 Cash Letter With No Detail Hierarchy Diagram.....	13

## Introduction

The purpose of this standard is to provide the financial industry with a format necessary to perform electronic check exchange (ECE), with or without images. The format supports forward presentment, posting, return notification, and return requests, as well as existing customer information reporting products. The standard also supports multiple check clearing alternatives, e.g., bank-to-bank, bank-to-switch.

This standard has been modified from its original content to allow check images to be linked to and transmitted along with the (financial) posting data. The standard utilizes a cash letter structure to support the exchange of posting data only, posting data and check images, or posting data followed by an additional data and image file. This file is comprised entirely of variable length records.

The standard accommodates and works with existing data formats used to transmit check-related data, and to provide flexibility in accommodating future developments in check processing and check product offerings. The standard helps enable financial institutions to cut processing costs and fraud losses by reducing the number of times a paper item must be handled, and by shortening the forward presentment and return cycle time frames.

There are ten annexes in this standard. Annexes A, B, C, D and E are normative and are considered part of this standard; Annexes F, G, H, I and J are informative and are not considered part of this standard. Users of the standard are warned against using clauses of the standard, especially the record layouts, out of context. Clauses 1.0 through 6.8, and the normative annexes, provide information essential to the successful use of the record layouts and to the successful implementation of the standard itself.

Suggestions for the improvement or revision of this draft standard are welcome. They should be sent to the Accredited Standards Committee X9, Inc., PO Box 4035, Annapolis, Maryland 21403 USA.

Jim Shaffer, X9 Chairman, ACI Worldwide

Vincent DeSantis, X9 Vice-Chairman, The Clearing House

Cynthia Fuller, X9 Executive Director (Secretariat)

### **Organization**

ACI Worldwide  
American Bankers Association  
American Express Company  
American Financial Services Association  
Bank of America  
Certicom Corporation  
Citigroup, Inc.  
CUSIP Service Bureau  
Deluxe Corporation  
Diebold, Inc.  
Discover Financial Services  
Federal Reserve Bank  
First Data Corporation  
Fiserv  
FSTC, Financial Services Technology Consortium  
Harland Clarke

### **Representative**

Jim Shaffer  
C. Diane Poole  
Mark Merkow  
Mark Zalewski  
Daniel Welch  
Daniel Brown  
Gary Word  
James Taylor  
John FitzPatrick  
Bruce Chapa  
Katie Howser  
Dexter Holt  
Rick Van Luvender  
Skip Smith  
Daniel Schutzer  
John McCleary

Hewlett Packard  
Hypercom  
IBM Corporation  
Ingenico  
Intuit, Inc.  
J.P. Morgan Chase & Co  
KPMG LLP  
MagTek, Inc  
MasterCard International  
NACHA The Electronic Payments Association  
National Association of Convenience Stores  
National Security Agency  
NCR Corporation  
Proofspace  
SWIFT/Pan Americas  
The Clearing House  
U.S. Bank  
University Bank  
VECTORsgj  
VeriFone, Inc.  
VISA  
Wachovia Bank  
Wells Fargo Bank

Larry Hines  
Gary Zempich  
Todd Arnold  
John Spence  
Jana Hocker  
Robert Blair  
Mark Lundin  
Carlos Morales  
William Poletti  
Nancy Grant  
Michael Davis  
Paul Timmel  
Steve Stevens  
Paul Doyle  
James Wills  
Vincent DeSantis  
Marc Morrison  
Stephen Ranzini  
Ron Schultz  
Brad McGuinness  
Richard Sweeney  
Raymond Gatland  
Ruven Schwartz

**The X9AB subcommittee on Check Processing had the following members:**

Mr. Dexter Holt, Chairman, Federal Reserve Bank  
Mr. Daniel Welch, Vice Chairman, Bank of America  
Ms. Nancy Grant, Vice Chairman, NACHA  
Mr. Robert Blair, Vice Chairman, JPMorgan Chase

**Organization**

ACI Worldwide  
ACI Worldwide  
ACI Worldwide  
ACOM Solutions  
ACS, Government Solutions  
All My Papers  
All My Papers  
All My Papers  
American Bankers Association  
American Express Company  
American Express Company  
American Financial Services Association  
Anicheva  
BancTec, Inc.  
Boise Paper Solutions  
Certicom Corporation  
Check Site, Inc.  
Check Site, Inc.  
Check Site, Inc.

**Representative**

Dan Archer  
Cindy Rink  
Jim Shaffer  
Gregory T. Church  
Pat Solitro  
Ray Higgins  
Larry Krummel  
Brett Nelson  
C. Diane Poole  
Richard Rodriguez  
Vicky Sammons  
Mark Zalewski  
Juan Celorio  
Peter Caporal  
Jim Moore  
Daniel Brown  
Neil Godfrey  
Blaugrund John  
Mark Springer

CheckFree	Don Harman
Citigroup, Inc.	Karla McKenna
Citigroup, Inc.	Susan Rhodes
Citigroup, Inc.	Andrew Thomas
Citigroup, Inc.	Gary Word
ClearWave Electronics	Mark Ross
Compass Bank	Jan Cole
Compass Bank	Kirk Maze
Davis & Henderson	Dragan Calusic
Davis & Henderson	Yves Denomme
Deluxe Corporation	John FitzPatrick
Deluxe Corporation	Ralph Stolp
Deluxe Corporation	Mike Valiquet
Diebold, Inc.	Bruce Chapa
Diebold, Inc.	Laura Drozda
Discover Financial Services	Peggy Burggraf
Discover Financial Services	Katie Howser
Discover Financial Services	Julie Shaw
ECCHO	Ellen Heffner
ECCHO	Phyllis Meyerson
First Data Corporation	Pam Carter
First Data Corporation	Elizabeth Lynn
First Data Corporation	Tina McGowan
Fiserv	Mary Bland
Fiserv	Keay Edwards
Fiserv	Lori Hood
Fiserv	Ron Jacobs
Fiserv	Dan Otten
Fiserv	Joe Pachunka
Fiserv	Skip Smith
Fiserv	Chad Speiser
Fiserv	Senthil Thiagarajan
FSTC, Financial Services Technology Consortium	Frank Jaffe
FSTC, Financial Services Technology Consortium	Christine Nautiyal
FSTC, Financial Services Technology Consortium	Daniel Schutzer
FSTC, Financial Services Technology Consortium	Colin Strutt
Harland Clarke	John McCleary
Harland Clarke	Valerie Meddleton
Huntington Bank	Michelle Dunkle
Huntington Bank	Jim Posani
Hypercom	Mohammed Arif
Hypercom	Scott Spiker
Hypercom	Gary Zempich
IBM Corporation	Rod Moon
IFSA	Katja Lehr
IFSA	Dan Taylor
ImageScan	Hanna Jabbour
ImageScan	Lucie Johnson
Ingenico	Alexandre Hellequin

Ingenico	John Spence
Intuit, Inc.	Jana Hocker
iStream Imaging/Bank of Kenney	Mike McGuire
J.P. Morgan Chase & Co	Dick Angerosa
J.P. Morgan Chase & Co	Roy Decicco
J.P. Morgan Chase & Co	Edward Koslow
J.P. Morgan Chase & Co	Jackie Pagan
J.P. Morgan Chase & Co	Paul Simon
J.P. Morgan Chase & Co	Bonnie Wright
J.P. Morgan Chase & Co	Jim Wright
Jack Henry and Associates	Jerry Garrett
Jack Henry and Associates	Chuck Hendrickson
MagTek, Inc.	Jeff Duncan
MagTek, Inc.	Carlos Morales
Maximus, Inc.	Jon Haught
Maximus, Inc.	Peter Relich
Micro Solutions Enterprises - MSE	Carl Grant
NACHA The Electronic Payments Association	Priscilla Holland
National Association of Convenience Stores	Michael Davis
National Association of Convenience Stores	Alan Thiemann
National Security Agency	Paul Timmel
Navy Federal Credit Union	Kim Engman
Navy Federal Credit Union	Joan Wood
NCR Corporation	Stewart Kelland
NCR Corporation	David Norris
NCR Corporation	Ron Rogers
NCR Corporation	Steve Stevens
NetDeposit, Inc.	Danne Buchanan
NetDeposit, Inc.	William Wong
Oce North America, Inc	Tony Ribeiro
Orbograph	Uriel BenDavid
Orbograph	Joe Gregory
Orbograph	Dave Kliewer
Paychex Inc	Carl Tinch
Piracle	Jared Kesler
Piracle	Lynn Shimada
Proofspace	Paul Doyle
RDM Corporation	Bill Faulkner
RDM Corporation	Tom Kettell
RDM Corporation	Karin McNabb
Relyco Sales Inc	Rick Gagnon
Relyco Sales Inc	Michael Steinberg
Reynolds and Reynolds Co.	Carolyn Brackman
Reynolds and Reynolds Co.	Mark Hoenie
Reynolds and Reynolds Co.	Steve Kuhn
Rosetta Technologies	Jim Maher
Silver Bullet Technology, Inc.	Bryan Clark
Silver Bullet Technology, Inc.	Matthew Dunne
Source Technologies	Wally Burlingham

Source Technologies	Roger Owens
Standard Register Company	Melissa Barnes
Standard Register Company	Russell Hill
SWIFT/Pan Americas	James Wills
The Clearing House	Vincent DeSantis
The Clearing House	Henry Farrar
The Clearing House	Susan Long
The National Clearing House	Tom D'Aquisto
The National Clearing House	Frank Jaffe
The National Clearing House	Karroll Searcy
Treasurer of State of Ohio	Michael Sawczyn
Troy Group, Inc.	Michael Riley
U.S. Bank	Tim Dawe
U.S. Bank	Scott LaPlante
U.S. Bank	Nicole Mettler
U.S. Bank	Marc Morrison
U.S. Bank	Christopher Stickney
Unisys Corporation	David J. Concannon
Unisys Corporation	Navnit Shah
University Bank	Stephen Ranzini
University Bank	Michael Talley
VECTORsgi	Jerry Bowman
VECTORsgi	Jim Fancher
VECTORsgi	Ron Schultz
VeriFone, Inc.	Allison Holland
VeriFone, Inc.	Dan Kannady
VeriFone, Inc.	Brad McGuinness
VeriFone, Inc.	Brenda Watlington
Vicor, Inc.	Rick Smith
VISA	John Aafedt
VISA	Philippe De Smedt
VISA	Brian Hamilton
VISA	Richard Sweeney
Wachovia Bank	Andrew Garner
Wachovia Bank	Raymond Gatland
Wachovia Bank	Chris Klapheke
Wachovia Bank	Scott Meloun
Wachovia Bank	Keith Ross
Wachovia Bank	Laurie Yeager
Wells Fargo Bank	Ann Kirk
Wells Fargo Bank	Chuck Perry
Wells Fargo Bank	Ruven Schwartz
Wells Fargo Bank	Mark Tiggas
WorkflowOne	Kurt Schnabel
Viewpointe	Richard Luchak
VISA	Joe Bugajski
VISA	Philippe De Smedt
VISA	Brian Hamilton
VISA	Richard Sweeney

Wachovia Bank	Andrew Garner
Wachovia Bank	Raymond Gatland
Wachovia Bank	Chris Klapheke
Wachovia Bank	Scott Meloun
Wachovia Bank	Keith Ross
Wachovia Bank	Laurie Yeager
Wells Fargo Bank	Ann Kirk
Wells Fargo Bank	Chuck Perry
Wells Fargo Bank	Ruven Schwartz
Wells Fargo Bank	Mark Tiggas
WorkflowOne	Kurt Schnabel
Xerox Corporation	Frank Bov
Xerox Corporation	Susan Siani

Under ASC X9 procedures, a working group may be established to address specific segments of work under the ASC X9 Committee or one of its subcommittees. A working group exists only to develop standard(s) or guideline(s) in a specific area and is then disbanded. The individual experts are listed with their affiliated organizations. However, this does not imply that the organization has approved the content of the standard or guideline.

(Note: Company names of non-member participants listed only if release form was signed.)

Working Group X9B6 on Electronic Exchange of Check and Image Data – US Exchange which developed this standard, had the following participants:

Ann Kirk, Co-Chair, Wells Fargo  
Jacqueline Pagán , Co-Chair, JPMorgan Chase  
Darin Contini, Project Editor, Federal Reserve Bank

AllMyPapers	Ray Higgins
AllMyPapers	Larry Krummel
Bank of America	Dan Welch
CheckFree	Don Harman
ECCHO	Phyllis Meyerson
Endpoint Exchange	Steve Gibson-Saxty
Federal Reserve Bank	Darin Contini
Federal Reserve Bank	Mark Kielman
Federal Reserve	Dexter Holt
JP Morgan Chase & Co	Jacqueline Pagán
JP Morgan Chase & Co	Dieter Scriven
JP Morgan Chase & Co	Shirley Caragol
NACHA	Nancy Grant
NetDeposit	William Wong
NCR	Wayne Doran
SVPCO	Susan Goold
SVPCO	Steve Jackson
US Bank	Christopher Stickney
Wachovia	Andrew Garner
Viewpointe	Richard Luchak
Wells Fargo	Ann Kirk

# American National Standard for Financial Services – Specifications for Electronic Exchange of Check and Image Data – Domestic

## 1 Scope, Purpose, and Application

### 1.1 Scope

Since the enactment of Check 21, there has been unprecedented adoption of image exchange. This standard replaces the use of DSTU X9.37 and establishes the basis for U.S. check image exchange involving settlement between two financial institutions. ANS X9.100-180 has been adopted for Canadian internal country exchange. It is only used in the U.S. for specialized applications and is not used for U.S. financial exchange.

This standard incorporates fixes and clarifications identified in various industry companion documents associated with DSTU X9.37. It also establishes requirements and limitations that are compatible with current industry practice. However, this standard maintains flexibility in order to accommodate the needs of different institutions and exchange networks. It does not have the extent of flexibility contained in ANS X9.100-180 and is not intended to cover all types of image exchange.

Users of this standard should be aware that most financial exchanges utilize a “companion document” that defines the specific requirements and implementation rules for exchange within a particular network or institution agreement. The companion document should reference the specific edition of this standard that applies with the specific version of the companion document in use.

This standard, including the normative annexes, establishes the file sequences, record types, and field formats to be used for the electronic exchange of check MICR line, associated check processing data and check images in the form of cash letters.

This standard does not address operational, implementation, or settlement issues. These issues may include, but are not limited to, a choice of: data and image compression, encryption, and transmission specifications and data representation. The informative annexes attached to this standard provide information that may prove useful to those planning to implement the standard.

### 1.2 Presentment Disclaimer

“Presentment” is used throughout this standard in a colloquial sense only to refer to or to describe an operational process; the movement of checks and check-related data from a collecting bank to a paying bank.

In no instance shall use of the term “presentment” in the standard be construed as a legal definition of presentment, or as a description of when presentment as a legal event occurs. Nor does its use in any way define the legal rights and responsibilities of parties participating in the check clearing process, or parties otherwise interested in a check.