

**TR 33-2006**

**ASC X9 Technical Report —  
Check Image Quality Assurance —  
Standards and Processes**



Accredited Standards Committee X9, Incorporated  
Financial Industry Standards

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<b>Contents</b>	<b>Page</b>
Foreword .....	vi
Introduction.....	vii
<b>1 Scope .....</b>	<b>1</b>
<b>1.1 Purpose .....</b>	<b>1</b>
<b>1.2 Problem statement .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>2</b>
<b>3 Terms and definitions .....</b>	<b>2</b>
<b>4 Conceptual framework for assessing the quality of an image .....</b>	<b>11</b>
<b>4.1 General .....</b>	<b>11</b>
<b>4.2 Image file wrapper characteristics .....</b>	<b>11</b>
<b>4.3 Image defects.....</b>	<b>12</b>
<b>4.4 Image usability.....</b>	<b>12</b>
<b>4.5 Relationship between image defects and image usability.....</b>	<b>13</b>
<b>5 Automated Image Quality Assessment tools .....</b>	<b>15</b>
<b>5.1 Introduction.....</b>	<b>15</b>
<b>5.1.1 General .....</b>	<b>15</b>
<b>5.1.2 Analysis and assessment.....</b>	<b>15</b>
<b>5.1.3 Overall image quality assurance.....</b>	<b>15</b>
<b>5.2 Image and file format characteristics .....</b>	<b>16</b>
<b>5.3 Automated Image Defect Assessment .....</b>	<b>17</b>
<b>5.3.1 Introduction.....</b>	<b>17</b>
<b>5.3.2 IDA reference model.....</b>	<b>17</b>
<b>5.3.3 Image defect analysis .....</b>	<b>18</b>
<b>5.3.4 Parameters and thresholds .....</b>	<b>19</b>
<b>5.3.5 Computing image defect flags .....</b>	<b>19</b>
<b>5.4 Image Usability Assessment .....</b>	<b>20</b>
<b>5.4.1 Introduction.....</b>	<b>20</b>
<b>5.4.2 IUA reference model.....</b>	<b>20</b>
<b>5.4.3 Image usability analysis .....</b>	<b>21</b>
<b>5.4.4 Image usability parameters and thresholds .....</b>	<b>21</b>
<b>5.4.5 Image Usability Assessment.....</b>	<b>22</b>
<b>5.4.6 Usability scoring.....</b>	<b>22</b>
<b>5.5 Comparison of IDA and IUA .....</b>	<b>23</b>
<b>5.5.1 Overview .....</b>	<b>23</b>
<b>5.5.2 Image quality tests and image quality suspects .....</b>	<b>24</b>
<b>5.6 Integration of image assessment tools with X9 standards.....</b>	<b>25</b>
<b>6 Environmental considerations .....</b>	<b>26</b>
<b>6.1 General .....</b>	<b>26</b>
<b>6.2 Legal and regulatory environment .....</b>	<b>26</b>
<b>6.3 Source documents and associated quality issues .....</b>	<b>27</b>
<b>6.3.1 General .....</b>	<b>27</b>
<b>6.3.2 Source document creation .....</b>	<b>27</b>
<b>6.3.3 Source document completion .....</b>	<b>28</b>

**TR 33-2006**

6.3.4	Source document processing .....	29
6.3.5	Security features on source documents .....	29
6.3.6	Carrier documents .....	29
6.3.7	Image replacement document (IRD) .....	29
6.4	The image capture process and associated quality issues .....	30
6.4.1	General.....	30
6.4.2	Camera output variability.....	30
6.4.3	Calibration .....	31
6.4.4	Image resolution and associated quality issues .....	31
6.5	Other general processes and associated quality issues .....	32
6.5.1	General.....	32
6.5.2	Image processing system-created defects .....	32
6.5.3	Image system performance degradations .....	32
6.6	Technical standards .....	32
6.7	Industry initiatives .....	33
6.8	Evolving solution marketplace.....	33
7	Image business practices .....	33
7.1	General.....	33
7.2	Implementation overview .....	33
7.3	IQA tools and human assessment.....	34
7.4	Implementation of IQA processes .....	35
7.5	Validation of check image and format characteristics .....	35
7.5.1	Introduction .....	35
7.5.2	Editing examples .....	36
7.6	Image Defect Assessment .....	36
7.7	Image Usability Assessment .....	37
7.7.1	Key data fields.....	37
7.7.2	Other data fields .....	37
7.8	Conveying assessment results .....	37
7.8.1	Introduction.....	37
7.8.2	Considerations related to conveying Image Defect Assessment results.....	38
7.8.3	Considerations related to conveying IUA results .....	38
7.9	Implementation of X9B standards .....	38
7.10	IQA systems and clearing.....	38
7.10.1	General.....	38
7.10.2	Sources of problems .....	39
7.10.3	Responses to an unusable image.....	39
7.11	Clearing participants and IQA systems.....	40
7.11.1	General.....	40
7.11.2	The truncating bank and IQA systems .....	40
7.11.3	The paying bank and IQA systems .....	41
7.11.4	Image exchange and IQA systems .....	41
8	Open issues.....	41
8.1	Introduction .....	41
8.2	Defect metrics .....	41
8.3	The use of “true” image usability metrics .....	42
8.4	Source document issues .....	42
8.5	Conveying the results of image defect and usability assessments in image exchange .....	43
Annex A (Informative)	Detailed image capture process and IQA systems .....	45
A.1	Introduction .....	45
A.2	Document image capture devices.....	45
A.2.1	General.....	45
A.2.2	Reader/Sorters .....	45

A.2.3	Flatbed scanners .....	46
A.3	Image capture processes .....	46
A.3.1	General .....	46
A.3.2	Image camera subsystem .....	47
A.3.3	Digital image preprocessing .....	52
A.3.4	Digital image compression.....	56
A.3.5	Image system software .....	58
A.4	Post image capture processes.....	60
A.4.1	General .....	60
A.4.2	Image display .....	60
A.4.3	Image printing.....	60
A.4.4	Trans-coding the data .....	60
A.4.5	Image security features .....	62
A.4.6	Other post capture image manipulation .....	62

**Figures**

Figure 1	— Image quality: influencing factors .....	11
Figure 2	— Image defect and image usability relationships .....	14
Figure 3	— Image Quality Assessment processes .....	16
Figure 4	— Automated IDA reference model .....	18
Figure 5	— Automated IUA reference model .....	21
Figure 6	— Overview of image capture process and typical quality issues .....	30
Figure 7	— Image quality assurance pyramid .....	34
Figure 8	— Implementation of automated assessment processes .....	35

**Tables**

Table 1	— Data field usability scale.....	22
Table 2	— IDA and IUA reference model comparison .....	24
Table 3	— Image quality test failures and related sources .....	40

## Foreword

Publication of this *Technical Report* that has been registered with ANSI has been approved by the Accredited Standards Committee X9, Incorporated, 1212 West Street, Suite 200, Annapolis, MD 21401. This document is registered as a Technical Report according to the "Procedures for the Registration of Technical Reports with ANSI." This document is not an American National Standard and the material contained herein is not normative in nature. Comments on the content of this document should be sent to: Attn: Executive Director, Accredited Standards Committee X9, Inc., 1212 West Street, Suite 200, Annapolis, MD 21401.

Under Check 21, image capture and processing provides an important role in supporting the creation of substitute checks and in supporting the evolution to electronic exchange of check information among institutions and their customers. This *Technical Report* provides a methodology to think about the issue of what constitutes image quality assurance and the tools available for implementing an assurance process. It reflects the learning process through which the industry is progressing and will be updated periodically to reflect the most recent developments.

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## Introduction

This *Technical Report* conveys the state of the art in the industry's thinking about image quality from the perspective of developing common infrastructure and business practices. It is intended for bank managers, technical support personnel and vendors to the industry who are involved in the provision of image-supported check electrification.

Assuring and maintaining image quality is considered a critical concern for the financial industry and consumers, and is particularly important towards developing the confidence within the industry to proceed with the implementation of image-supported check electrification.

The conceptual framework presented (Clause 4) and the application of the image defect and usability tools to an image quality assurance process (Clause 5) will provide a thorough understanding of the tools and processes available.

The reality of the situation in 2006 is that check processing practices to a great extent reflect the legacy of the past, and this will take time to change. Understanding the operational considerations in implementing an Image Quality Assurance ( IQA) practice in the next year, or so, will benefit from setting realistic expectations and working within the industry to address common problems through standards development, standards adoption, and the development of common business practices for dealing with images that may be unusable. Clause 6 on operational considerations reflects a decade of back room image capture and processing experience which is now being supplanted by the evolution of image capture in more distributed locations, and most noteworthy, in locations not being managed by the customers' financial institution. At this time, there is no common practice for setting up capture environments and industry-level discussion on the issues of calibration and certification of capture processes are just emerging.

Clause 7 on image business practices begins to address image exchange under Check 21. Inter-bank practices are gradually evolving among groups of exchange partners, but, in our opinion, do not reflect an industry-wide practice or assure interoperability in the sense of having a common set of definitions and procedures in place to assure that we all mean the same thing when we declare an exchanged image is usable or unusable.

The industry has learned a lot about the merits and challenges associated with the use of image quality assurance tools. Clause 8 provides a set of issues which the Work Group feels will need to be addressed before the industry can establish a cohesive and coordinated set of image quality assurance business practices.

Annex A is included as a tutorial on image capture and image processing techniques. It is included as a reference for those who wish to understand how the image process works "under the covers". We believe that Annex A can serve as a readily available reference for technical managers at financial institutions who wish to confirm impressions or verify statements from others. This Annex was prepared by a collaborative effort of the solution providers involved in this initiative.

Because we are in a state of rapid change based upon lessons learned during these exchanges, we expect to update this report periodically with emphasis on refreshing the Clauses dealing with operations and exchange. By the next revision, we expect that the industry's business practices will have evolved to the point where there might be automated options to replace or augment human assessment processes for "suspect" images. We also anticipate that business practices for using defect and usability assessment tools will have significantly changed. Other Clauses will be updated as necessary to provide useful information to the industry.

**TR 33-2006**

This *Technical Report* was created by a cadre of motivated individuals from financial institutions, solution providers, third party service providers and rule making organizations. A few of these individuals took on an inordinate share of the burden: Robert Klein of Unisys for many contributions and particularly Annex A, Carmen Nordstrand of Solutran for shepherding the Terms and Definitions, Steve Gibson-Saxty for overseeing the development of Annex A, Jude LeClerc of the Canadian Payments Association who took the independent sectional contributions and provided the framework for the entire document and to the final publication editor, James Doran.

In publishing a report such as this it is easy for a group to lose sight of the complete picture or to presume a level of understanding among the readers that isn't there. To the extent that this document suffers from any blind spots, please offer your suggestions for improvements and additions to X9, Inc., to the attention of Cindy Fuller at the address provided in the Foreword so that they may be reflected in future updates.

NOTE The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights.

By publication of this *Technical Report*, no position is taken with respect to the validity of this claim or of any patent rights in connection therewith. The patent holder has, however, filed a statement of willingness to grant a license under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license. Details may be obtained from the standards developer.

Suggestions for the improvement or revision of this Standard are welcome. They should be sent to the X9 Committee Secretariat, Accredited Standards Committee X9, Inc., Financial Industry Standards, 1212 West Street, Suite 200, Annapolis, MD 21401 USA.

This *Technical Report* was processed and approved for publication by the Accredited Standards Committee on Financial Services, X9. Committee approval of the Standard does not necessarily imply that all the committee members voted for its approval.

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The X9B15 Image Quality group which developed this *Technical Report* had the following members:

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**TR 33-2006**

Wells Fargo Bank..... Ann Kirk

This *Technical Report* addresses the processes that use image tests that can be registered in the registry supporting X9.100-40-2006. It also addresses how image quality assessment information can be conveyed in an image exchange using DSTU X9.37-2003 or ANS X9.100-180-2006.

The *Technical Report* acknowledges the challenges created by source document characteristics. Some of the characteristics are addressed by X9.7-1999 and emphasize the importance of compliance with that standard. Other source document characteristics relate to things such as the importance of consistent placement of fields and their printing characteristics that go beyond the current X9.7-1999 specification. It is expected that these issues will be addressed by X9B11 in its process of reviewing X9.7-1999.

# ASC X9 Technical Report — Check Image Quality Assurance

## 1 Scope

### 1.1 Purpose

The purpose of this *Technical Report* is to provide a framework for assuring and assessing image quality to support the exchange of check images between financial institutions. It provides a detailed understanding of the problems and limitations associated with the image capture process, automated methods and systems that might be used to detect check quality problems (i.e., image defects and usability issues).

The following *Technical Report* provides:

- a) a glossary of terms related to image quality;
- b) a conceptual framework for image quality and its components;
- c) an understanding of how to perform image quality assessments; and
- d) a discussion around certain issues and considerations related to the operational reality of performing image quality assurance (IQA) assessments.

It is anticipated that this report will establish common terminology around check image quality so as to facilitate communication among operations and technical managers at financial institutions.

### 1.2 Problem statement

The enactment of the Check Clearing for the 21st Century Act (Check 21) has provided the financial services industry an opportunity to redefine the check clearing processes that have existed for decades. Check 21 makes an image-based substitute of the original check a legal equivalent provided it meets specific criteria, including conforming to the ANS X9.100-140-2004 standard developed by ASC X9.

Although financial institutions have been using image-based technology for years to support check truncation efforts, improve internal processes and provide enhanced services to customers, Check 21 only recently opened the door to leveraging imaging technology more broadly. This technology is now being used to improve the check clearing process through widespread image exchange supplemented by substitute check printing where image exchange is not possible. Since then financial institutions have begun exchanging images and shortening clearing timeframes by transmitting images and check data between processing sites, banks or intermediaries, and printing substitute checks for presentment to the paying entity if needed.

Prior to Check 21, clearing participants had frequently captured one or more digital or microfilm image(s) of each check as it passed through each of their systems. Because multiple parties imaged a check independently, a high number of redundant images were produced. This redundancy was helpful in cases where a party had a problem with their image and a source document was no longer available. On the other hand, as Check 21 is implemented, checks are imaged only once at the source and each clearing partner makes use of the same check