

## MEMORANDUM

**TO:** Public Comment File No. S7-27-03

**FROM:** Adam Glazer  
Office of Regulatory Policy  
Division of Investment Management (“IM”)

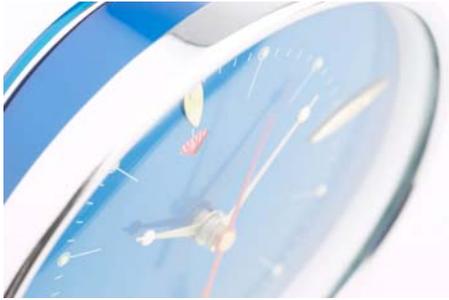
**DATE:** December 29, 2005

---

On December 1, 2005, representatives of the Information Assurance Consortium (“IAC”) met with staff members of the U.S. Securities and Exchange Commission to discuss issues relating to the Commission’s proposed rule amendments concerning the pricing of investment company shares in Investment Company Act Release No. 26288 (Dec. 11, 2003). The following Commission staff members attended the meeting: C. Hunter Jones, Assistant Director, IM; Penelope Saltzman, Branch Chief, IM; Adam Glazer, Attorney, IM; and John G. Niarhos, Senior Risk Advisor, Office of Risk Assessment. Representatives of Charles Schwab & Co., Inc., the Cyber Security Industry Alliance, The Depository Trust & Clearing Corporation, Fidelity Investments, the Investment Company Institute, Merrill Lynch, Pierce, Fenner & Smith Inc., the Securities Industry Association, and Visa listened to the IAC presentation by telephone.

The IAC representatives explained the latest standard for time stamping technology approved by the American National Standard Institute: American National Standard X9.95-2005. Their briefing is summarized in the attached outline, which they provided.

Attachment



# **American National Standard X9.95-2005 Trusted Time Stamps**

**Courtesy Briefing for the  
Division of Investment Management  
Securities and Exchange Commission**

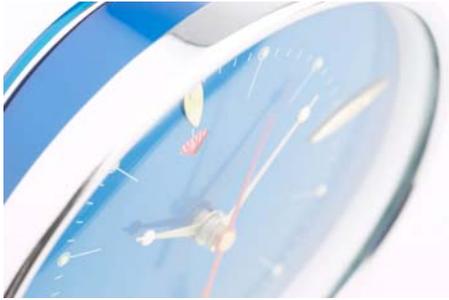
**December 1, 2005**

**By the Information Assurance Consortium**

<b>Paul Doyle</b>	<b>Co-Founder &amp; Vice President</b>	<b>Proofspace</b>
<b>Steven Teppler, Esq.</b>	<b>Co-Founder &amp; Secretary</b>	<b>TimeCertain</b>
<b>Tom Klaff</b>	<b>Member</b>	<b>Surety</b>

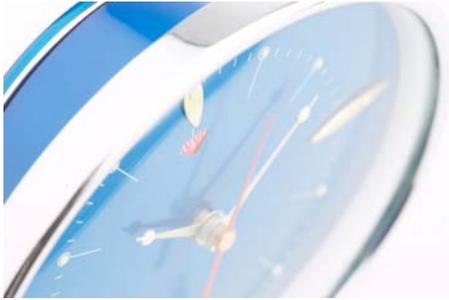
[www.infoassurance.org](http://www.infoassurance.org)





# X9.95 Briefing

- Agenda
  - Accredited Standards Committee X9 Background
  - Information Assurance Consortium Background
  - Affirm Understanding of SEC Rule 22c-1 Requirement
  - Deeper Examination Reveals Common Problem Context
  - Describe ANSI X9.95-2005 Standard
  - Describe Relevance of X9.95 Compliant Trusted Time Stamping to SEC Rule 22c-1
  - Recommendations
  - General Discussion, Q&A



# X9.95 Briefing

## Accredited Standards Committee X9

### History of ASC X9

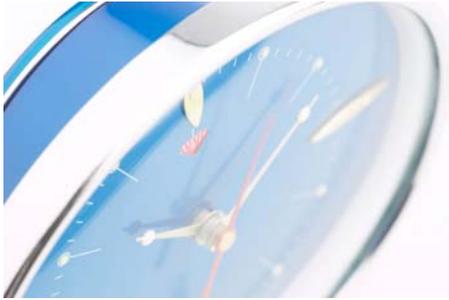
1974 - The American National Standards Institute (ANSI) approved the scope of activity for the X9 Standards Committee

1976 - X9 expanded membership to include vendors, insurance companies, associations, retailers, regulators, and others in the financial services area. Name was changed to X9, Financial Services.

1984 - ANSI first granted X9 official accreditation. Official name became as it remains today, Accredited Standards Committee (ASC) X9, Financial Services. Since this time, ASC X9 was incorporated under a 501 C6 non profit designation for associations.

ASC X9, Inc. operates under its own procedures as well as those prescribed and approved by the American National Standards Institute. Presently, ASC X9 operates 5 technical subcommittees and 20-to-30 technical working groups that develop financial industry technical standards and guidelines. ASC X9 is the USA Technical Advisory Group (TAG) to the International Technical Committee on Financial Services (TC68) under the International Organization for Standardization (ISO), of Geneva, Switzerland. In this role, X9 holds the USA vote on all ISO standards of TC 68 or its subcommittees SC2, SC4, SC6 and SC7.

ASC X9 standards are widely used and recognized. Many X9 standards are either cited or required by the Federal government for use in financial procedures and transactions. In addition, X9 standards are the basis for many international standards used in facilitating global commerce.



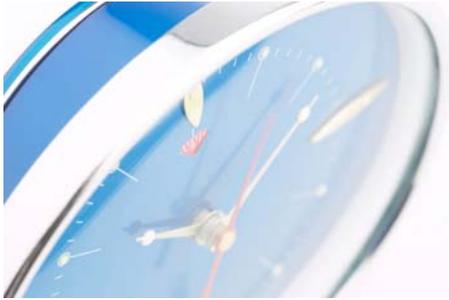
# X9.95 Briefing

## Accredited Standards Committee X9 Mission/Objectives of ASC X9

The Accredited Standards Committee X9 (ASC X9) has the mission to develop, establish, maintain, and promote standards for the Financial Services Industry in order to facilitate delivery of financial services and products.

### Membership List (partial)

American Bankers Association \*; American Express Company \*; American Financial Services Association \*; Bank of America \*; Booz Allen Hamilton; Canadian Payments Association; Capital One \*; Citigroup, Inc. \*; Comerica; Credit Suisse First Boston; **Depository Trust and Clearing Corporation**; Discover Financial Services \*; Ernst and Young; Exxon Mobil; **Federal Reserve Bank** \*; **Fidelity Investments**; First Data Corporation \*; Fiserv \*; Hewlett Packard \*; Hitachi America, Ltd.; HSBC; Huntington Bank; IBM Corporation \*; Identrus; **Innove**; Intuit, Inc. \*; J.P. Morgan Chase & Co \*; KPMG LLP \*; MasterCard International \*; **Merrill Lynch** ; Microsoft Corp; **National Institute of Standards and Technology**; **National Security Agency** \*; Navy Federal Credit Union; NACHA The Electronic Payments Association; NCR Corporation \*; NYCE Corporation; Pitney Bowes, Inc.; **Proofspace**; RSA Security, Inc.; **Securities Industry Association**; Sun Microsystems PS; **Surety, Inc.**; SWIFT/Pan Americas \*; Texas Department of Health; The Bank of New York; The Clearing House \*; **TimeCertain**; U.S. Bank \*; Unisys Corporation; VISA \*; Wachovia Bank \*; Washington Mutual Bank; Wells Fargo Bank \*; Xerox Corporation; \* = Board of Director members



# X9.95 Briefing

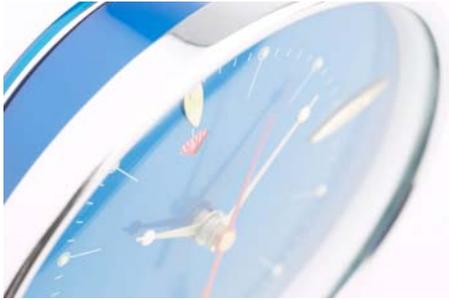
## Information Assurance Consortium (IAC)

### Our Mission

The Information Assurance Consortium is a member driven non-profit 501(c)(6) organization dedicated to education, promoting awareness, and facilitating the use of standards-based, trusted information architectures, products and services by the public and private sectors.

### History

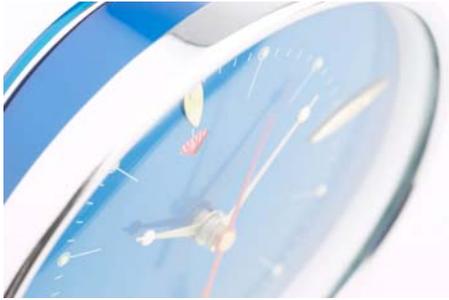
Established in 2005, the Information Assurance Consortium was founded as an out-growth of work done at the Accredited Standards Committee X9, specifically the X9F4 Security Protocols and Applications Sub-Committee. The founders, realizing the need for advocacy and outreach for newly developed standards created the organization to address this need.



# X9.95 Briefing

## Affirm Understanding of SEC Rule 22c-1 Requirements

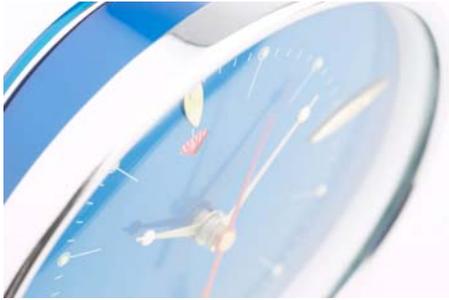
- While the practice of late trading is illegal today, it is difficult to detect and enforce.
- The perception of possible illegal late trading activity jeopardizes investor confidence in the mutual fund industry.
- The SEC has begun a process to amending Rule 22c-1 with the intent of instituting an enforceable 4 PM Eastern cut-off time for all investment instructions.
- Current industry practice is to allow plan administrators & intermediaries to accept investment instructions up to 4pm Eastern and then perform required processing which may take 4+ hours before submitting instructions in the form of an omnibus order to mutual funds or their designated transfer agents.
- The proposed 'Hard 4' has the potential to change the way Investment Instructions are processed (or timing), particularly for Defined Contribution Investors.



# X9.95 Briefing

## Affirm Understanding of SEC Rule 22c-1 Requirements (cont.)

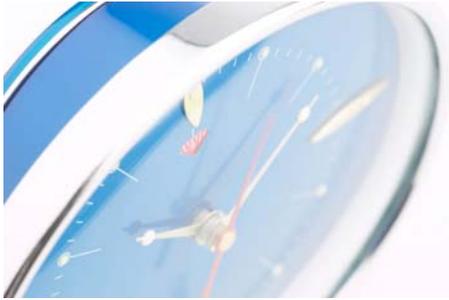
- Changes resulting from a 'Hard 4', it is argued by some, will prejudicially impact certain classes of investors, thereby creating systematic inequities among investor classes.
- Contemplated changes are intended to avoid any adverse impact on market efficacy, security and stability.
- Contemplated changes are intended to improve industry wide transparency, audit-ability, verifiability and enforcement.
- For any change to 22c-1, cost factors must be carefully considered.
- Technical components of any change to 22c-1 must be mature, currently commercially available, and support a competitive marketplace (avoid granting a monopoly)
- The SEC is exploring the possibility of 'Hard 4' with an Alternative which would be available to plan administrators and intermediaries



# X9.95 Briefing

## Deeper Examination Reveals Common Problem Context

- After-hours trading is essentially a form of time-based data manipulation to perform fraud (exploitation)
- Time-based data manipulation is a data integrity problem
- Data integrity should be fixed at the data-level versus at the custodial or contextual level
- Trusted Time Stamps (cryptographic date-time stamps) are a form of data-level control
- Trusted Time Stamps are independently verifiable and transportable with the data/record
- Partial list of similar, SEC enforced, data integrity topics
  - SEC Rule 17a-4
  - Sarbanes Oxley Act
  - Option Grants and Pricing (Mercury Interactive)



# X9.95 Briefing

## Definition of Data Integrity:

“Data integrity is the consistency in state, and unchanged condition of a set of data or a record, from a point in time where time can be proven” © Paul F. Doyle

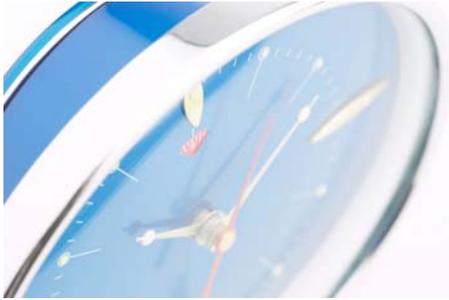
Trusted Time Stamps create a provable binding between ‘state’ and ‘time’ for a given set of data.



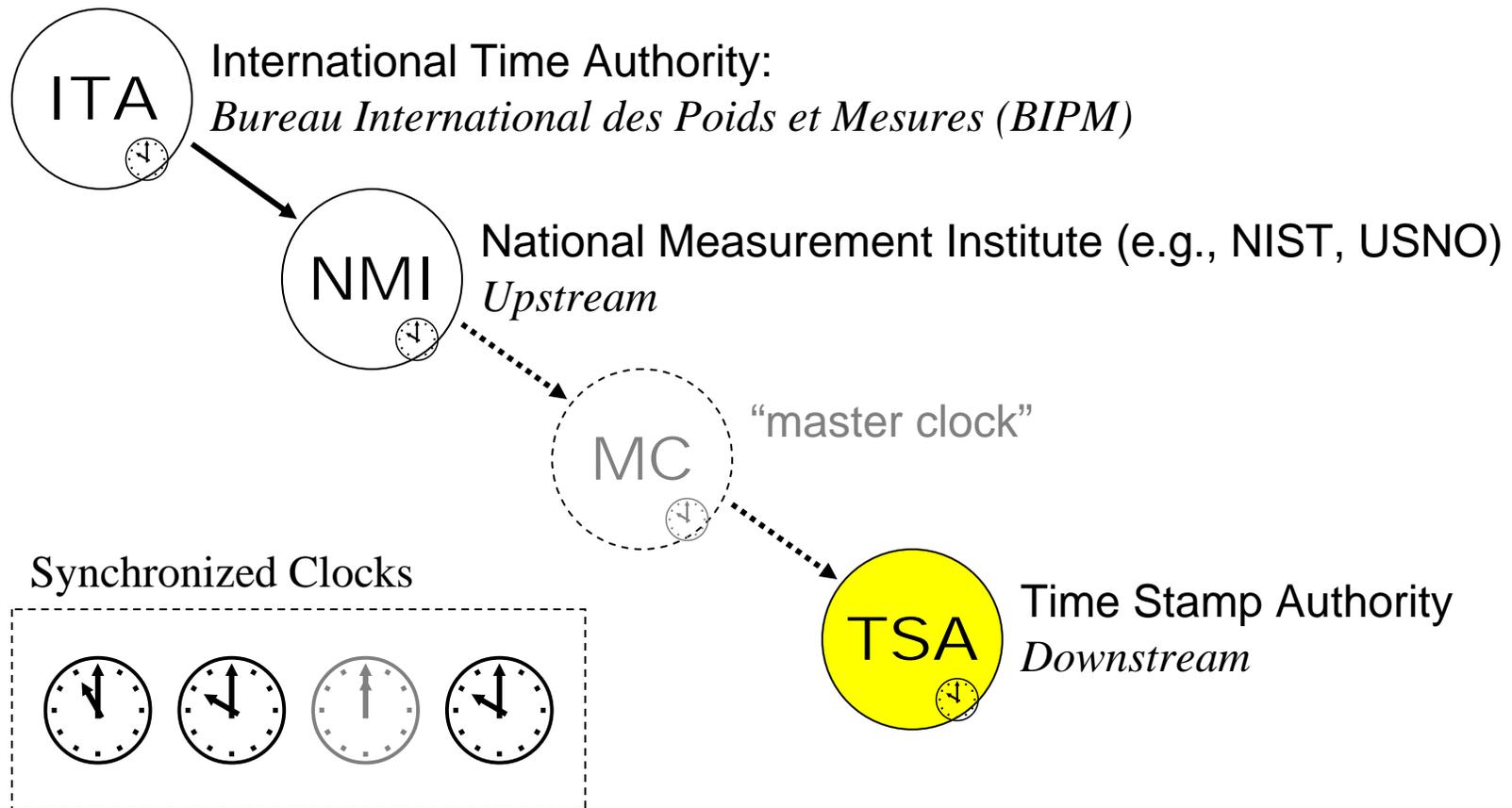
# X9.95 Trusted Time Stamp

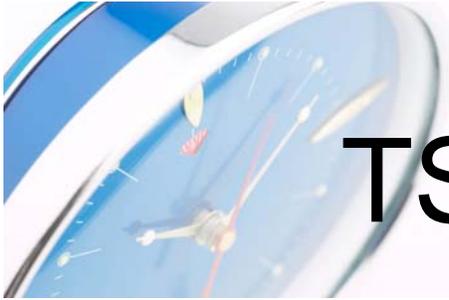
## **X9.95-2005 Trusted Time Stamp Management and Security**

- Describes the roles, responsibilities and requirements for the participants of trusted time stamps
  - time source entities (e.g. NIST)
  - time stamp authorities (TSA)
  - time stamp requestors
  - time stamp relying parties
- Specifies data objects, processing flows, error handling and message formats
- Defines technology methods for digital signature, message authentication code, linked token, and transient key
- Offers a comprehensive set of time stamp control objectives to validate a trusted time stamp system, suitable for use by a professional audit practitioner
- Provides sample time stamp policy and time stamp practice statements.

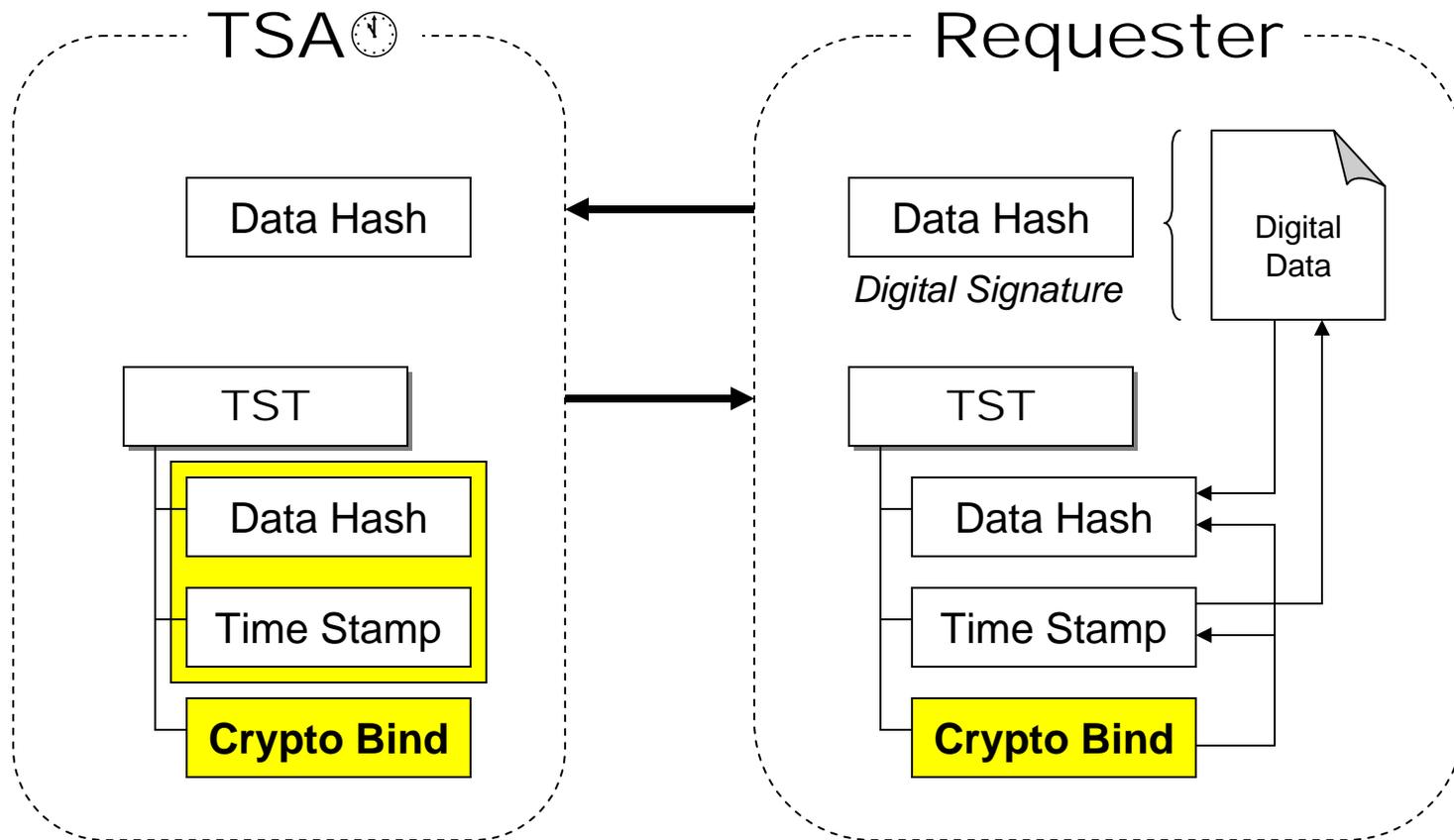


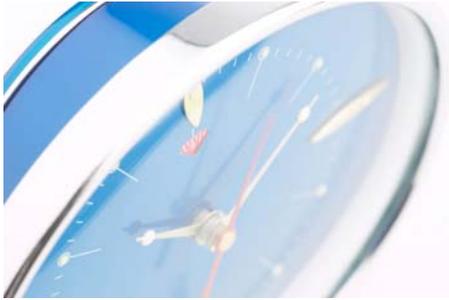
# What is Time?



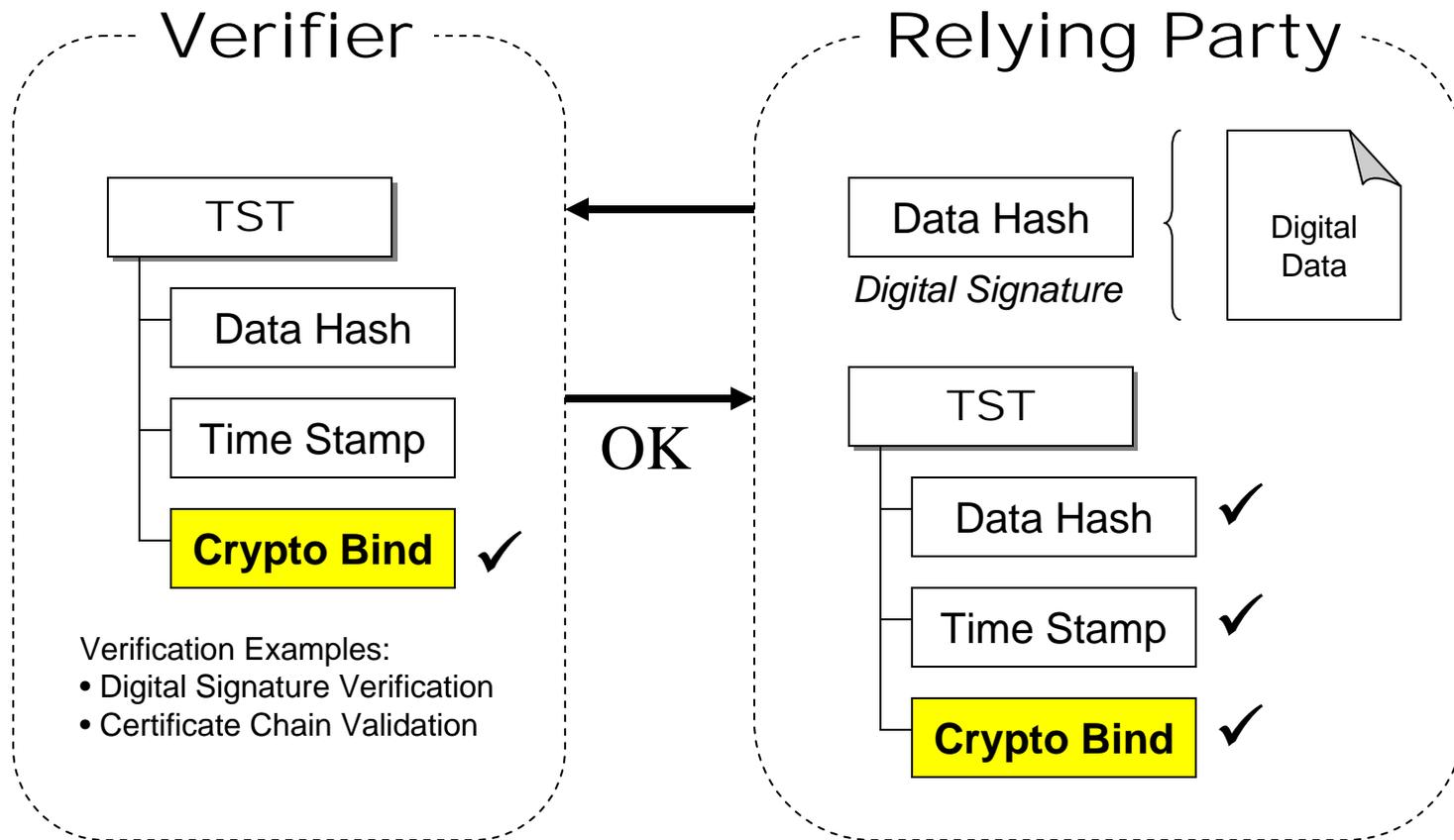


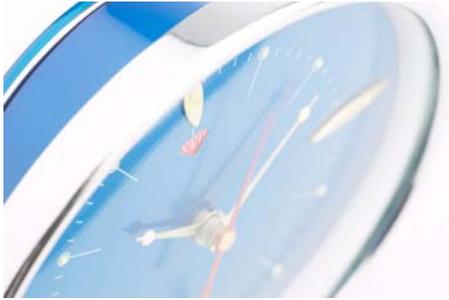
# TST Issuance by a TSA





# TST Verification

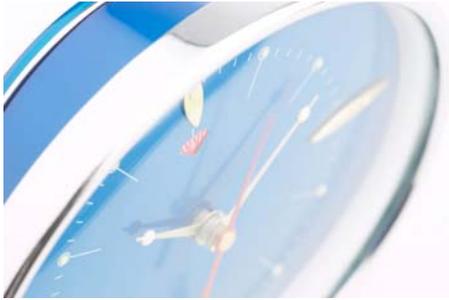




# X9.95 Briefing

## Multiple Methods

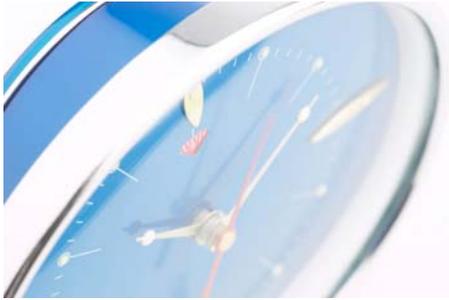
- Digital Signature
- Message Authentication Code
- Linked Tokens
- Linked Token + Digital Signature Combined
- Transient Key



# X9.95 Briefing

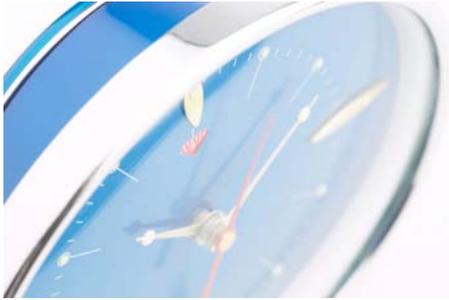
## Relevance of Trusted Time Stamps to Rule 22c-1

- Mature Technology
- Commercially Available
- Competitively Offered
- Cost Effective Solution
- Easily Incorporated into Existing Applications and Processes
- Avert Need to Change the Way Mutual Fund Industry Works
- Standards Based and Interoperable per American National Standard X9.95 – 2005 Trusted Time Stamp Management and Security
- Support Market Choice Through Single “Client API”
- Provides for External, Independent Third Party –OR– Secure, Internally Operated Cryptographic Time Stamping Systems
- Eliminates the Possibility for Insider Manipulation
- Allow for a Distributed ‘Hard 4’ Verifiable by all Interested Parties



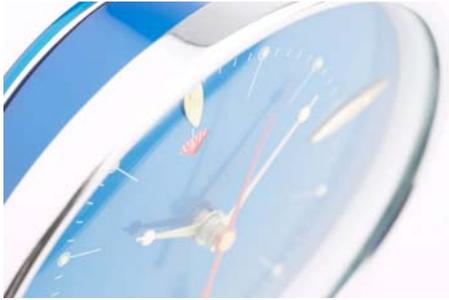
# X9.95 Briefing

- The standard was developed by the X9F4 Cryptographic Protocols and Application Security working group in cooperation with
  - National Institute of Standards and Technology (NIST) division of the Time and Frequency Calibration Services
  - ISO/IEC JTC1 Subcommittee 27 on Information Technology Security Techniques
  - Organization for the Advancement of Structured Information Services (OASIS) Digital Signature Services Technical Committee.
- Trusted time stamp technology coupled with strong authentication techniques provide a new dimension to non-repudiation; ushering in a higher level of information assurance to the financial services industry
  - Critical technology solution for Sarbanes-Oxley Act (SOX)
  - Essential technology solution for best business practices



# X9.95 Briefing

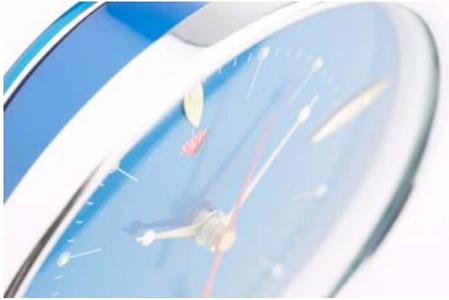
- X9.95-2005 Trusted Time Stamps
  - Give the ability to rely upon the integrity of data/records separate and apart from their custody or their context.



# X9.95 Briefing

## Recommendations/Requests

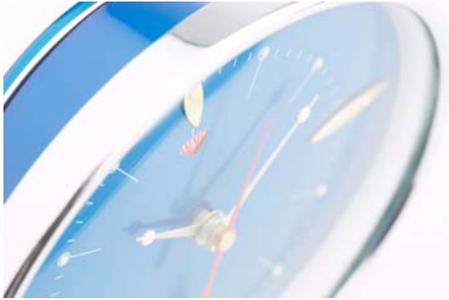
- Any change to 22c-1 be Standards-Based and Vendor Neutral
- Any Alternative to the 'Hard 4' be Secure and Employ Trusted Time Stamps
- Consideration of X9.95-2005 Compliance as a Base Requirement of Any Change to 22c-1 or Alternative to a 'Hard 4'



# X9.95 Briefing

## Questions & Discussion

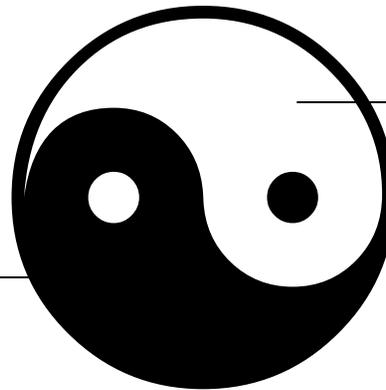
- 
- 
- 
- 
-



# Insider Risk Examples

*Pick-6 Scandal*

Prevention and Detection  
of Fraudulent Behavior



**Proof of  
Compliant Conduct!**

*Johnson & Johnson  
Case*

Trusted Time Stamps  
Sword & Shield

[www.infoassurance.org](http://www.infoassurance.org)