Conformance
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We've spent 2 days discussing the data we want the standard to support…..

… but no time discussing whether or not the data is well formed or if it can be readily interchanged across systems.

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ANSI/NIST vs. the Domain Implementations

- Govt. Requirements Documents Consistently Demonstrate Confusion on this topic

  - Conformance with ANSI/NIST ITL 1-200x- referred to here as "baseline"

  - Conformance with a "Domain" is different and describes how the standard is used

- Conformance with the ANSI/NIST standard

  - Is necessary and mandatory, but does not ensure successful data interchange.

  - Provides the basics: the syntax, biometrics, and meta data for the biometrics

  - Generic parsers /writers should support this level

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Three Levels of Conformance For ANSI/NIST ITL 1-200x
- Structure, Consistency, Mandatory Data

- Structure

  - Is the object well formed?

  - Are the record and field numbers in the correct locations?

  - Are the information separators in the correct locations?

  - Are the record lengths for the binary records (images) correct?

- Consistency

  - Ensure that all records listed in the CNT field (records present, type and order) are accurate

  - Ensure the IDCs (Image Designation Characters) map back to the CNT field in type 1 record

  - Ensure the image records contain images

  - Check that image heights and widths match those values in the fields

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Conformance of ANSI/NIST ITL 1-200x

- Is Mandatory Data Present?

  - At least a type 1 record structure.

  - The mandatory type 1 fields must be present

  - Mandatory fields in other records (i.e. type 10, 14) must be present

- For the most part, not too many violations of the syntactical structure of the standard

  - We are 15+ years into the usage of the standard

- At least one major point of confusion remains:

Examples of Non-Compliant Structures
that Violate the Baseline

- Total Field Length:
  - Some people include the marker characters in total field length, others do not

- Other problems:
  - Use of non ASCII/UTF-8 characters. Some implementations include character sets such as Latin 1 and Latin 2
  - Use of numeric compression algorithm ID instead of ASCII: e.g.. "1" instead of WSQ20
  - Missing records separator when binary data (images) are present (forget to add?)
  - Non-compliant parsers:
    - E.g.: require 3 places for field numbers- 1.001 is accepted, 1.01 is rejected
    - E.g.: write the FGP (finger position code) into the record index (CNT)

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Domain Conformance

Conformance with a Domain Implementation

- This is where most of the ambiguity, misinterpretation and confusion occurs.

- A "domain"- Field 1:013, is an agency-specific implementation of the standard.

  - An optional field, very few agencies use it

  - But still, the concept of "domain" is inherent to the standard

- Examples:

  - FBI EBTS, BKA GSAT, DoD EBTS, Interpol Implementation, RCMP NPS, EU BMS, Western Identification Network, individual US States

Domain Conformance Issues

- Could be the result of different "Interpretations:"

  - Flexibility of the baseline standard
    - Type 2 and type 7 records are "user defined"

  - Historical Ambiguities in the baseline standard
    - Do field lengths include the information separators?
    - What image types and compression algorithms can be used?

- Most Conformance problems are based on unclear, poorly defined, domain specifications, not on the interpretation of the baseline

- … when there is a failure by the domain to fully describe the data elements required

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Domain Conformance Problems
(based on real Domain implementations)

- Legal but unusual (and difficult to verify for domain conformance)

  - Using the same TOT for different transactions

  - Text fields not separated into standard "units"- <US>
    - Instead separated with "," or "/

  - Long run-on text fields 350-500 chars
    - Multiple information items not separated into subfield or item
    - Data separation based on a defined number of bytes into the field

  - Type 7 records with very large headers before the image data- i.e. "proprietary" type 7 records
    - Changing usage of type 7 by same agency- latents, scanned cards, palms

  - No min/max field lengths specified

  - No character types specified

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Domain Conformance Challenges-
(based on real Domain Implementations)

- Examples of Non-Conforming domain implementations- They violate the baseline

  - Binary data in ASCII records types (i.e. type 9 record)

  - TOT codes greater than 4 characters (up to 14 chars)

  - No TOTs listed in the reference document, only records and fields

  - TOTs listed in the reference document, but no records or fields described for each TOT

  - Code tables not adhered to (IMP, field 9.003)
    - Domain makes up its own codes

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Summary: Suggestions For Ensuring Conformance

- Continue to Plug Ambiguity holes in the ANSI/NIST ITL 1-200x baseline
  - Revisions over the years have eliminated some of these

- The Domain Implementations should be well defined

- A guideline or "how to" document?
  - Stick with the syntax of the baseline (use the structures defined in the standard)
  - Define unique, task based, TOTS
  - Clearly define mandatory and optional data
  - Apply liberal usage of the information separators
    - Others should be able to parse the structure into all of its constituent components

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Thank You!

Questions and Answers