



ULW Approach for Sharing Latent Identification Services (ANSI/NIST Standard)

NIST Latent Workshop

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Sharing Latent Identification Services

- Requirements
- ANSI/NIST Record
- ULW – Encode once, search anywhere
- The way forward



The Problem

Most latent prints are not searched beyond the local AFIS

- **Resource limits**
- **Falling ID rate with successive AFIS**
- **Awkward or no connectivity**
- **Duplicate encoding steps**



Sharing Latent Identification Services

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AFIS are highly optimized to their native feature set

Must provide each AFIS with its native characterization to insure full accuracy



Latent Search Record

ANSI/NIST
Data Format

Header 1

Descriptive Data 2



Features
Minutiae
Ridge Cnts
Core
Delta 9

EFTS
Required Fields

AFIS Vendor's Specifications

Image Quality Specifications



ANSI/NIST Type 9 Record

9:013

:
:

FBI IAFIS Features

9:030

9:031

:
:

Cogent Features

9:055

9:056

:
:

Printrak Features

9:070

9:071

:
:

SAGAM MORPHO Features

9:099

9:100

:
:

NEC Features

9:125



ANSI/NIST Type 9 Record

- 9.001: Logical Record Length
- 9.002: Image Designation Character
- 9.015: Number of Minutiae
- 9.016: Fingerprint Characterization Process
- 9.017: Pattern Classification
- 9.020: Orientation Uncertainty
- 9.021: Core Attributes
- 9.022: Delta Attributes
- 9.023: Minutiae & Ridge Count Data
- ⋮



Universal Latent Workstation (ULW)

Universal Latent Workstation - [LFFS: (Sample015.bmp) (2:1) (500 dpi)]

File Edit Image View Training Window Help To Do

Colorize + - + - Zoom (2:1) Show Features Edit Features Count Ridges Image Quality Reject minutia

LFFS: (Sample015.bmp) (2:1)

- Rec 1: Transaction Information
 - Transaction Data
- Rec 2: Descriptive Text
 - Case Information
 - Subject Description
- Latent A
 - Rec 7: Fingerprint Image
 - Fingerprint Image
 - Rec 9: Fingerprint Feature Data
 - FBI IAFIS (empty)
 - Cogent (empty)
 - Sagem Morpho (empty)
 - NEC**
 - Motorola (empty)
 - Annotations

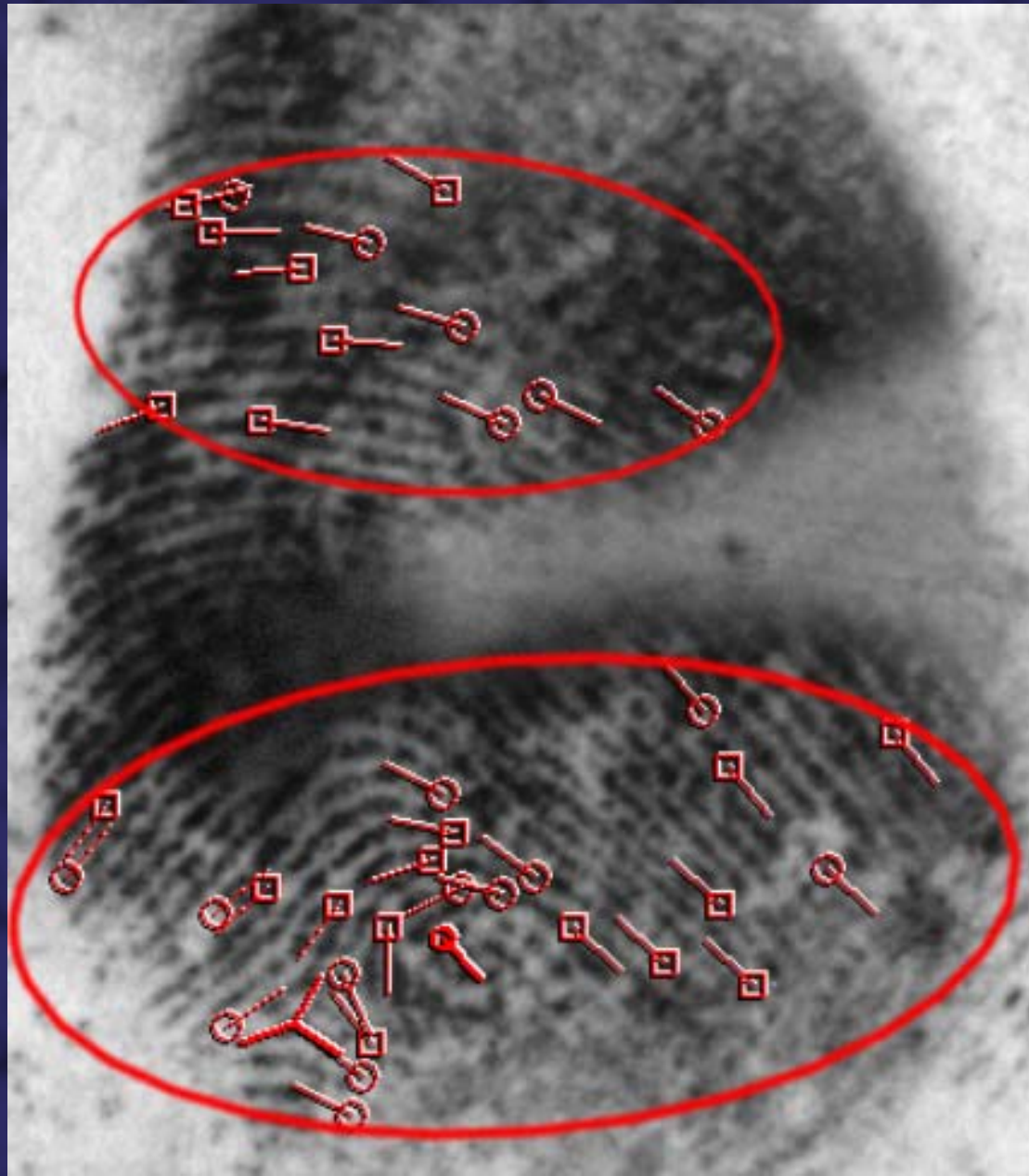
Create feature set

Create a new feature set for FBI IAFIS based on NEC?

Yes No

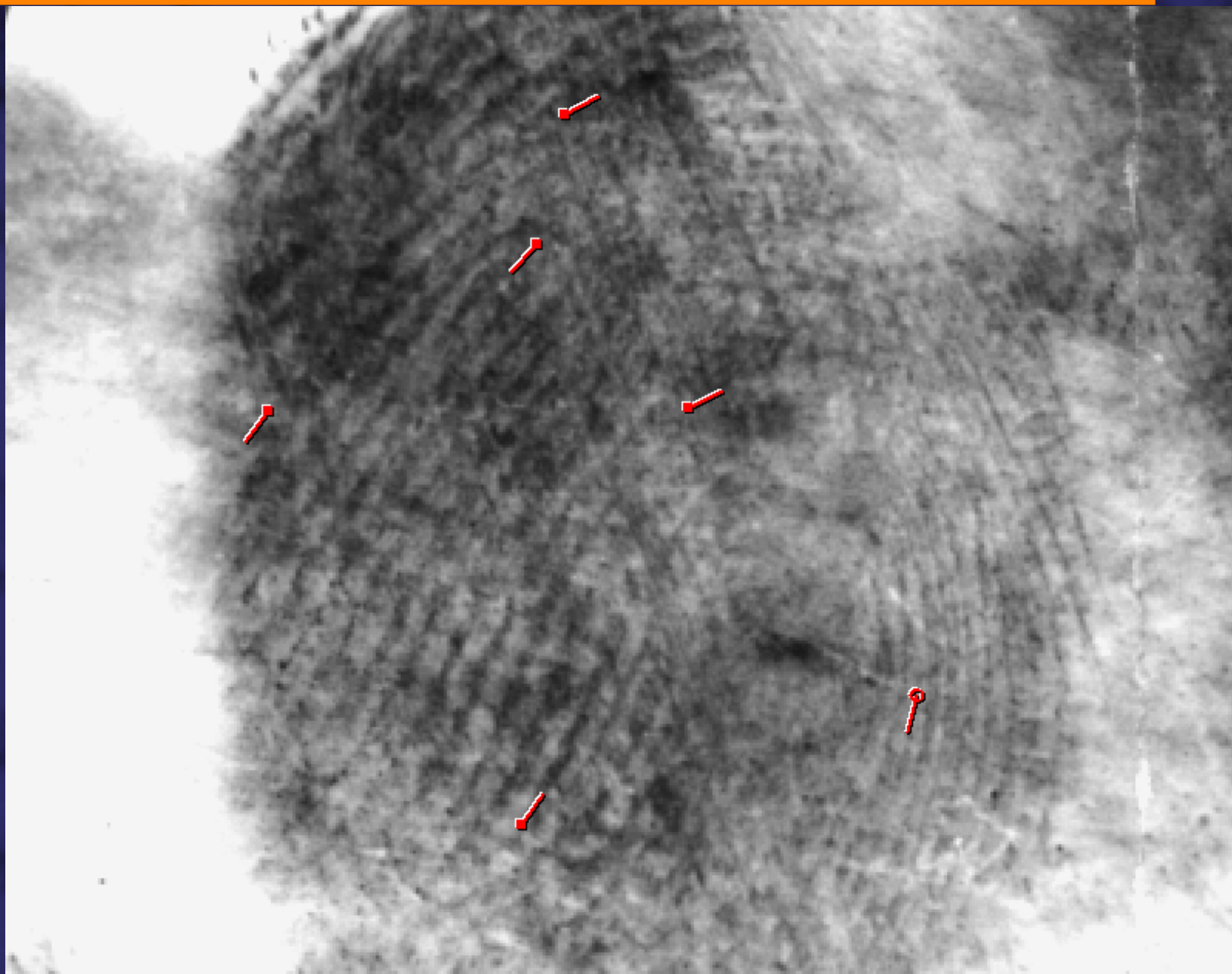


Minutiae Clusters





Isolated Minutia





The Challenge

Insure that the automated encoding or trans-coding stops short of errors and provide the examiner with oversight and revision options