Lakota
SOFTWARE SOLUTIONS

Helping you build simple and affordable biometric systems!

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Who We Are

- Founded in 2007

- Software development company specializing in biometric file submissions to an AFIS/ABIS

- US and International experience
  - US Government contractor supporting ABIS development for:
    - DoD ABIS (2006 – Present)
    - FBI NGI System (2011 – Present)
    - DHS HART (2017 – Present)
    - AABIS (2018 – Present)
  - Commercial products sold in multiple countries
    - See next slides for product descriptions
  - Standard Support
    - DoD EBTS 1.0 – 4.1 (with XML)
    - FBI EFTS 7.1 – EBTS 10 (with XML)
    - NATO STANAG 4715 Ed. 1 and Ed. 2 (with XML)
    - DHS IXM 6
    - Interpol

What We Offer

- Commercial SW products:
  - SDKs
  - Applications
  - Free 30-day trials
- Consulting and Integration services
- AFIS/ABIS Development
  - Law enforcement agencies
  - Government agencies
  - Mobile systems
- International standards support
  - NATO STANAG
  - Interpol

What Makes us Different

- Prevention of vendor lock-in:
  - Use any collection device
  - Connect with any ABIS
- Lower cost to competitors
- Small business agility and support
- Pure JAVA implementation
- Experience:
  - SW development and support for the 3 largest US biometric systems
    - **FBI Next Generation Identification (NGI)**
    - **Dept. of Defense Automated Biometric Identification System (DoD ABIS)**
    - **Dept. of Homeland Security Homeland Advanced Recognition Technology (HART)**

Biometric Products

- **Ani** – SDK for ANSI/NIST-ITL support

- **Image** – SDK for image manipulation (includes WSQ)

- **Whorl** – Application to create, read, update and validate ANSI/NIST-ITL files

- **Sequence** – SDK to provide fingerprint segmentation

- **Lakota Image Acquisition (LIA)** – SDK for scanning documentation and fingerprint cards to acquire biometric images

- **Rapid Image Acquisition & Conversion (RIAC)** – application using LIA to convert fingerprint cards to EBTS files automatically

- **Forensic Image Extraction, Clustering, and Export (FIERCE)** – application using facial recognition to automatically extract faces from multimedia files and export them to NIST files

Product Video link:

https://vimeo.com/251334514

Ani

The most advanced ANSI/NIST-ITL and EBTS software development kit on the market.

Features:

- Flexible design to support custom specifications

- Supports common verification file format

- Intelligently recovers data from corrupt transactions

- Pure JAVA - No native libraries

- Javascript API for custom validation

- Supports conversion to/from NIEM XML

- Supported on all major platforms

Image

Encode and decode biometric images across many platforms and mobile devices faster and easier than ever before.

Features:

- Supports numerous image formats (BMP, FAX, JPEG, JPEG-2000, PNG, PNM, RAW, VECTOR and WSQ)

- Industry-leading WSQ Performance
  - FBI-certified WSQ

- 1000 DPI to 500 DPI down-sampling algorithm

- RAW image dimension detection

- Easy-to-use interface

- Conversion to Java BufferedImage and Android Bitmap objects

- Supported on all major platforms

Whorl

The most advanced EBTS editor on the market.
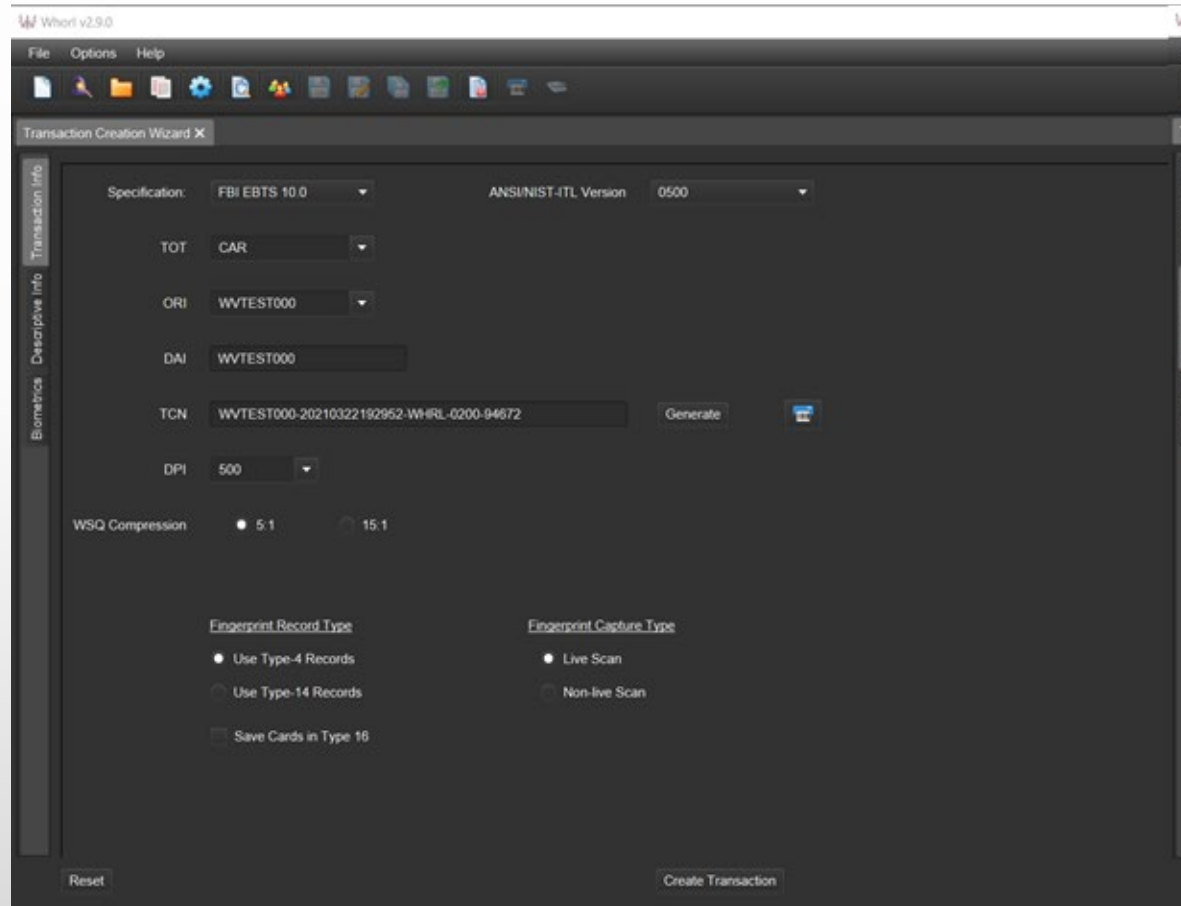
Features:

- 3-step Transaction Wizard to guide you through building compliant submissions
    - Drag-and-drop support for transaction and image files
    - Supports ANSI/NIST-ITL based specifications
    - Identifies and corrects missing and invalid data
- Create multi-modal submissions using:
    - Live scan device/palm scanner
    - Iris scanner
    - DSLR camera
    - Facial images
    - Face Transaction Wizard – create multiple face transactions from an uploaded photo
- Compare multiple files
- Batch editing

Whorl

The most advanced EBTS editor on the market.

Transaction Wizard Step-by-step:

**STEP 1 – Define
The Transaction**

Whorl

The most advanced EBTS editor on the market.

STEP 2 – Enter Biographical Information

Whorl

The most advanced EBTS editor on the market.

STEP 3 – Collect Biometrics
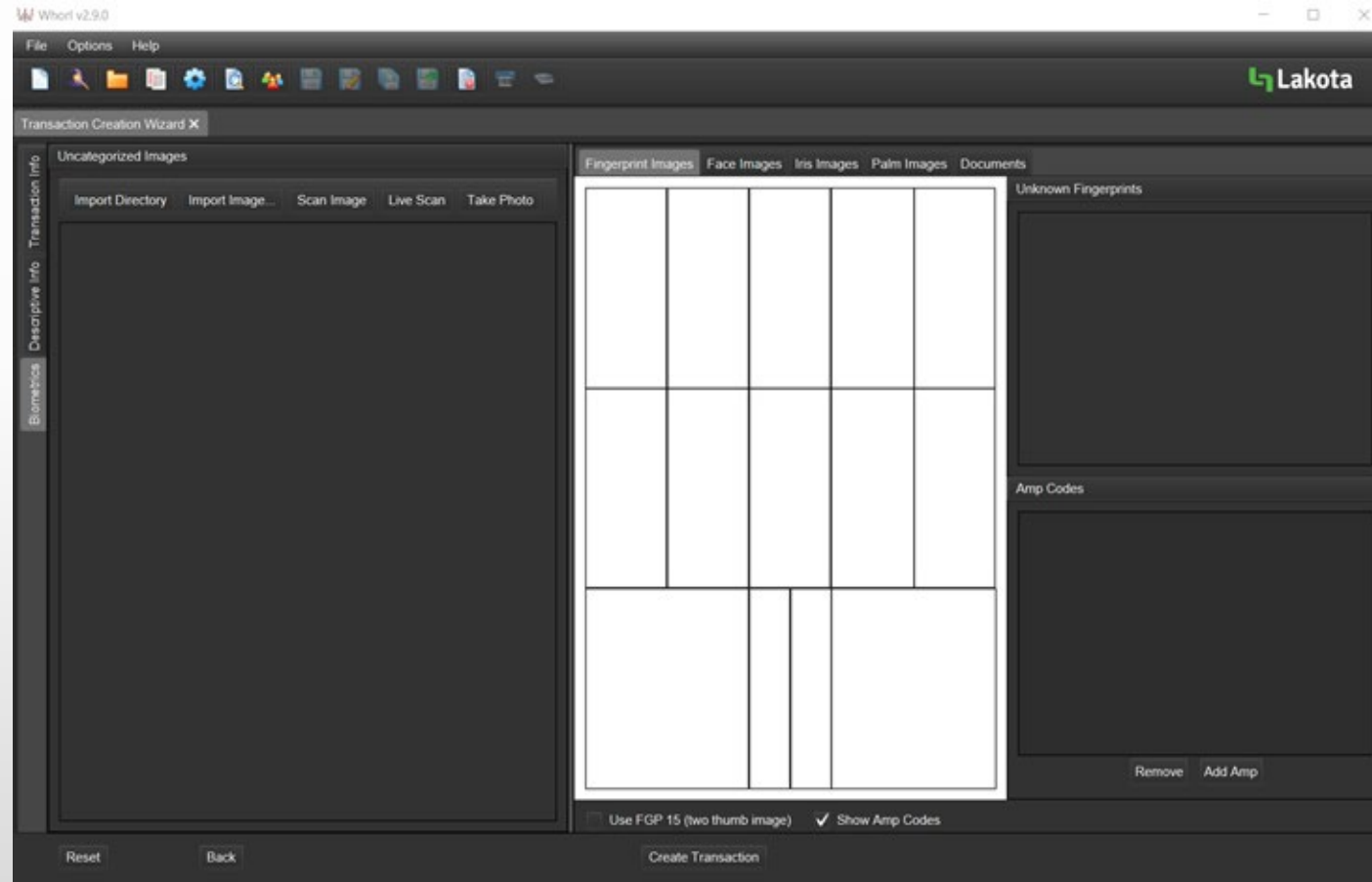
Whorl

The most advanced EBTS editor on the market.

Completed 10-print collection

Whorl

The most advanced EBTS editor on the market.

Whorl also allows you to compare multiple files
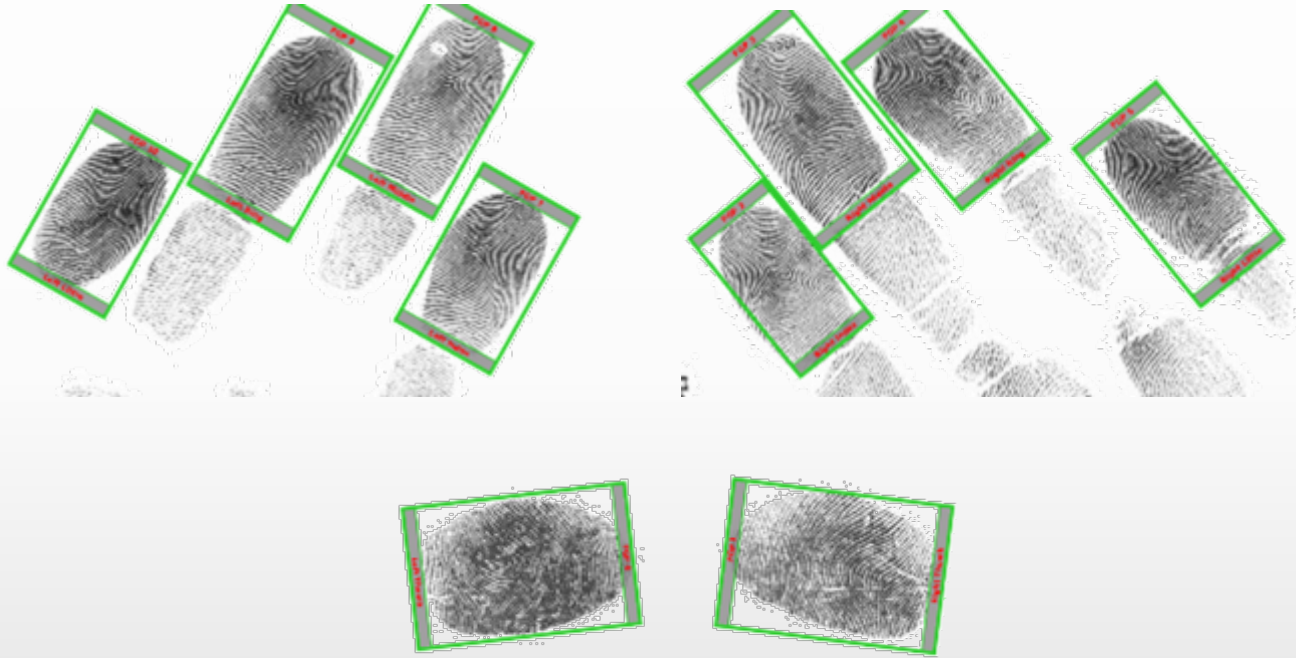
Sequence

State of the art segmentation and sequence checking.
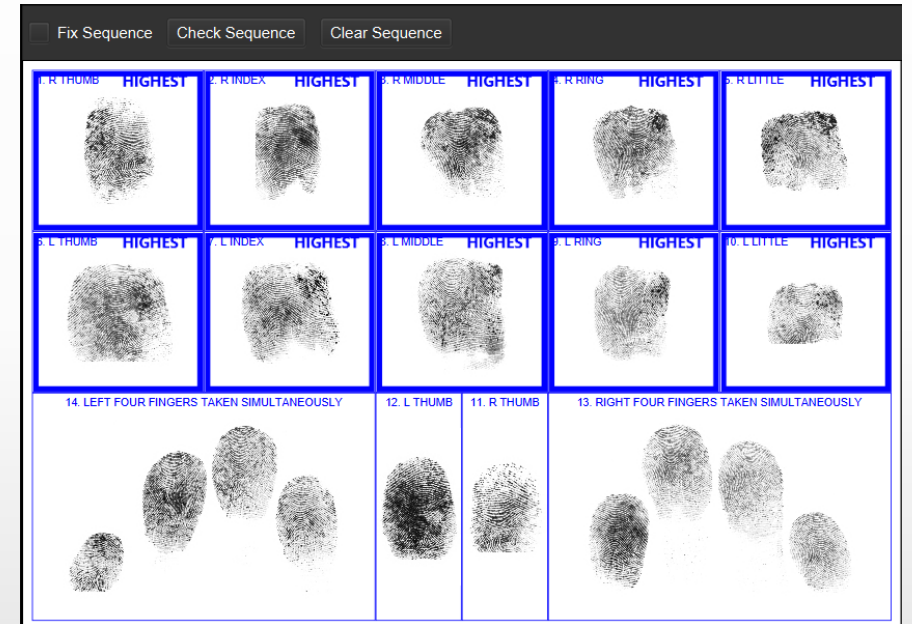
Features:

- 360° orientation detection

- Advance finger position detection

- Performed well in NIST SlapSeg II test and SlapSeg III test

- Performs exceptionally well at off nominal cases

Sequence: Examples

Segmentation being performed at extreme angles

Sequence check being performed in our Whorl app

Lakota Image Acquisition (LIA)

Features:

- FBI Appendix-F certified Java library

- Scan fingerprint cards and documentation to obtain images

- Certified with Fujitsu fi-7600 and Epson V800 Flatbed scanners

- Supports duplex and multiple resolutions (500dpi for certified scans)
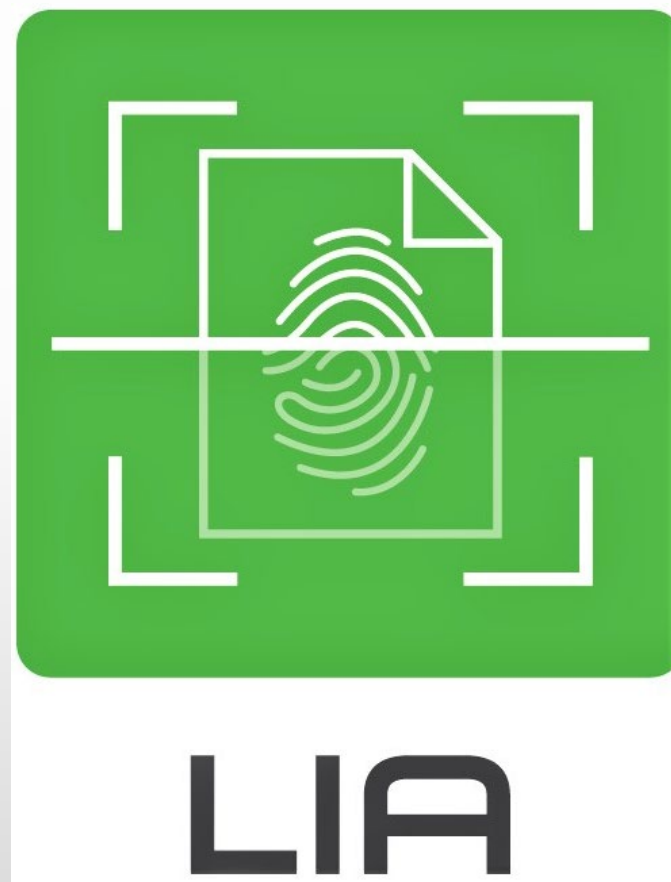
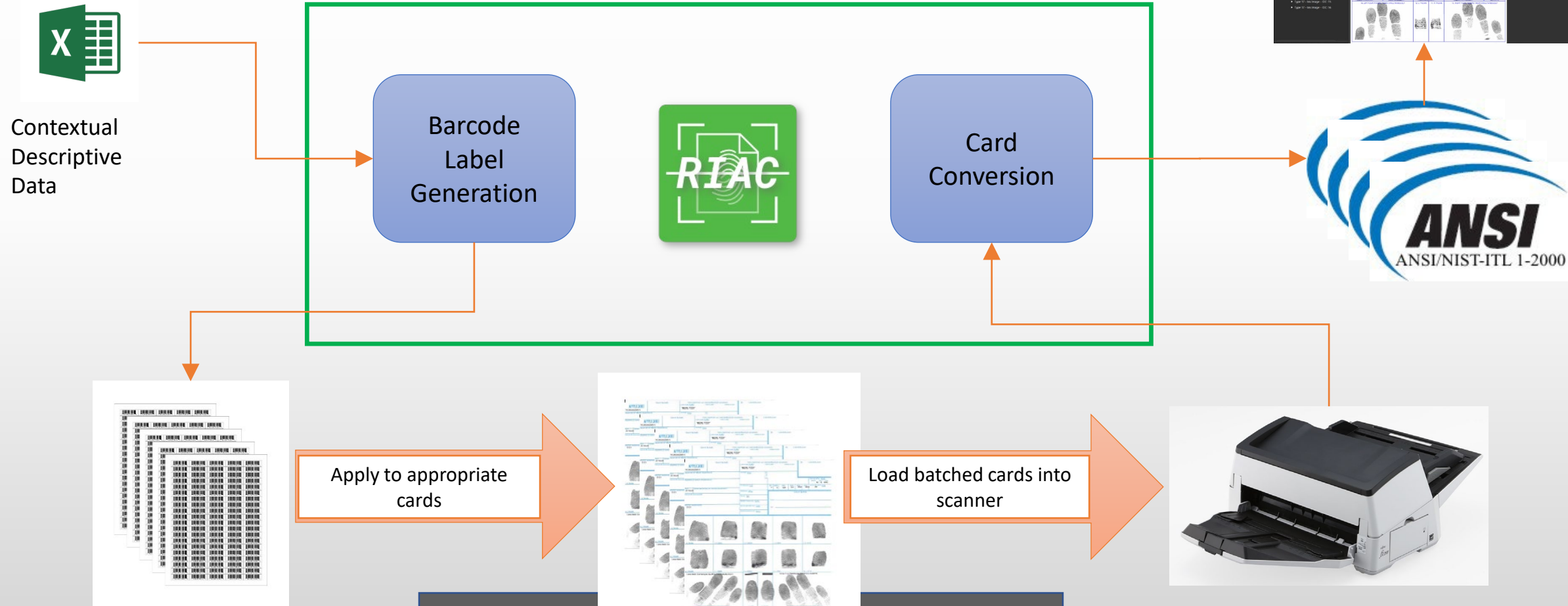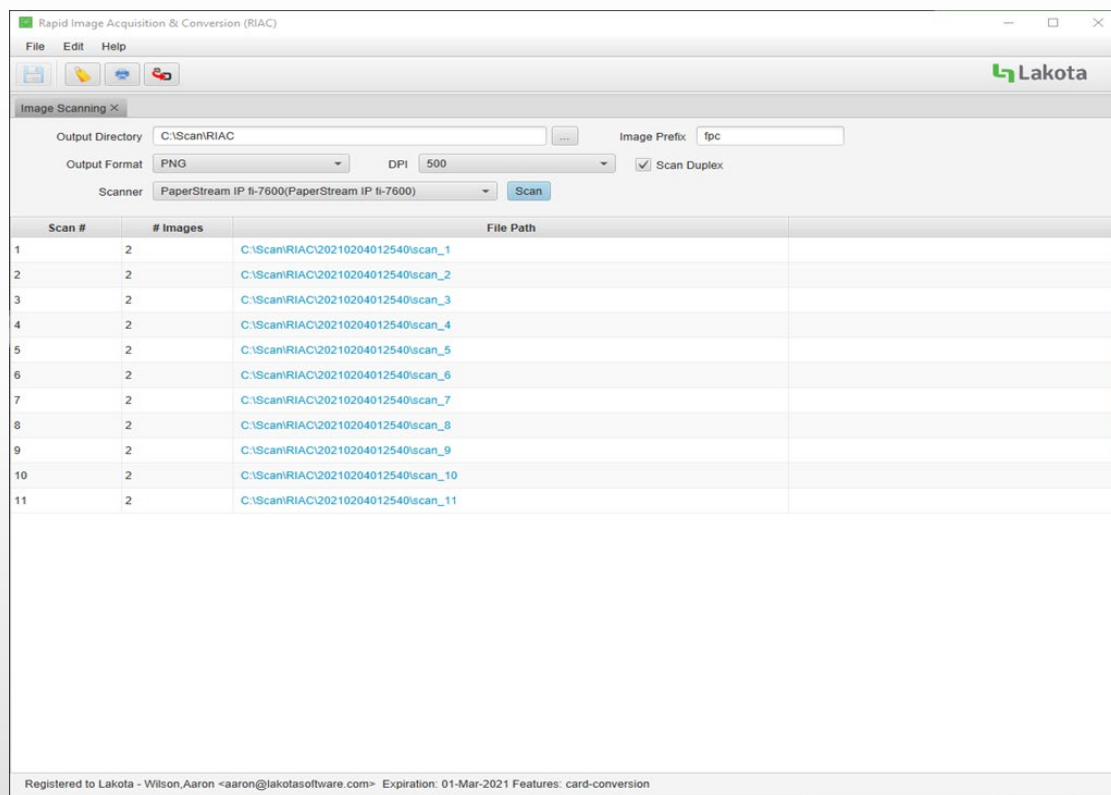# Rapid Image Acquisition & Conversion (RIAC)

Features:

- **Rapid fingerprint/palmprint card image collection** from a document scanner using our LIA SDK

- **Automatic card segmentation and conversion** to ANSI/NIST-ITL (e.g. FBI EBTS) transactions

- **Extraction of contextual/descriptive data** from 2D barcodes and map to specific locations within the converted ANSI/NIST-ITL (e.g. EBTS) transaction

RIAC Card Conversion Workflow

Contextual Descriptive Data

Barcode Label Generation

RIAC

Card Conversion

ANSI/NIST-ITL 1-2000

Apply to appropriate cards

Load batched cards into scanner

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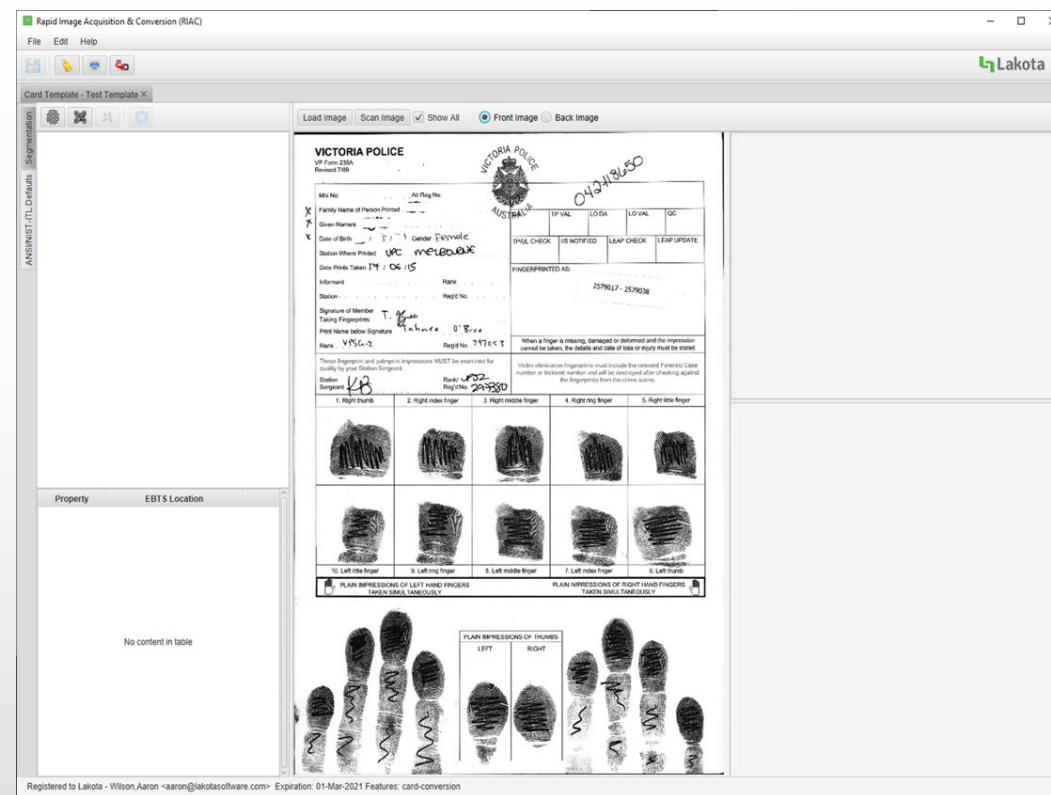
Rapid Image Acquisition & Conversion (RIAC)

Main interface with scanned document list

Scanned document example; can define template from initial scan

# Forensic Image Extraction, Clustering, and Export (FIERCE)

Features:

- Automates media extraction processes and increases examiner efficiency
- Gather and sort facial images into unique identities and select the "best" set of images from each identity
- Output images are cropped and aligned properly regardless of pose
- Supports all poses (frontal, left/right angle, left/right profile) and demographic extractions (Sex, Race, Age range)
- Integrating accepted standards as published by NIST OSAC, FISWG, and the IAI

Mobile Enrollment Workstation
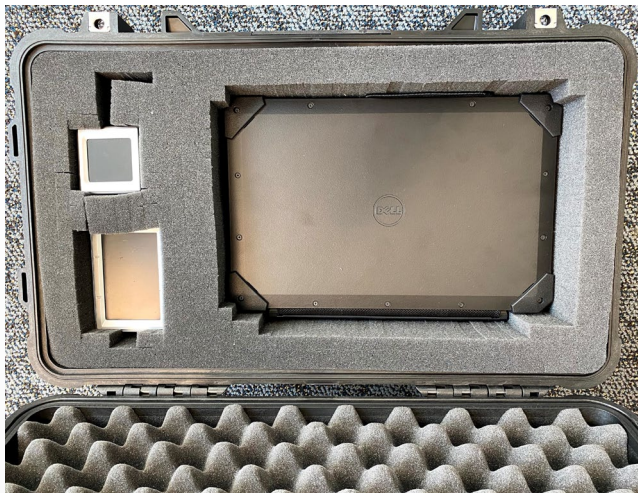
Layer 1: Tablet and IB Five-o & Watson devices
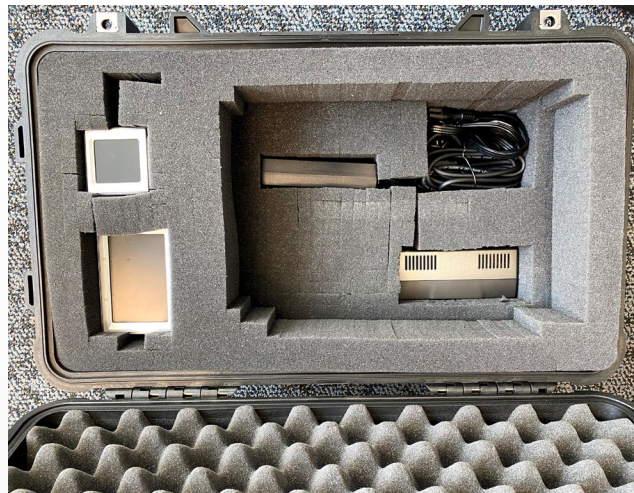
Layer 2a: Power Supply and IRIS ID R100 camera

Layer 2b: IB Kojak device

Carry-on-approved, protective Pelican case Contains:

- Dell 7220 Tablet w/ detachable keyboard
- Integrated Biometrics Five-o, Watson, & Kojak fingerprint collection devices
- Iris ID R100 camera
- Cables/storage/Power Supply*

*Workstation can be configured to fit inside Acumentrics Carry-On Power Case™

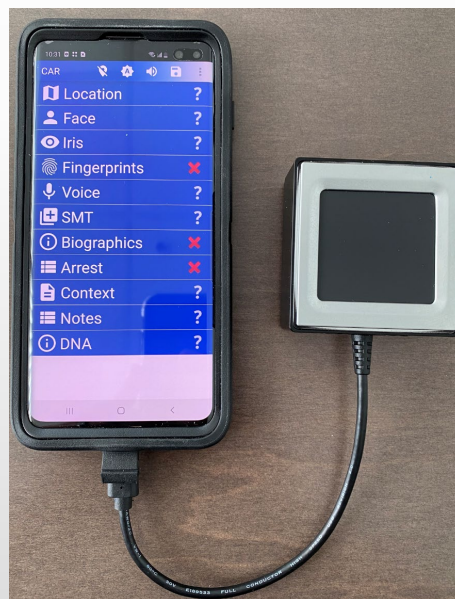# More Examples of Lakota Software Integrations

Northrop Grumman BioSled mobile collection device
(Using our Ani SDK)

BioSled handheld device by Northrop Grumman

http://www.northropgrumman.com/
Capabilities/IdentityManagement/Do
cuments/BioSled_datasht.pdf

Northrop Grumman BioMobility Android application
(Using our Ani SDK)

Lakota RapiID kiosk

Lakota

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WANT TO SEE MORE?
Click here to watch demonstration videos of our products!