SED TECHNOLOGY LLC

Presents a New Firearms Forensic Technology Based on Infrared Technology

Supported by two DOJ Grants

2007 grant "The Use of Infrared Imaging, a Robust Matching Engine, and Associated Algorithms to Enhance Identification of both 2D and 3D Impressions"

2009 grant "Improve the NIBIN System with 3 major tasks including:

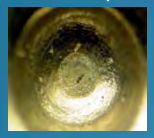
Validate the persistence of the microscopic details within firing pin impressions through imaging of cartridge cases after multiple firings of selected firearms

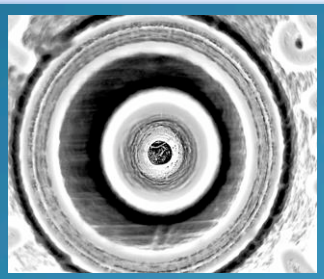
Develop a capability to compare and correlate infrared images of deformed bullets

Create an infrared database of 1,000 to 10,000 cartridge cases

IR Image Produces Detailed Firing Pin Features

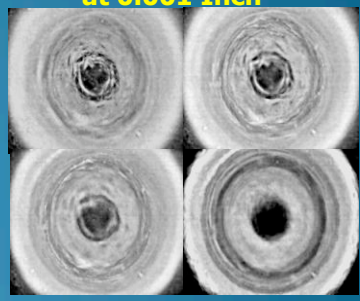
Visual of firing pin impression at 40x



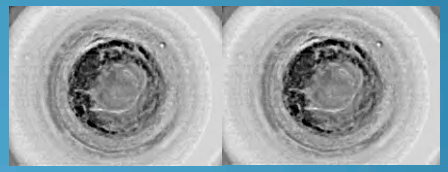


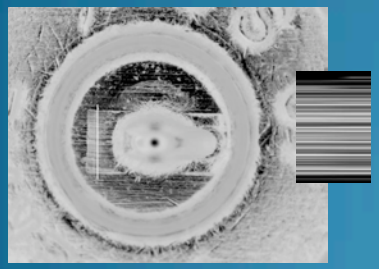
IR focused on firing pin impression detail

Rifle Cartridge Slices at 0.001 Inch



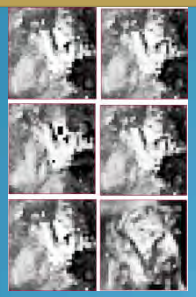
SKS Rifle FPI from Successive Firings





Selected Cutline Produces BarCode

Self-Generated IR Barcodes Provide Accurate Identification Of Toolmarks

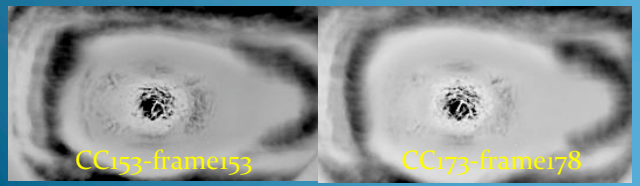


FP CC091 **Re-Scans**
Barcode Correlation 99.6%

FP CC090 CC091 **Siblings**
Barcode Correlation 98.5%

FP CC091 CC085 **Non-Siblings**
Barcode Correlation 24.5%

Glock Siblings Enlargement of Firing Pin areas



Benefits of Infrared Imaging

- **No lighting-induced artifacts or variations**
- **Automated collection imaging**
- **Quantitative comparison based on: entire image primer area, or firing pin impression**
- **coding of: breech face marks, primer shearing marks, firing pin impression for faster database search**