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”

IR Image Produces Detailed Firing Pin Features
Visual of firing pin impression at 40x
IR focused on firing pin impression detail

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 44.5%

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

Selected Cutline Produces BarCode

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

Glock Siblings Enlargement of Firing Pin areas

Rifle Cartridge Slices at 0.001 Inch
SKS Rifle FPI from Successive Firings

Visual of firing pin impression at 40x
IR focused on firing pin impression detail