



E22 The National Institute of Justice's (NIJ's) Terrestrial Light Detection And Ranging (LiDAR) Scanning Working Group (TLSWG) for Criminal Justice Applications: Progress to Date

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Learning Overview: After attending this presentation, attendees will be apprised of current NIJ-supported efforts to promote more uniform implementation and use of terrestrial LiDAR scanning technology for criminal justice applications.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by improving attendees ability to attain high-quality and scientifically supportable conclusions from scan data by developing consensus-based guidelines for terrestrial LiDAR scanning.

Terrestrial LiDAR scanning (TSL) devices (also known as terrestrial laser scanning devices) acquire complex geometric data that captures a 3D representation of a scene. Use of this technology is increasing in criminal justice applications, such as documenting a crime or crash scene; however, no standardized, vendor-agnostic guidelines are available to help practitioners successfully use TLS from scan capture through storage.

The NIJ's Forensic Technology Center of Excellence convened a TLSWG for Criminal Applications to address these key challenges in using TLS. The TLSWG consists of federal, state, county, and local forensic practitioners and researchers with extensive backgrounds in crime scene documentation and reconstruction, as well as experience in providing expert testimony on bloodstain pattern analysis and trajectory reconstruction. The working group also has representation from the Crime Scene Subcommittee of the NIST Organization of Scientific Area Committees (OSAC) and NIJ's Forensic Science Technology Working Group.

The goal of the TLSWG is to develop resources that reflect consensus-based best practices to standardize and improve the use and application of TLS in crime scene documentation and reconstruction. These deliverables will help establish a minimum standard for capture, processing, analysis, visualization, presentation, and storage of TLS data in a forensic context. These resources are intended to promote uniform implementation and use of TLS technology in practice. This will ultimately improve the practitioners' abilities to attain scientifically supportable conclusions from TLS data, ensure effective quality management procedures, and improve presentation of this information to stakeholders, including law enforcement, investigators, and the courts (e.g., prosecutors and defense attorneys, judges, and juries).

Through virtual meetings, the TLSWG has identified challenges and key community needs for: (1) equipment procurement, calibration, and validation; (2) data capture and relevant training; and (3) data processing, management, and reporting. In this presentation, the group will communicate key insights that they have developed from these collaborative sessions, including progress on a standardized "field calibration check," guidance on data management, and the value of additional equipment needed for successful usage of TLS.

Terrestrial LiDAR Scanning, Crime Scene, Documentation