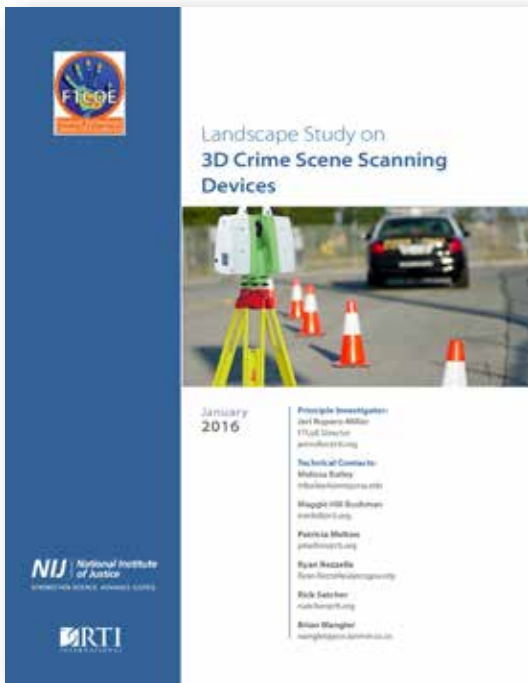


National Institute of Justice Publishes Landmark Report on 3D Crime Scene Scanning Devices

Jan. 26, 2016 - Today the National Institute of Justice — the research, development and technology evaluation arm of the U.S. Department of Justice — published the results of its long-anticipated report titled “Landscape Study on 3D Crime Scene Scanning Devices.” Two years in the making, the study was conducted by RTI International, one of the world’s leading research institutes, and was published by RTI’s **Forensic Technology Center of Excellence**. A total of six laser scanner manufacturers were included in the study.



While the report stops short of recommending any one particular vendor’s product over another, it is noteworthy that a Leica ScanStation appears on the cover. Two separate sections of the 56-page study provide detailed insights into the authors’ consensus opinion as to the most critical factors that crime and crash scene investigators should consider when selecting scanning equipment for use at a scenes. If compiled into a checklist, these factors effectively describe the features and benefits found in the Leica Geosystems ScanStation PS30 and PS40 laser scanners.

Three examples from the report are cited below:

“Error and accuracy are critical aspects in verifying that the scanner selected for purchase has the capabilities to produce the survey-grade measurements using sound methodology that will stand up against Daubert or Frye hearings in court proceedings.” [p. 41]

The report provides an example methodology for forensic surveying and emphasizes the importance of both “survey-grade measurements” and “**scientifically accurate data.**” The implication is that not all laser scanners can produce survey-grade measurements. While almost all laser scanners can produce scan data suitable as demonstrative evidence, not all laser scanners are capable of producing scientific evidence that expert opinions should be based upon. It’s worth noting, however, that all Leica ScanStations do produce survey-grade measurements. The reference to Daubert is both telling and crucial because some manufacturers don’t publish the accuracy of their products, making it difficult to understand how investigators eventually testifying about those scanners could survive a **Daubert** challenge which requires a known or potential error rate. The **work of Greg Walsh** of Leica Geosystems (the system architect of the ScanStation) was cited in the RTI report for his 2015 presentation on measurement errors within point clouds at a NIST sponsored symposium on forensic error management. Dr. Walsh was one of two Leica Geosystems expert witnesses involved in the 2013 federal trial that resulted in United States Magistrate Judge Gregory B. Wormuth issuing **this** Daubert ruling on the scientific and technical validity of Leica ScanStation evidence.

“Portability and ruggedness: Since these devices must travel to accident or crime scenes, they must be easily transported and able to withstand harsh environments.” [p. 18]

Leica ScanStations are designed to be used in **extreme conditions**, including driving rain, snow, extreme cold (as cold as -4 degrees F), blazing heat (up to +122 degrees F), as well as windy and dusty environments, thanks to the enclosed optics and an IP Rating of 54.

“A QA protocol should be defined in an agency’s user protocol...The process may include adding something of known size/measurement to the site, and then verifying that the measurement of the object is as expected... devices that have calibrated “measurement traceability” should be employed...This will preferably be completed in the field.” [p. 15]

By **working directly** with the National Institute of Standards and Technology (which along with the Department of Justice is co-chair of the **National Commission on Forensic Science**), Leica Geosystems developed a NIST traceable twin-target pole specifically for laser scanning. This satisfies both the report’s strong recommendation (note the term “should” is used) and the requirements of ISO 17025 for accredited agencies. ScanStation PS30 and PS40 users can place this unique device in the scene anywhere up to 70 meters (230 ft.) distant and acquire both targets with an accuracy of about 2 mm. The user can then perform the QA measurement check between the two targets directly onboard the ScanStation before proceeding with scene measurements as recommended by the report.

Coming on the heels of last month’s **announcement** by the Department of Justice about New Accreditation Policies to Advance Forensic Science, RTI’s “Landscape Study on 3D Crime Scene Scanning Devices” report stands out as an invaluable reference for investigators and Forensic Science Service Providers looking to ensure that the laser scanning technology they invest in will survive in both the actual field environment and the legal environment that it must operate within.

To learn more about how the Leica ScanStation PS30 and PS40 meet the guidelines in this new report and can help you document scenes with confidence, please **contact us**.



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