
*European consortium is
developing a tool for forensic
police officers and forensic
service providers*

A group of European organisations have teamed-up to develop a new ground breaking solution for forensic evidence collection and analysis: 3D-Forensics - Mobile high-resolution 3D-Scanner and 3D data analysis for forensic evidence. The project started in 2013 and is co-funded by the European Union under the Seventh Framework Programme for research and technological development.



Benefits

- 1st product designed specifically for fast digitising of footwear and tyre impression directly at the crime scene
- Leveraging of optical and digital 3D technology
- 3D analysis software simplifies the process of identification
- Initial impression comparison automation
- Basis for increased gathering of evidence
- Basis for increased forensic intelligence
- Specific workflow designed into the product - from crime scene to court.
- Developed in cooperation with police force

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Partners

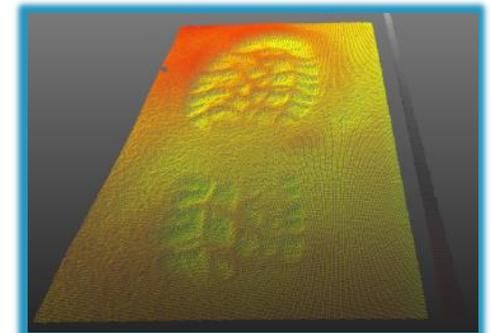


The research leading to these results has received funding from the European Union Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 312307.



3D-FORENSICS

Mobile handheld high-resolution 3D-Scanner and 3D data analysis for forensic evidence



Footwear and tyre impressions are valuable forensic evidence but time consuming and outdated in collection and analysis

Footwear and tyre impressions at crime scenes are important evidence for criminal investigations and proceedings in court. The common operational methodology to record these impressions is through the making of plaster casts. The physical impressions are then provided to experts to assess for the presence of identifying characteristics such as cuts, scratches, tears and holes.

Plaster casting of impressions has a number of disadvantages:

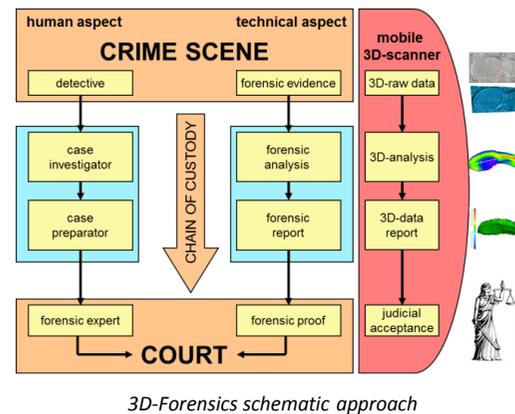
- Slow procedure, requiring preparing, pouring and drying of plaster
- Low level of accuracy, one attempt
- Not user friendly (e.g. messy, dusty etc.)
- Contaminates impressions
- Artefacts such as blood, glass and hair be removed beforehand
- No 3D digital data
- No impression comparison automation
- Cast needs to be physically sent to experts
- Time required often prevents collection of the evidence
- Whole analysis requires special experts



Plaster casting of foot impression

Fast and contactless 3D-acquisition of footwear and tyre impressions directly at the crime scene – workflow through to court

3D-Forensics is creating an innovative system for use by forensic police officers and forensic service providers to record and analyse footwear and tyre impressions as well as profiles in 3D and colour with optical scanning technology.

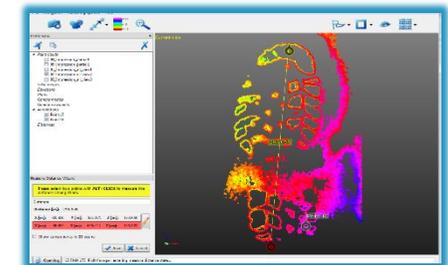
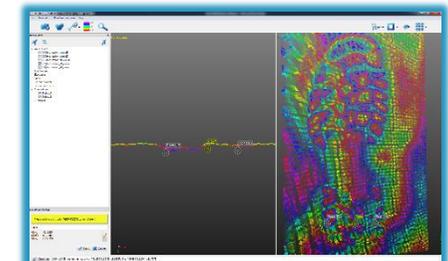


The system design will ensure that the complete data chain from scanning to identification is transparent and that results are reproducible. This will enable the system results to be integrated into criminal investigations and to be used in support of expert evidence in court proceedings.

The system will support the solving of an increased number of cases of crime and at a lower cost which will be a further deterrent to criminal activity.

Collection of digital 3D-data and easy extraction of features out of scanned impressions and their forensic analysis

- Capturing of traces of footwear and tyre impressions within some seconds
- Recording the 3D-profile of impressions in a digital point cloud in μm – accuracy
- Measurement without contact, no contamination
- Identification of class and identification features
- Easy exchange of digital 3D-data
- Connection with other survey 3D-data



Software impression: Footprint annotation and measuring