



Geomagic Studio helps investigators recreate scenes of accidents and crimes

In the TV shows, we know when a key bit of evidence is discovered – the star detective might squint at the ground or a dead body, whistle silently and emit a slight smile.

In real life, investigation is much more complex and often cannot be left solely to the powers of human observation. That's where 3D scanning and Geomagic Studio reverse engineering software come into play for the Criminal Investigation Department in the Baden-Württemberg region of Germany.

Capturing the scene

A recent helicopter accident investigation in the Baden-Württemberg region shows the breadth of a scene that can be recreated with 3D scanning and modeling.

The accident scene was captured by a 3D terrestrial laser scanner made by Zoller & Fröhlich, which has a range up to 79 meters (259 feet). The scanner captured not only the helicopter, but also the surrounding topography, including trees damaged by the crash.

The scene comes alive

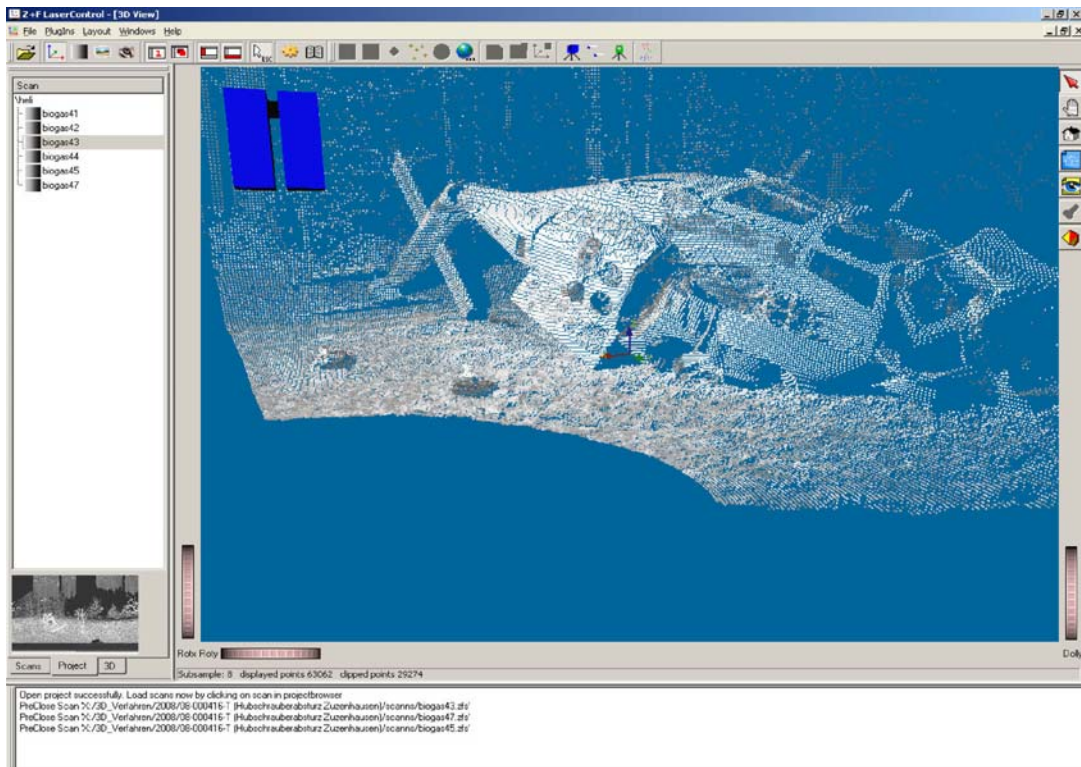
Six scans totaling more than 50-million points were brought into Geomagic Studio for processing. The scan data was optimized to remove outliers, reduce noise and fill in holes. Patented Geomagic technology was then used to align, merge and register the multiple scan data sets and to create a polygon mesh. The final step was to modify, edit and clean the polygon model.

The polygon model from Geomagic Studio was brought into 3ds max 3D animation software for further processing and animation. The completed scene in 3ds max allowed investigators to fly around and view the accident from different angles. Along with other data and information, the animation helped investigators determine that the cause of the accident was a pilot error.

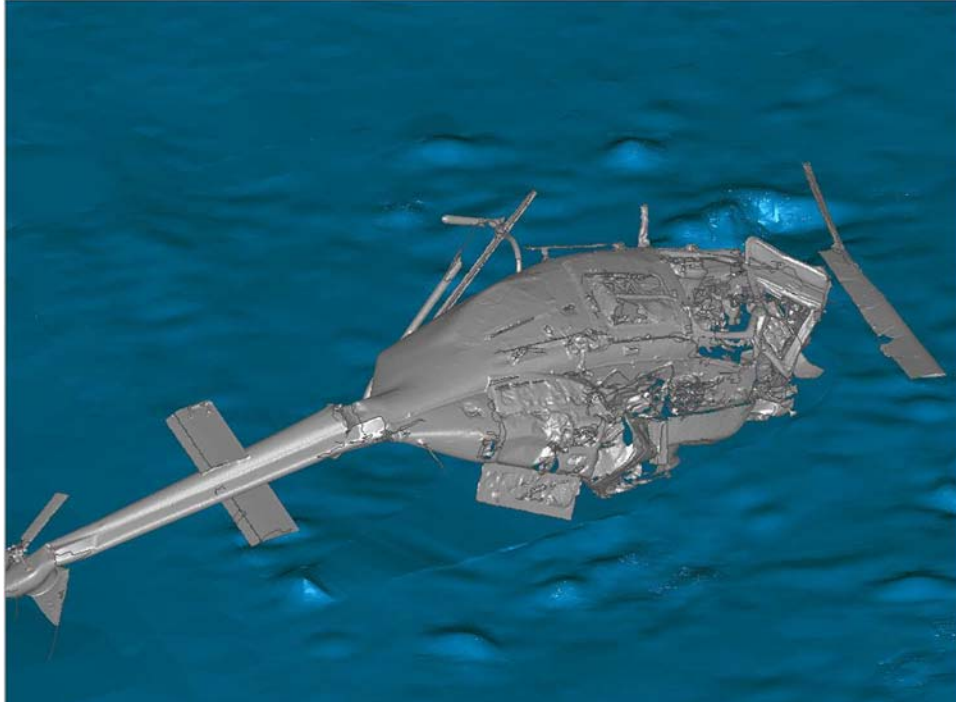
“Geomagic software is an ideal aid and facilitator for our investigations,” says Sandra Petershans of the Baden-Württemberg Criminal Investigation Department. “Thanks to Geomagic, complicated objects that do not match common geometric shapes can quickly and easily be modeled and incorporated into animations, scene sketches and reports.”



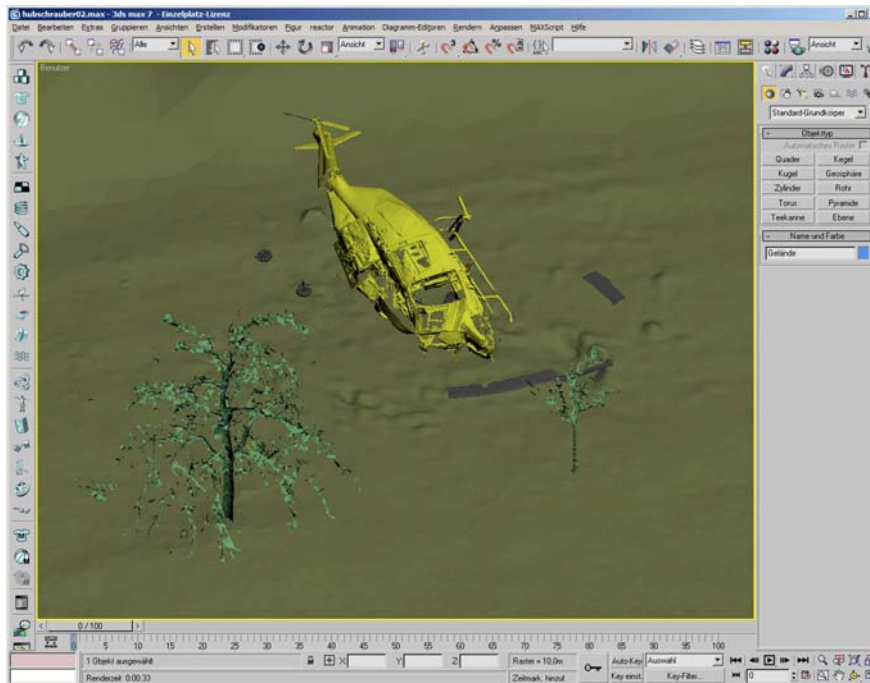
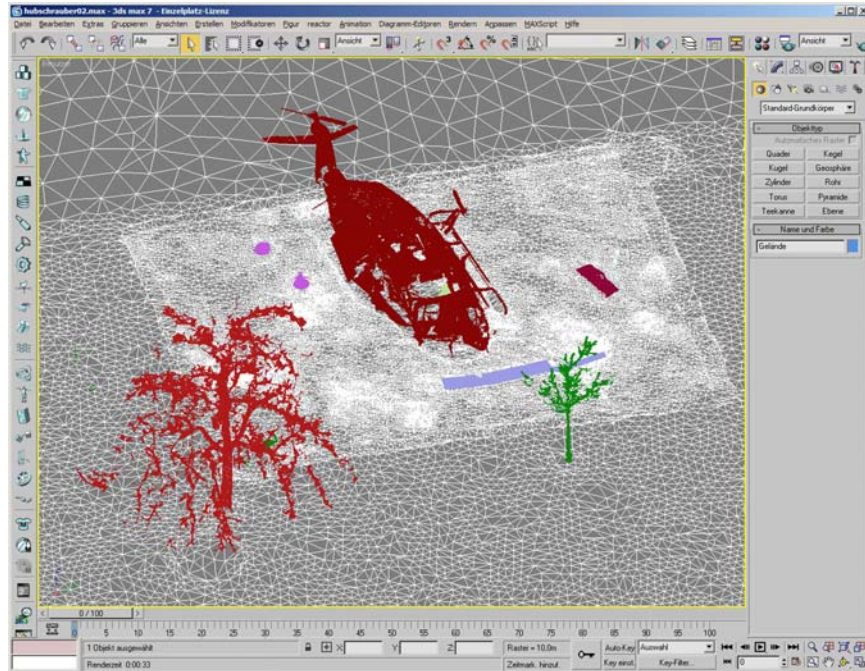
A picture of the accident scene in the Baden Württemberg region of Germany.



Data from the Zoller & Fröhlich 3D terrestrial laser scanner.



The accident scene modeled in Geomagic Studio from more than 50-million scan points.



The polygon models created in Geomagic Studio were brought into 3ds max 3D animation software for further processing and animation.