

Forensic Art Goes High Tech

Florida, like many states has hundreds of unidentified human remains in various locations. Its hard to image but many people go missing every year never to be seen again. When remains are found they can be decomposed to such a point it's impossible to make any visual identification.

The Problem

To create a reconstruction of a face from an existing skull a forensic artist builds up clay over the skull to create a face. By using tissue depth markers at key locations and other techniques the artist builds the face up slowly. The problem with this method is the original skull is used in the process. In addition, only one artist can use the skull at any one time. Once the clay is put on the skull it is photographed and then removed.

The Solution

The Hillsborough County Coroners Office contacted EMS in hopes of recreating a face of an unidentified person using the latest in digital technologies. EMS used their Z Corp Z Scanner Z800 to 3D scan the skull. Once finished, they brought the 3D scan data into SensAble Technologies. SensAble has specific features including virtual tissue depth markers to create a representation of what the person might look like. Because SensAble imitates clay sculpting in a computer it's a natural extension of how an artist works with clay in the physical world.

Once this model is finished, EMS created a full color 3D print of the artist's representation on their Z Corp Z650 3D Printer. This allows for a full size replica of the missing person. In addition, the 3D printer can be used to 3D print the skull with no virtual clay added. This allows other artists to sculpt a face using traditional methods without using the original skull. Using numerous artists allows for a few interpretations of things like the nose, ears, hair and more where they are subject to interpretation.

Another benefit to using digital technology is many of these skulls are in very poor condition and very fragile. 3D Scanning is non-contact so the skull is never touched. Also if pieces of the skull are missing they can be digitally recreated to make a complete model.

Conclusion

When it came time to bring forensic artistry into the next century EMS has all the tools to scan, create and 3D print a virtual facial model. Hopefully this will help in solving some of these cases.

For more information visit www.ems-usa.com



3D Scanning the skull of an unidentified person



Using SensAble to 3D sculpt a face over the 3D scan data of the skull



3D Printed final forensic model created in SensAble Technology