Sci Labs and PDO - Resource Sharing

3-D Scanning – A collaborative process between PDO, AVE and Aero/Thermal

In January 2010, Scientific Test Labs Aero Thermal's ATOS IIe white light scanning system, looking a bit like PIXAR's Wall-E, was badly in need of an update. The technology was at the end of its usable life-cycle. At every point in the process of scanning, it was taking the equipment longer to process data at an ever increasing rate. Malfunctions and glitches were increasing on a daily basis. In the beginning, the ATOS IIe sole purpose was to scan 3D images of Aerodynamic vehicles and modes. As technology and processes became more efficient, requests for 3D scanning increased. Not only were Aero Thermal needs changing, but Product Design Office (PDO), who has been utilizing hand held laser scanners also saw the potential for a more efficient scanner.

Sam Carnacchi, of VML/PDO Scanning & Imaging scanning a Viper intake manifold.

Sam editing scanned data for final processing.

Both departments, Sci Labs and PDO, recognized the opportunity to work together by sharing in the purchase and use of a new scanner. By Sci Labs transferring the ATOS IIe to PDO, PDO was able to purchase a new ATOS III-S system using the old system as a trade-in credit. In May of 2010, PDO received the new ATOS III-S system and it is now shared over two shifts by both Sci Labs Aero Thermal and Product Design Milling and Digitizing.

During the day, the ATOS III-S is scanning competitive vehicles for AVE, 3/8 and full scale clay properties for Aero/Thermal and sub-assemblies for Engineering. At night, the equipment is being used by PDO to scan 3/8 and full scale clay concept model surfaces as well as full scale clay interiors, foam armatures and other accessories such as wheels, tires, badges, grille work, etc. The ATOS III-S is also used for final product quality checks after a vehicle has been manufactured to compare the scans with Engineering and Design data.

With higher resolution, larger and more accurate data files, Chrysler can now participate in an industry-wide data exchange network, saving the company thousands of dollars. PDO has been able to utilize the data produced by the scanners to substantially improve milling efficiencies within the studios. Flash Milling is the new term that references the process where scan data is used directly to balance mill a clay model virtually overnight. Rapid Prototype parts can also be made immediately from scans, and finally this data can be imported directly into software used by the Designers. All of these improvements save days or weeks as compared to previously used methods.

This was a huge cost savings for both departments that allowed work to not only be kept in-house due to the technology and efficiency of the new ATOS III-S but it was an outstanding show of department cooperative teamwork during these budget-restrictive times.

Cliff Kinney, Unit 1 PDO Milling and Digitizing scanning the exterior of a clay model.

Capture 3D