3D Modeling

Automatic processing of 3D models with MOD reduces cost, labor, and time

3D Virtual Environments are essential for monitoring, maintaining, and designing future operations based on 3D model-based interfaces. Currently modeling is a very time-consuming, labor-intensive process. The MOD solution is a system which automatically creates CAD models based on Light Detection and Ranging point cloud, and automates the creation of 3D geometry surfaces and texture maps from aerial and ground scan data. With this technology, facilities benefit from 'as built' models while reducing the cost and time to detect changes and update 3D models.
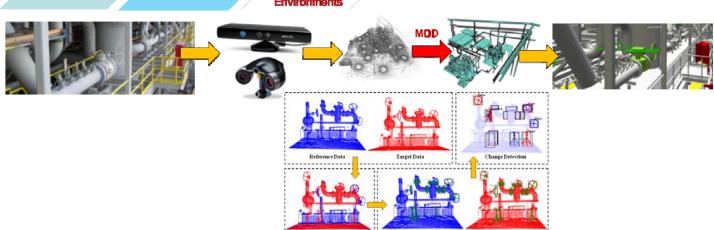
Use MOD for:
- Training and simulation
- Operations monitoring and surveillance (local and remote)
- Hazard analysis and system review
- Design modifications and project execution planning support
  - Extract simple geometry – pipes and planes
  - Construct a Library of Component (LoC) models
  - Recognize Library Components in new scans – the matching technology is an enabling component
  - Assemble pipes, planes, LoC components into new model

About CiSoft

CiSoft's role has been to generate bursts of innovative ideas related to digital oilfields

CiSoft is a University of Southern California-Chevron Center of Excellence for Research and Academic Training on Interactive Smart Oilfield Technologies. Established in December 2003, the Center includes participating research scientists from various departments in the Viterbi School of Engineering and from Chevron. Two important entities associated with the Viterbi School of Engineering, IMSC (Integrated Media Systems Center) and ISI (Information Sciences Institute) are closely associated with CiSoft. Expertise of participating USC faculty includes Petroleum and Chemical Engineering, Computer Science, Electrical Engineering and Industrial and Systems Engineering. Research areas include:

Integrated Asset Management
Well Productivity Improvement
Robotics and Artificial Intelligence
Embedded and Networked Systems
Failure Prediction in Artificial Lift Systems
Reservoir Management
Data Management Tools
Immersive Visualization
Environmental Health & Safety

About USC

University of Southern California is at the forefront of research in information technology and a full spectrum of engineering disciplines. The Viterbi School consistently ranks in the top ten in the U.S. News and World Report rankings. Our highly interdisciplinary research environment has enabled faculty to respond to emerging needs for research in such diverse areas as conventional and renewable energy, imaging, robotics, software engineering, sensor networks, vision sciences, automated construction and photonics. The Viterbi School actively encourages technology transfer and commercialization through industrial partnerships. The university has several high performance computing resources with significant computational capabilities for a variety of computation-intensive projects including subsurface modeling and simulation. Our network spans all over the world and is reputed to be one of the largest, most influential, and loyal.

USC University of Southern California