

T-SCAN^{plus} - FUNCTION OVERVIEW

GENERAL FUNCTIONS:

- Fast surface scanning with variable point distance
- Measuring modes for the scanning of surfaces, contour lines, 3D points, static and dynamic polylines
- Integrated 3D, 2D, and intersection viewer; optional overlay of polygon grid or coordinate axes
- Dynamic or static referencing of tracking system
- Windows XP 64 bit operating system with unlimited multi processor support
- Display of scanner, touchprobe, touchprobe coordinates and field of view of tracking system in 3D viewer
- Automatic data exchange with INSPECT^{plus} software for the simultaneous inspection (online) of single scans (comparison with CAD data by color map display)
- Plugins available for many standard 3D software packages

FILE MANAGEMENT FUNCTIONS:

- Storage of scan data in a compact binary file (TSC, T-SCAN database format)
- Import and export functions for scan data and triangle meshes in various standard formats (IGES, AC, VDA-FS, ASCII, NC-ASCII)

MATCHING AND DATA TRANSFORMATION FUNCTIONS:

- Data transformation (based on transformation file, pre-defined values, online transformation values given by inspection software, and nominal points measured by touchprobe)
- Definition of coordinate system (3 plane alignment, 3-2-1 alignment, import of transformation parameters from inspection software)
- Constraint matching (matching with tolerance settings)
- Group matching (interactive grouping and selection of defined areas for global matching)
- Fast matching algorithm based on gradient technique
- Matching of data records with different resolution and point density
- Display of the matching quality by color map
- Wizard for setup change of Optotrak camera

DATA EDITING FUNCTIONS:

- Smoothing filter for data optimization
- Interactive clipping of scan data
- Optimization of triangle meshes (remove outliers, tolerance-based smoothing, curvature-based decimation, scaling, mirroring)
- Interactive editing of triangle meshes (hole filling, cutting, smoothing, decimating)
- Automatic postprocessing (conversion of scan data to triangle meshes, decimation and optimization in one automatic tolerance-based process)

EXTRACTION OF SECTIONS AND FEATURES:

- Calculation of optimized serial intersections
- Featureline extraction and manipulation
- Nurbs conversion of feature lines

SERVICE FUNCTIONS AND HARDWARE CONTROL; FUNCTIONS FOR IN-FIELD CALIBRATION OF COMPLETE MEASURING SYSTEM:

- System accuracy check
- Hardware control functions for tracking system (initialization, connect to tracking system, read status, activate markers)
- Verification of scanner and touchprobe
- Camera setup and registration for dual camera setup (Certus only)
- Touchprobe calibration

EXTRAS:

- Macro execution for automatization
- Online inspection using direct data transfer to INSPECT^{plus}