Visual Inspect and Visual Inspect AR

Inspection solutions for streamlining manufacturing processes

FARO® Visual Inspect™ Software is a powerful mobile solution to control production processes. It allows for intuitive viewing as well as the use of complex 3D data of parts and assemblies and additional information such as process and workflow details on a mobile device. FARO Visual Inspect AR (Augmented Reality) Software expands the functionality of Visual Inspect and provides innovative augmented reality to the base package.

The Visual Inspect CAD Interface allows operators to convert 3D data into a highly compressed format for optimal data management in Visual Inspect.

This powerful CAD converter is also the basis for the incredibly fast loading of huge data sets. Operators have an intuitive and mobile tool to support and improve efficiency in their production processes.

Key features: Visual Inspect

Intuitive touch functions
The user operates by using simple App gestures. This simplifies the handling of zooming, translating and rotating the 3D data. Even complex multi-step functions are quickly accessible via the context menu, which depends on the currently-selected 3D element.

Measuring
Based on intelligent measuring functions, the user is able to interact with the 3D data to get additional useful details concerning the feature of interest. This information helps the operator to manage tasks more efficiently. Absolute and relative measurements of points, edges and surfaces as well as radii and angles are available and easy to access.

Documentation
The real time creation and addition of annotations such as texts and images in the 3D viewer allows the user to mark errors or add advice for other users. Additionally the operator can define status (unchecked, checked and wrong) for special features.
The annotations and the results of such inspections are collected in protocols (xlsx format) and can be exported for follow-up processes.

Sectioning
Comprehensive functions allow real time or step-by-step sectioning of parts and assemblies. Depending on specific needs, users can choose different section views such as 2D or 3D and filled or unfilled.

QR scan
The user can open the 3D data by scanning a QR code placed on the corresponding part (or assembly). This facilitates and optimizes the workflow because it is not necessary to know the name of the part. This allows a significant efficiency gain, especially in the case of hundreds of parts, which have to be checked.

Embedded image editor
Users can post-process documentation images with sketch elements and texts for detailed issue descriptions.

Model media manager
All media is managed inside the App for easy processing and secure data handling.

Key features: Visual Inspect AR

Augmented reality with markers
With the tablet's integrated camera, an overlay of the as-built object with virtual 3D data, including all process and workflow information, can be realized in real time. The precise match between the virtual and the real world is guaranteed by a simple marker alignment system placed by the user. The markers are then reliably and automatically identified from the App even in poor lighting conditions.

Augmented reality without markers
Connect 3D points on a CAD model with 2D points in one corresponding image to create a precise overlay without markers. This enables an efficient overlay process even in difficult environmental conditions, e.g., when marker placement is not possible because of space limitations or the assembly is very large.

Location and time independent overlay
Operators can take pictures on-site and overlay CAD data and pictures at a later time. Additionally, overlays are saved and can be reproduced anytime and anywhere.

Benefits

Mobility
Availability of complex 3D data and augmented reality in all working environments, independently from time and location.

Cost-effective alternative
The use of the App on the mobile device and FARO software provide a cost-effective alternative to other more expensive augmented reality solutions.

Modular solution
The usage possibilities can be customized to perfectly fit the specific customer needs: From simple viewing to complex augmented reality scenarios – everything is possible by choosing the appropriate package.

Ease of use
Modern data handling concepts, touch functionalities and context-related functions allow intuitive control of the system.

Version comparison

Capability Comparison	Visual Inspect	Visual Inspect AR
Touch functionalities	✓	✓
Measuring	✓	✓
Sectioning	✓	✓
Documentation	✓	✓
QR scan	✓	✓
Embedded image editor	✓	✓
Model media manager	✓	✓
Augmented reality with markers		✓
Augmented reality without markers		✓
Location and time independent overlay		✓

Specifications

Visual Inspect and Visual Inspect AR
Minimum requirements
Hardware: Visual Inspect Mobile Device
Software: Visual Inspect Mobile Application

Interfaces
Input: Encrypted proprietary format (mwpak)
Output: Encrypted proprietary format (mwpak)
Raw data reports (this allows users to post-process collected data)
Excel spreadsheets
Documentary images

Visual Inspect CAD Translator
Minimum requirements
Hardware: Intel Core i5 Processor
256 GB Hard Drive
OpenGL capable graphic card
4 GB RAM
Software: Windows 7, 64 bit system

Data
Input: 3DXML, ACIS, native CATIA, IGES, Inventor, JT 8.x and 9.x, NX, Parasolid, Pro^E / Creo, Solid Edge, SolidWorks, ST^{E}P, STL, VDA-F^S, XCGM
Output: mwpak

Applications
- Inspection of Parts, Dies and Molds
- CAD-to-Part Comparison
- Component Alignment & Assembly
- Incoming Goods Inspection / Quality Assurance
- Installation / Construction Space Testing
- 3D Documentation and Inspection of Technical Building Equipment
- Virtual Part Validation

Industries
- Automotive
- Aerospace
- Shipbuilding
- Manufacturing
- Mold, Tooling and Die
- Heavy Machinery
- White Goods

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