3D Visualization: Making the life of a maintenance technician easier

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LEARNING POINTS

- Understand the business value of visualization
- Get an overview of SAP’s visualization solution
- Get informed about use cases and experience a demo
- Understand the applicability for enterprise asset management
- Get informed about the roadmap and vision for visualization within the context of SAP EAM
孔子
551 – 479 BC

Late 20th century
The brain finds it easier to process information if it is presented as an image rather than as words or numbers.

“A PICTURE IS WORTH MORE THAN A THOUSAND WORDS”
Use cases Visual Enterprise for SAP EAM

- Spare parts selection
- Work instructions
- Documents in order / PM task list
Logic how to find Visual Enterprise documents:

Search on operation level (Inspection Round functionality is switched on)

- Individual document is existing
- Assembly is populated
- Equipment / Serial Number
- Construction Type of Equipment
- Functional Location
- Construction Type of Functional Location

Follow the same logic on header level

Assignments of spare parts documents for the following objects:

- Functional Location
- Equipment
- Material
- Task list Header / Operation
- Maintenance order header / operation
SELECTION OF SPARE PARTS VIA WEB UI IN SAP PM ORDER
VISUAL WORK INSTRUCTIONS IN WEB UI FOR PM ORDER
How does it work?
3D VISUALIZATION THROUGHOUT THE ENTERPRISE

Visual Analytics

Engineering

Manufacturing

Visual Service & Support

Visual Manufacturing

Sales & Marketing

Service & Support

Business Suite

Visual Engineering

Visual Sales & Marketing

Visual Maintenance

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3D VISUALIZATION INTEGRATION

SAP Business Suite

EAM Processes
- Plan and design
- Procure and build
- Commission
- Operate
- Maintain

SAP 3D Visual Enterprise - Components:

- Generator
  - Automation
- Author
  - Manual
- Viewer
  - Interactive

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WORKFLOW

Product development
Manufacturing

Asset management / maintenance operations

SAP PLM  Visual Enterprise Generator  SAP DMS  Visual Enterprise Author  Visual Enterprise Author  SAP DMS  SAP EAM

Vault  Generate  Access  Author  Publish  Manage  View

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Included in the SDK

- API, which is called "DVL" (Dynamic Visualization Library).
- API Reference with classes and methods documentation in Doxygen format.
- Quick start guides for Android, iOS and Windows to help you get started.

The SAP 3D Visual Enterprise applications Software Development Kit (SDK) enables the development of interactive mobile and desktop 3D applications.

April 2013 Release to SAP Partners and Customers via Developer Center on SCN
Integration with SAP EAM backend
Display Spare Parts Catalogue Starting at Technical Objects
Short Description

VE Viewer CHIP to show attached RH-files of an object

Benefit

• Immediate visual 3D knowledge of an object with viewer functionality

Usage

• Equipment, Functional Locations, Notification, Order, Task List
Integration with SAP EAM backend
Side Panel: 3D Visual Enterprise – Thumbnail

Short Description
VE Viewer Thumbnail CHIP to show attached RH-files of an object

Benefit
• Immediate visual animated 3D knowledge of an object

Usage
• Equipment, Functional Locations, Notification, Order, Task List
Roadmap - Timeline
Integration of SAP 3D Visual Enterprise with SAP EAM

Identified processes which we plan to support in SAP GUI as well as in WEB UI:
- **Spare parts selection**
- **Visual work instructions**

**Availability:**
SAP 3D Visual Enterprise integrated with SAP EAM using Web UI:
- EHP 6 SP05 (available)

SAP 3D Visual Enterprise integrated with SAP EAM using SAP GUI:
- EHP 6 SP07 (planned)
- EHP 5 SP10 (planned)
- EHP 7 (planned)
The Cloud / Mobility
SAP Mobile Documents Integration

Benefits

• Distribute (.VDS) Files to the Cloud
• Easily Access Documents in the Cloud
• Open (.VDS) Files in SAP 3D Visual Enterprise Viewer”
SAP 3D Visual Enterprise Viewer
Interactive 2D CGM Support – planned for Q4/2013

Key Benefits
• Connecting 2D Graphics to SAP Business Data
• CGM is an Open International Standard File Format for 2D
• Acceptance of CGM across SAP EAM Verticals & International Industry Standards such as the Commercial Airlines, Auto and Trucking, Aerospace & DOD, Railroad Industry, Petroleum Industry
SAP 3D Visual Enterprise Viewer
On Device Analytics (Query & Painting) – planned for Q2/2013

Key Benefits

- Enable SAP Visual Enterprise Spatial Analytics Applications on Mobile Devices
- Ability to run query's via API, or via Steps or Model Views
- Ability to Paint 3D Objects (Assemblies & Parts) via API
Mobile Asset Management
Integration into SAP Work Manager – Launch Work Instructions

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Mobile Asset Management
Integration into SAP Work Manager – Reserve Parts via Spare Parts Catalog

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VISION: FULLY ENABLED 2D/3D AND ANALYTICS ON A MOBILE DEVICE

- Manufacturing
- Sales & Marketing
- Asset Management & Service
- Mobility

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VISION: FULLY ENABLED 2D/3D AND ANALYTICS ON A MOBILE DEVICE

The Visual Enterprise incl. spatial enablement
Business data consistency
Embedded analytics
Mobility


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• Need to record maintenance knowledge in 3D form?
• Deal with 2D, 3D, paper drawings, supplier information?
• Give contractors visual instructions
• Exchange 3D visual PDF with suppliers and others?
• Mobile visual support whereever it make sense?
• Spare parts selection in a visual manner?
• Dealing with linear assets / spatial data?
• KPI’s on EAM to be able to optimize physical asset?
• Bridge media disconnect through visual guided simple UIs
• Condition monitoring via 3D visualization?
SAP ENTERPRISE ASSET MANAGEMENT
AREAS OF INVESTMENT

- Mobility
- Visualization and usability
- Today and the future
- TCO
- Functionality
- Analytics
- Real-world integration

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The user interface of the future for the maintenance worker will be visual, analytical, interactive and mobile where it make sense.

Engineering data will help to build dedicated 3D asset management information for systems used by owner and operators.

Visualization can help you raise efficiency, quality, and accuracy while lowering risk, and increase performance.

The future is about role-based and asset-centric cockpits that are the asset manager's window into reality.
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