AVEVA™ Point Cloud Manager (PCM) and Intelligent Cloud-Based Streaming to AIM/E3D

Martin Kerfoot
Agenda

Laser Scanning Background & Benefits
AVEVA™ Point Cloud Manager Solution
Using Reality Capture for Brownfield Projects
The Value of Using Cloud Solutions
Integration with AVEVA™ Unified Engineering and AVEVA™ Asset Information Management
Roadmap
Intelligent Point Cloud using Artificial Intelligence
Why do we Laser Scan?

• As assets age, differences develop between as-designed, as-built and as-operated data.
  - This makes maintenance, safe operation, and management of the asset increasingly difficult.

• Undiscovered differences lead to wide-ranging consequences.
  - In brownfield CAPEX or time-critical turnaround projects, poor decision making due to inaccurate information results in higher costs or lost revenue.

• Higher re-work costs and unforeseen schedule extensions on revamp projects
  - 5%-7% rework on average, up to 15% of project costs, ENR

• Laser Scans provide an opportunity to safely visualize and validate our work/decisions early in the planning or design stage.
Efficiency Improvements

- Reduce Site Visits
- Improve Sustainability
- Virtually Review Work Packs
- Improved Information Confidence
- Remote Scoping
- Reduce Hazard Exposure/ Hazard Identification
- Improved Work Pack Preparation
- Clash-Free Design
# AVEVA™ Point Cloud Manager – Strategic Themes

## Open and Flexible
- **Reality Data Capture**
  - Numerous Hardware Partners
  - Industry Standard Exchange
- **3D Design & Review**
  - E3D Design, Unified Engineering, 3D Visualisation, Third-parties

## Scalable and Secure
- **Ease of Deployments**
  - 9 Regions
  - Multitenant Browser Upload
- **Scale of Deployments**
  - ‘000s of Laser Scans
  - ‘000s Tb Storage
- **Managing Deployments**
  - Self-managed
  - Create on-demand
  - Included in Cloud Subscription

## Asset Visualization
- **Visual Consumption**
  - BubbleView™ Imagery
  - 3D Model Overlay
  - 3D Point Cloud Walkthrough
- **Ease of Use**
  - Simple Browser UI
  - Project Access Management
  - Photorealistic Imagery
- **Integrations**
  - AIM Advanced, AIM Hybrid
  - Sharelink URLs

## Brownfield Engineering
- **Engineering Tools**
  - Measure: Diameter, Distance, Area, Deviation etc.
- **Cloud Compatible**
  - Work with Cloud Stored Data
  - Single Source of Truth
- **Analyze**
  - Clash Detection, Review & Management
Integrating with a Brownfield Digital Project

AVEVA™ Point Cloud Manager
- Maximize value of existing laser data
- Rapid creation of a 3D Digital Twin

AVEVA™ Asset Information Management
- Integrate silos of 1D, 2D, and 3D information
- Assess quality of data vs information standard

AVEVA™ Unified Engineering
- Take control and manage engineering data for life of facility
- Cloud based, data centric solution

Visualize & Manage
Integrate & Understand
Create & Develop
Cloud Value

- 8x quicker than on-premise
- Multiple projects processed in parallel
- Significantly shortens delivery time
- Standardization of deliverables

AVEVA™ Point Cloud Manager Connect

Administration ➔ Resource Production ➔ Automated Deployment ➔ Managed Cloud Storage

Artificial Intelligence

On-premise Streaming & Download

AVEVA Cloud Services

Unified Engineering

PCM Viewer

E3D Design

PCM Desktop
Integration with AVEVA™ Unified Engineering & AVEVA™ Asset Information Management

- Efficient 3D Modeling for Brownfield Assets
- Reduce Hazard Exposure & Enable Remote Scoping
- Integrate with Engineering & Design Information
- Deliver Faster & Handover using Cloud Services

Engineering & Information Management:
- Site Familiarization, Clash Detection
- Visualization, Familiarization, Collaboration,

Laser scan and 3D model of Toros Tarim Samsun Fertilizer plant. Image courtesy of Tekfen Engineering

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AVEVA™ Point Cloud Manager – Customer Quotes

**EFFICIENCY**

“AVEVA PCM on AVEVA Connect can help us to save almost **14,000 hours** on our 400 modification projects per year”
- Global EPC

**ACCURACY**

“Construction times cut by **25%** through using laser scanning to ensure **accurate retrofit**”
- BLOM Maritime

**FLEXIBILITY**

“With several **hundred TBs** of data our infrastructure is reaching its capacity limits. AVEVA PCM removes this challenge with its **unlimited scale**”
- Global Chemical Company
Multi Generation Plan – AVEVA™ Point Cloud Manager

**Today (Delivered)**
- Cloud Production & Deployment Service
- Cloud Hosting & Management
- Cloud Visualisation
- Engineering & Operations Integrations
- Intelligent Pointcloud (Research)
  - AI Object Classification
  - AI Object Instancing
  - AI Object Tagging

**Tomorrow**
- New Project Configuration & Control
- Artificial Intelligence - Intelligent Pointcloud Archiving & Management

**Future**
- Support AVEVA 3D Visualisation & Common Visualization Service
- Reality Capture Lifecycle Management

**Core Strategic Themes**
- Improved Reality Capture management, maintenance, and visualisation using *Intelligent point cloud* technology
- Continue to apply new development and technology at scale to support enterprise deployments
- Adapt to new reality capture methods to support Engineering & Operations use cases
- Improved interoperability/integrations with AVEVA products for Digital Twin delivery
- Flexible and Agnostic to reality capture inputs & outputs
“Only 3D laser scanning with virtual engineering capabilities can ensure efficient and secure module assembly by allowing as-built modelling of the different components, wherever they are being created in the world.”

Marius Blom,
CEO, BLOM Maritime
Questions?
Please wait for the microphone.
State your name and company.

Please remember to...
Navigate to this session in the mobile app to complete the survey.
Visit our 3D Visualization booth
Watch the next sessions in the Engineering User track

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