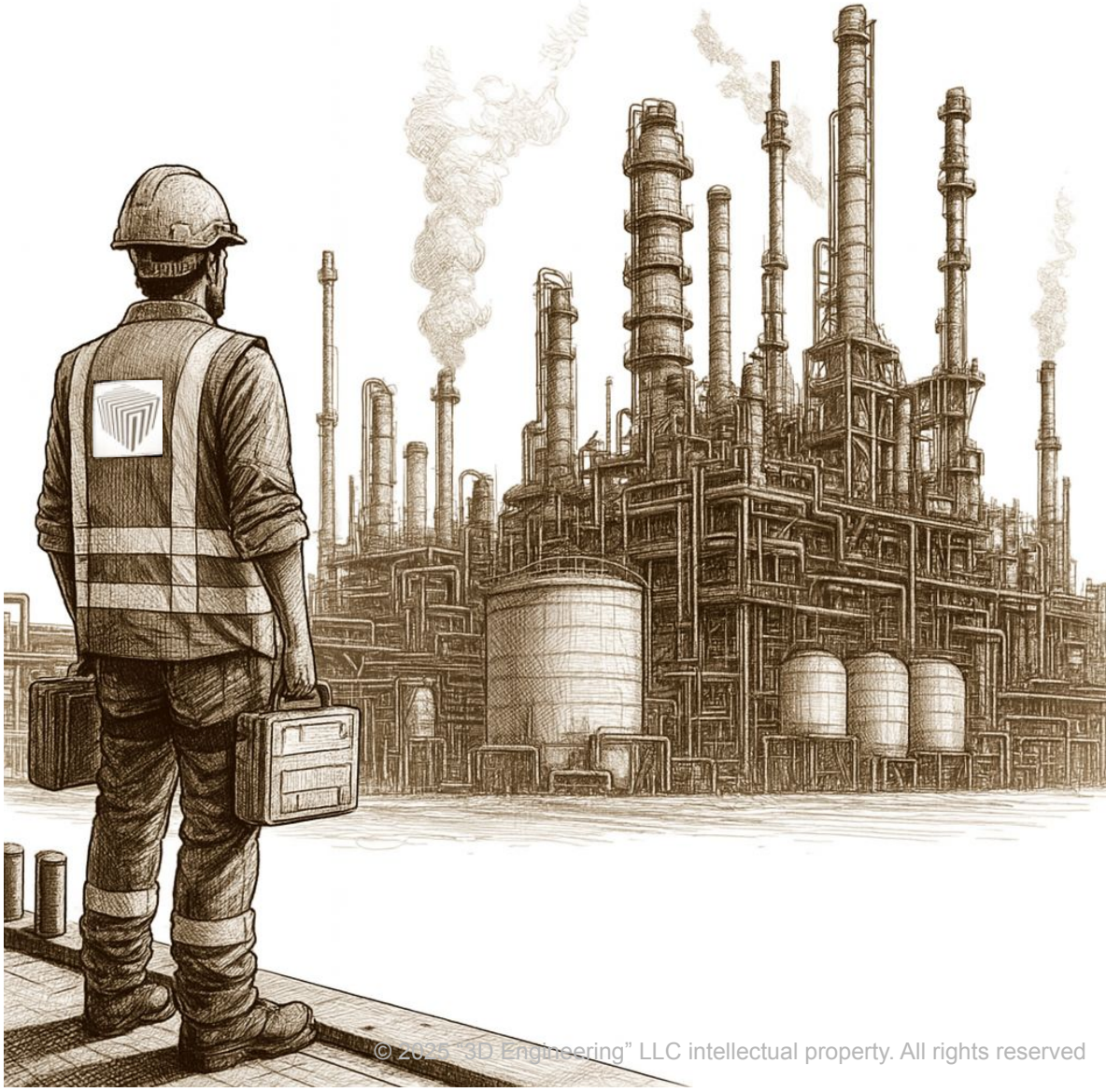
3D
ENGINEERING

DIGITAL TWIN SERVICES
FOR OIL & GAS ASSET MANAGEMENT



by Reinis Točelovskis
CEO & Co-Founder

bp Trusted British Petroleum partner for Digital Twin solutions

Introduction

3D Engineering is a trusted British Petroleum partner and a regional leader in digital twin solutions, delivering cutting-edge 3D laser scanning and intelligent modeling for complex industrial assets.

TOP 3 PROBLEMS

1. **Aging Infrastructure and Maintenance Challenges**
   Equipment and pipelines often have long lifespans, leading to increased risks of failures, unplanned shutdowns, and costly maintenance.

2. **Data Silos and Inaccurate Asset Information**
   Critical asset data is frequently spread across multiple platforms (paper, CAD, ERP, etc.), causing inconsistencies and slowing down decision-making.

3. **Operational Downtime and Production Losses**
   Unplanned equipment failures, insufficient predictive maintenance, or poor asset tracking can lead to significant production halts and financial losses.

Source: https://aelumconsulting.com/blogs/how-to-manage-asset-management-in-oil-and-gas/

SOLUTION

1. **Unified Data and Accurate Asset Models**
   A single, centralized 3D model integrates all engineering, operational, and maintenance data, eliminating silos and ensuring accurate decision-making.

2. **Real-Time Visibility and Predictive Maintenance**
   Digital twins provide live data from IoT sensors and predictive analytics, reducing unplanned downtime and extending the life of aging equipment.

3. **Faster Engineering, Upgrades and Cost Reduction**
   Digital twins enable precise planning and virtual testing of modifications or expansions, significantly reducing project time, rework, and associated costs.

Source: https://www.attinc.com/news/digital-twin-oil-and-gas/

SCOPE OF SERVICES

Full 3D laser scanning of asset and creation of an intelligent 3D model compatible with clients engineering systems

3D Laser Scanning & Intelligent 3D Modeling

Laser scanning: with Leica RTC360
Deliverables: Point Cloud

3D modeling: with **AVEVA, Hexagon or Autodesk environments**
Deliverables: Intelligent 3D model (1D, 2D, 3D)

Document Review: xECM for Engineering
Deliverables: Version review and standards

DELIVERABLES

3D Laser Scanning & Reality Capture data

Provide geospatial control networks, and high-fidelity reality capture workflows, ensuring accurate digital representation of physical assets and seamless integration with engineering platforms.

Phase 1: Pre-Planning
Phase 2: Control Network Setup
Phase 3: Field works
Phase 4: Post processing

Deliverables:
Point cloud & Reality capture data

DELIVERABLES

Intelligent 3D model (1D, 2D, 3D)

Intelligent 3D modeling workflow with embedded engineering data, ensuring accurate digital asset representation, full tagging and metadata hierarchy, and seamless integration with clients design, maintenance, and engineering platforms.

Phase 1: Pilot zone
Phase 2: Tank farms + utility corridors
Phase 3: Main processing areas
Phase 4: Remaining infrastructure + QA

Deliverables:
Intelligent 3D model for HxGN SDx

DELIVERABLES

Integration of the data

Integrated solution: Provide end-to-end project planning and execution using advanced engineering tools and visualization.

Features:

- 3D model combined with laser scan data and reality capture data gives full pictures of the site
- 3D model contains tags to every linked document that makes it easy to find and navigate

Deliverables: Integrated intelligent 3D model and reality capture data

BENEFITS

High Quality

We always use only high end equipment in the field

Timely delivery

Every scope of work is accurately calculated based on experience

Competitive pricing

Strategic locations of our teams leads to the best prices

REDEFINING ASSET DATA MANAGEMENT

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