Advancing Point Clouds for VR and Beyond

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Elysium Inc.
Danielle (Williams) Perelli  
**Customer Engagement Lead - Elysium Inc.**

- Manage customer engagements to address Data Migration, Multi-CAD Interoperability/Collaboration, Data Quality Management, Data Optimization, and Validation
- Manage Sales Team at Elysium US
- Collaborate with technical team members, development, and Elysium offices globally on product enhancement, global marketing, and to support customer engagements
Specialized + dedicated technologies with a global reach

- Over 30 years of CAD Expertise
- Strong partnerships with CAD Vendors
- 3D Data Expertise
  - Translation
  - Geometry Healing
  - Quality Management
  - Validation
  - Simplification
  - Reverse Engineering/ Point Cloud Rendering
- “Off-the-Shelf” Software, Development Projects & Migration Services
ELYSIUM has over 2800 customers around the world with a strong position in the manufacturing industry.
What is InfiPoints?

• **A large scale point cloud handling tool** developed by Elysium for various industries/fields

  - Shipbuilding
  - Plant
  - Manufacturing
  - Construction
  - Architecture
  - Aerospace
  - Automotive

• Comprehensive Software to Facilitate the **Entire Process of Point Cloud Utilization**

  - Data Import
  - Data Pre-Processing
  - 3D Simulation
  - 3D Modeling
  - Collaborative Outputs

  - **Software A**
  - Export
  - **Software B**
  - Export
  - **Software C**
  - Export
  - **Software D**
  - Export
  - **Software E**
  - Export

InfiPoints
InfiPoints Concept-Easier Utilization of Point Cloud

- **Reducing Time for Data Preparation**
  - Dramatically reduce time and labor to prepare data for utilization by easily register multiple scans from a laser scanner and performing powerful noise reduction

- **Smoothly Work in a Large Scale Environment**
  - Billions of points will not stop you from smoothly handling your point clouds
  - Dramatically reduce time and labor of modeling by using plane/cylinder automatic extraction and tools

- **Average of 50% time reduction for InfiPoints customers**
InfiPoints supports your one-stop point cloud utilization in the following 5 processes:

1. Data Import
2. Data Pre-processing
3. Modeling
4. Analysis
5. Collaborative Outputs
Data Import

- Import multiple scan data formats including native scanner data
- Viewing of large scale point clouds (billions of points)
Data Pre-processing

- Markerless Automatic Registration
  - XML Report
- Target Recognition, Coordinate Transformation
- GeoReferencing
- Automatic Noise Reduction
Automatic Markerless Registration
Modeling

- Pipes
- Equipment
- Steel Structures
- Duct Modeling
- Mesh Creation
Pipe Modeling

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Duct Modeling

- Added duct exclusive modeling function utilizing automatically extracted planes
Analysis

• Measurements using extracted planes/cylinders
• Real-time interference check along path and with interaction
• Comparison between CAD and Point Cloud
Real-time Interference Check

- Path creation, movement of CAD model along the path and performance of real-time interference checking
- Save your CAD model path movement as a movie as well
Collaborative Outputs

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- Fly-through Movie
- Export Ortho Images
- Export Viewer File
- External Links
Point Cloud Web Viewer

Access the server from the client (PC, tablet, smartphone, etc.) and lightly view your point cloud data

- Access an URL in a web browser to view your point cloud
- Software installation is unnecessary on the client side
Customer Case Studies

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- **BC Engineering and Design**
  - Engineering services case
  - Model creation from 400 hours down to 19 minutes with auto-extraction

- **Tonets Corporation**
  - BIM case
  - Utilizing automatic feature extraction, Rebro connection, and IFC export option to other BIM software
    - 2 month process down to 14 days

- **Matsue College**
  - Silver mine investigation
  - Utilized automatic noise reduction and ground extraction
Customer Case Studies

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• Shinko Plantech
  • Avoid rework by virtually checking for interferences for construction maintenance
  • Utilizing automatic feature extraction, polygons, and collision detection, were able to avoid 30 areas that would have caused interference

• JFE Plant Engineering
  • Looking at the inclination of their plants after earthquakes for maintenance
  • Utilizing automatic noise reduction, measurement capabilities, and CAD to Point Cloud validation
    – Saved time, reduced human danger, increased measurement capabilities
Oculus Rift
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Supporting Formats

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Main Package

Options

Options

*1 ENF: Elysium Neutral Format

**Supporting Formats**

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