Synopsys Simpleware
From 3D Image to Mesh
Simulia Germany Conference, Hanau

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Synopsys Today: From Silicon to Software

- **FY18 Revenue:** ~$3B*
- **Employees:** >13,030
- **Patents:** 2,189
- **Years:** 30+

* Note: Q4’18 guidance midpoint provided August 22, 2018

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- #1 electronic design automation tools & services
- Broadest IP portfolio and #1 interface, analog, embedded memories & physical IP
- ‘Leader’ in Gartner’s Magic Quadrant for application security testing
Simpleware Product Group

- Developers of high-end 3D image processing software
- Dedicated Sales, Support and Service teams
- Global presence
- Customer base in life sciences, materials and manufacturing applications
Customer Applications

Life Sciences

Manufacturing & Materials
Applications in Life Sciences / Product Integration

- Implants
- Drug Delivery
- Surgical Guides
- Brain Stimulation
- Protective Gear
- Wearable Electronics
- Consumer Products
- Shoes / Clothing
Example: Human Head Model
Why Simpleware for Medical/Clinical?

**Example:** Cut down on intra-operative time and improve clinical outcomes, based on pre-operative scans (e.g. CT, MRI).

- Take pre-operative virtual measurements
- Carry out virtual planning e.g. resect bone, virtually check fit of implant or stent within artery
- 3D Print – e.g. for difficult cases- obtain a physical model of femur or aorta for pre-surgical planning/training
Applications in Materials & Manufacturing

- Foams
- Filters
- Metals
- Composites
- Soils
- Asphalt
- Reverse Engineering
- Part Inspection, NDE/NDT
- ALM / 3D Printing
Example: Engine Manifold
Why Simpleware for Materials & Manufacturing?

Industrial Reverse Engineering Example:
Inspect and validate as-built parts and compare to designs

• Take scans of a manufactured part, e.g. casting, ALM, injection moulding…

• Non destructive 3D visualisation, e.g. to quantify defects

• Carry out geometric metrology, measurements, compare to original CAD

• Facilitate simulation on as built or damaged part to check still fit for purpose
Why Simpleware for Materials & Manufacturing?

**Materials Industry Example:**
Understand or improve performance of a microstructure, e.g. filter, foam, composite, textile, soil, asphalt…

- Visualise internal structure from scans or synthetic data
- Calculate porosity, surface area, pore/particle distribution, fibre orientation…
- Analyse network structures, e.g. centrelines, shortest routes…
- Obtain homogenised material properties, e.g. effective permeability, Young’s Modulus…
Example: Rock Core
Simpleware Products Overview

Simpleware Software

Simpleware Human Body Models

Simpleware Services
Simpleware Software Solutions

GUI-based high-end 3D image processing platform which provides comprehensive range of tools for:

• Visualization including animation 3D data
• Filtering and segmentation
• Measurement and quantification
• CAD and image integration
• 3D print, CAD and simulation model generation
Simpleware Software Solutions

3D Image Import & Visualization
Segmentation & Processing
Measurements & Analysis
CAD & Image Integration
Model Generation
Simpleware Software Solutions

3D Image Import & Visualization

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3D Image Import & Visualization
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Model Generation

Shortest distance: 162.394mm
Simpleware Software Solutions

3D Image Import & Visualization
Segmentation & Processing
Measurements & Analysis
CAD & Image Integration
Model Generation
Simpleware Software Solutions

- 3D Image Import & Visualization
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See and Try Simpleware Software
See and Try Simpleware Software

• Get a 30-day free trial
  – Receive a fully functional trial version of the full Simpleware product suite
  – Sign up to the Synopsys Eval Portal: https://eval.synopsys.com/
  – Contact support with any questions, for advice or help in setting up your workflow

• Visit our workshops, webinars and exhibitions booths
  – See our list of upcoming events: www.synopsys.com/simpleware/news-and-events/events.html

• Arrange a personal software demonstration
  – Get in touch with us to arrange a personalized software demonstration via WebEx with one of our expert Application Engineers using your own data

• Contact us
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Thank You

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