



***VPS-MICRO[®] Software –
Providing Solutions &
Generating Value***

What makes VPS-MICRO Unique

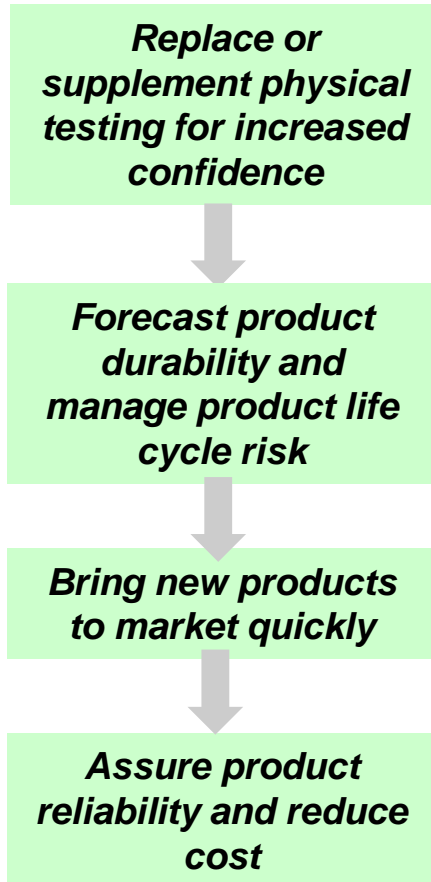
- Simulates fatigue at the microstructural level, where damage occurs
- Captures the variability of material processing, manufacturing, and in-service conditions probabilistically
- Flexible computational architecture allows usage of multiple material models

Get answers in minutes, not months or years.

Do lots of trade-off-studies, sensitivity analysis, virtual DOE's.

**Optimize material choices/designs, optimize structural designs,
optimize inspection and maintenance schedules.**

VPS-MICRO Value Proposition



- Our software and support services have generated superior results for our clients:
 - 75% decrease in product development time
 - 90% decrease in testing and design costs
- VPS-MICRO is the advanced ICME tool that addresses fatigue and allows manufacturers to more accurately identify and gauge potential liabilities.
- VPS-MICRO uses physics to predict the uncertainty and scatter in material fatigue performance to cost effectively manage risk.
- By running as many simulations as desired, the user can optimize resources to create data required for testing and design.

Used by Leading Companies in Multiple Industries



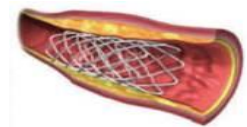
Aerospace & Defense



Automotive & Transportation



Industrial Equipment



Medical Implants

VPS-MICRO Annual Subscription Model

- Annual Subscription for software license and support:
 - Floating license, unlimited users, single project at any given time
 - Three-year term
 - Access to VEXTEC materials library
 - Quarterly billing
 - Complete user training for two users--training process will also “validate” methodology, as training will result in a specific alloy addition to the materials library and the ability for VEXTEC to address almost all potential use cases
 - VEXTEC ensures that our customer is fully supported in its use and implementation of VPS-MICRO

“We succeed, when you succeed!”

Demonstrated ROI



Industry
Aerospace

Client Type
**Airline
(American)**

Project Description

- Simulated lubrication changes & identified fix
- FAA approved
- \$4M/year saved on bearings



Automotive

**Engine Maker
(Cummins)**

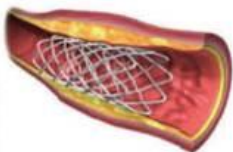
- Simulated 150 designs & identified top 3
- \$5M saved on engine block development program



**Industrial
Equipment**

Manufacturing

- Forecast maintenance schedule based on current usage
- \$3M saved in reducing manufacturing line downtime

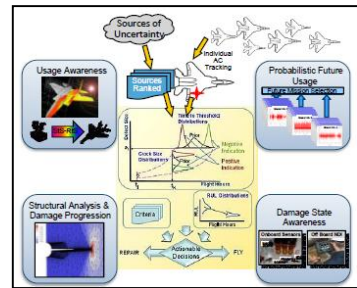


Healthcare

**Medical
Devices
(Boston
Scientific)**

- Evaluated material suppliers for different markets
- Avoided expensive developmental test program

Demonstrated Success in Various Applications

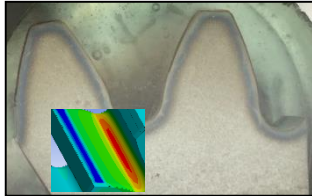


Application
Computational Framework

Client Type
Defense, Medical Device

Application and Client Benefit

- Develop a multi-physics, multi-disciplinary ecosystem for realistic digital simulation
- Accurately track performance of assets and predict optimum maintenance / repair schedule



New Product Development

Automotive, Engine Maker (Cummins)

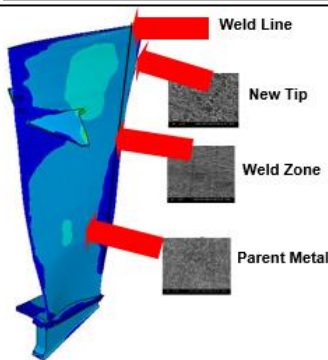
- Simulate multiple designs and variable loads for hundreds of material variations
- Down select a finite number of feasible candidate designs



Second Source

Medical Device (BSC), Oil & Gas, Automotive

- Compare low cost easily available candidate with current premium option
- Strategic substitution to generate positive financial impact



Repair Engineering

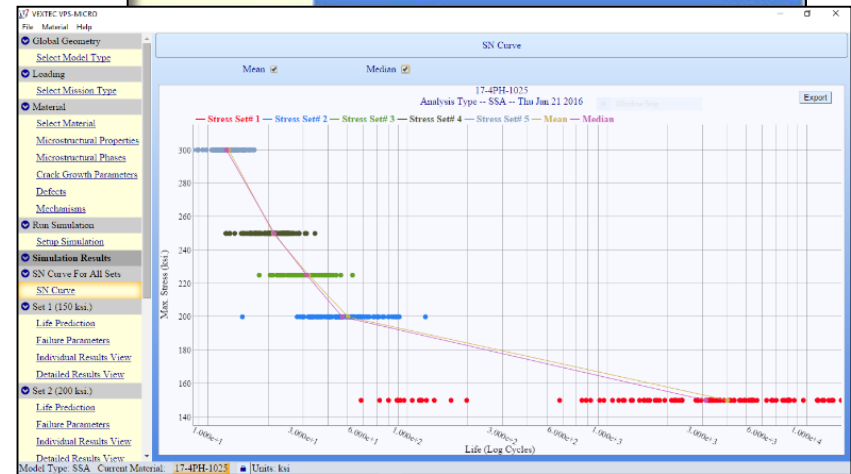
Aerospace, Energy, Automotive

- Demonstrate that repaired components are equivalent to new
- Significant cost savings achieved by using repair and remanufacturing

Software: VPS-MICRO

Simulated Fatigue Tests

- Windows desktop tool
- Wide range of applications
 - Stand-alone tool for simple specimen geometry models
 - Integrate FEA models for complex geometry of full-scale components
- Output
 - Simulated S-N Curve
 - Virtual fracture surface
 - Detailed statistical analysis
- Customizable Software Product
 - Interface with Standard FEA software
 - Predict risk of failure from complex in-service loading spectrums



Simulated S-N Curve

Software Partners



Thank you