

Part of
Sandvik Group

Leverage CAD & PLM to Make Efficiency Gains Across Engineering

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Solutions for Product Development, DFM, and Continuous Improvement

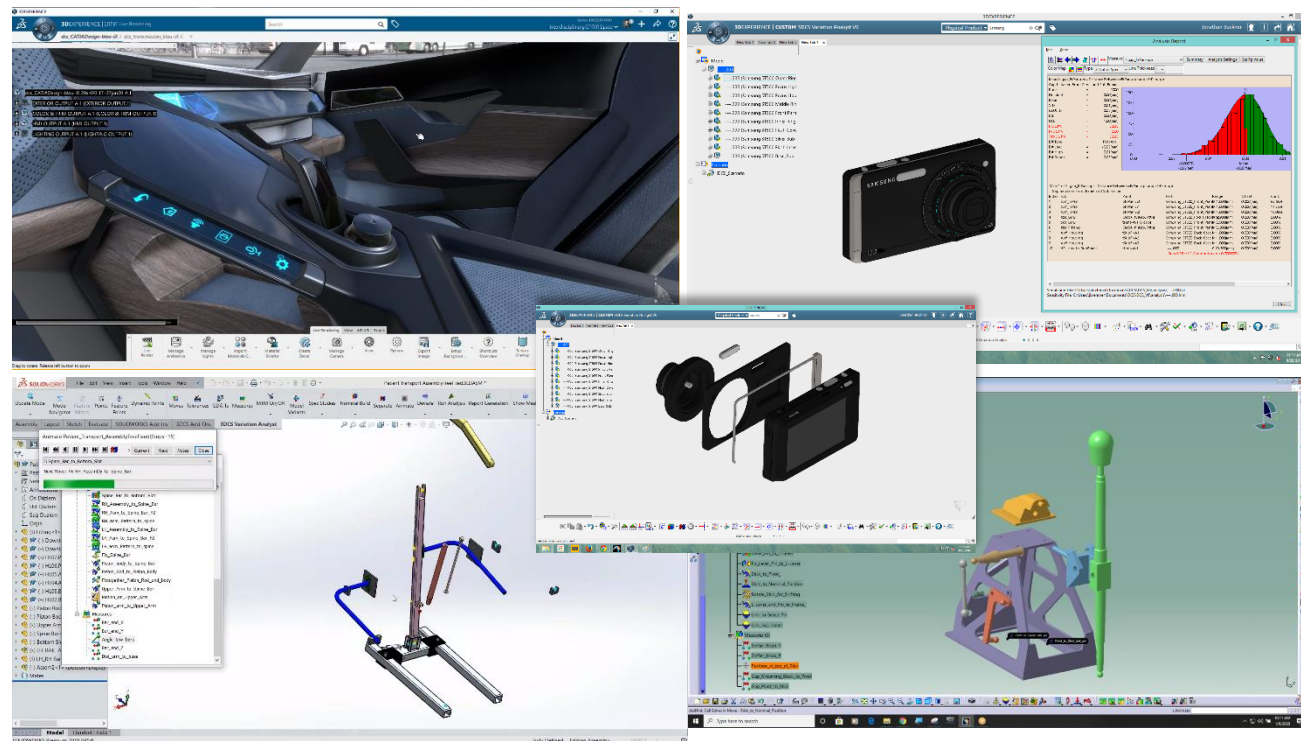


CAD Integrated Tolerance Analysis Software



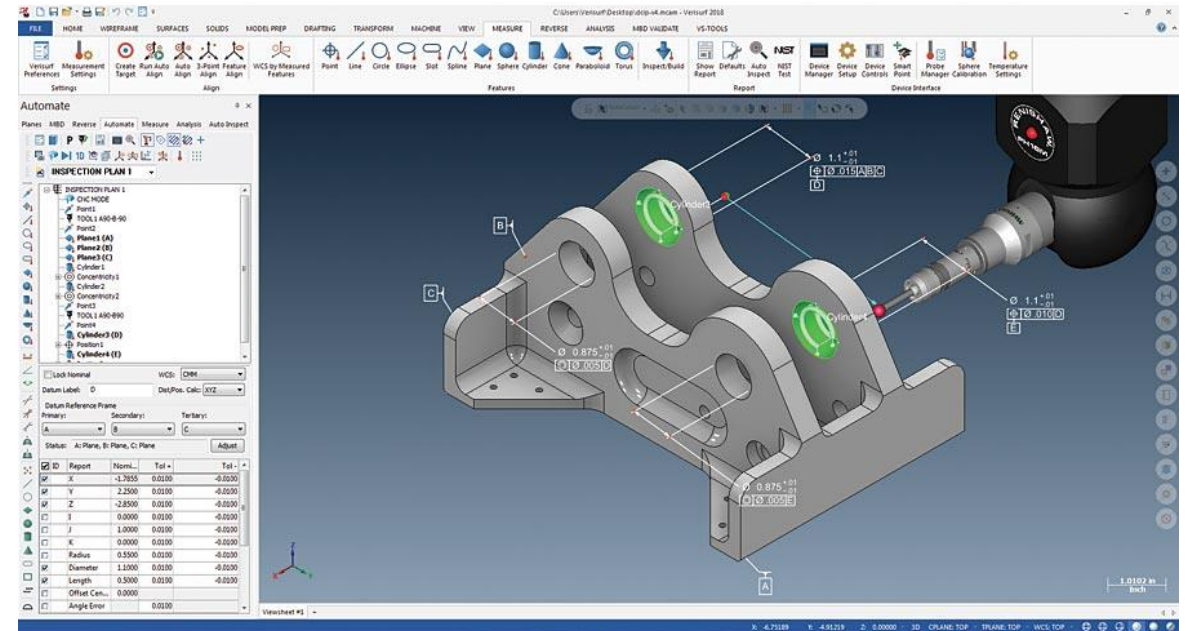
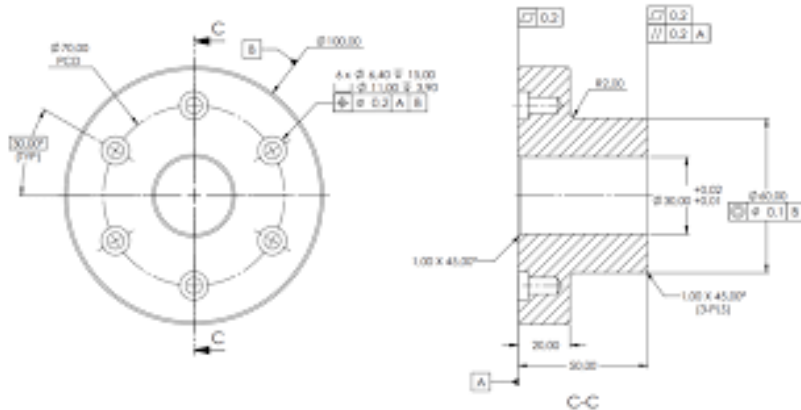
Quality Management System & SPC Platform

Device Agnostic – Any Inspection Device | CAD Connected | Cloud or On-Premise

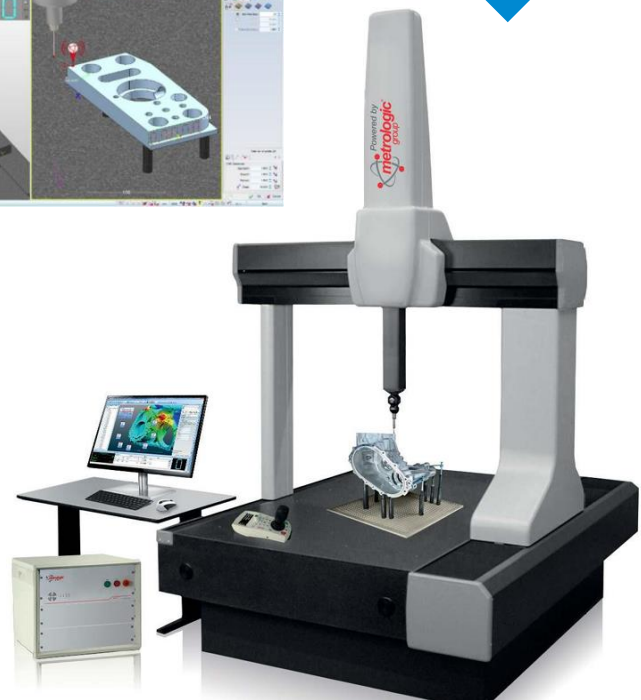
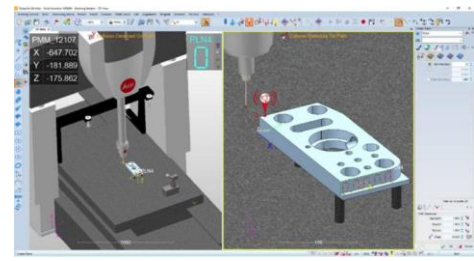
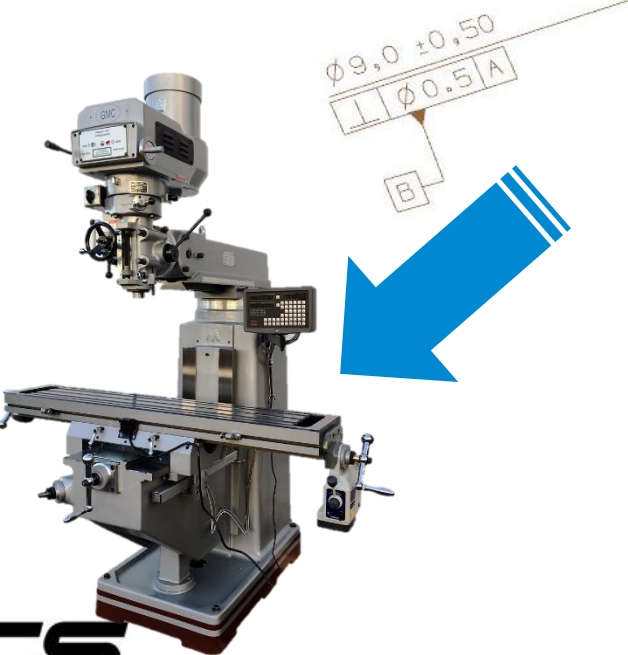
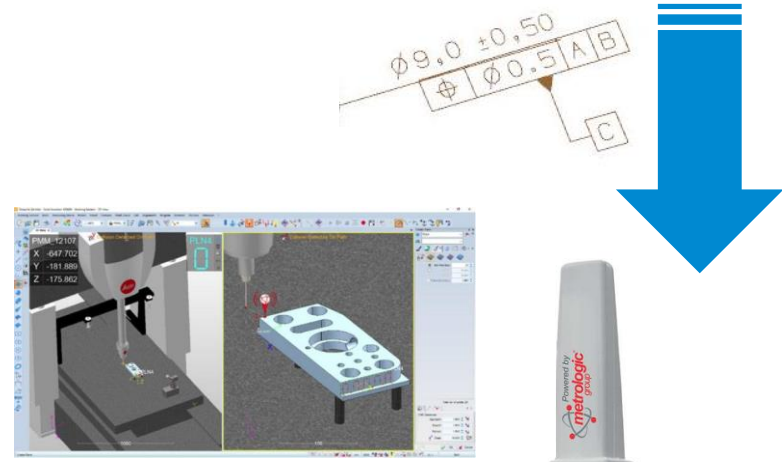
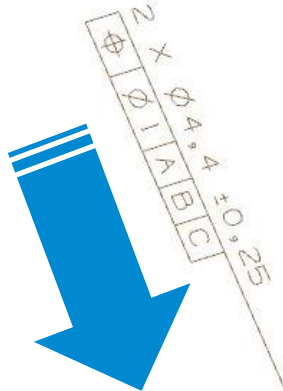
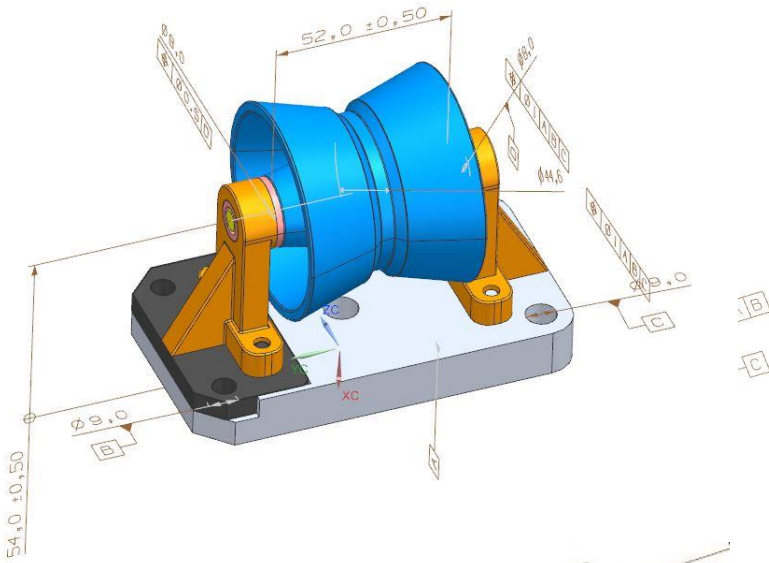




What Are We Talking About...



Utilize GD&T Downstream – Measurement, Cutting, Inspection



What Are We Talking About..

New Users -2.27%

ANALYTICS

AUTOMATION

Season +3.16%

CLOUD COMPUTING

SMART FACTORY

SYSTEM INTEGRATION

BIG DATA

INDUSTRY 4.0

+47%

AUTONOMOUS ROBOTS

INDUSTRIAL REVOLUTION

CYBER SECURITY

SMART TECHNOLOGY

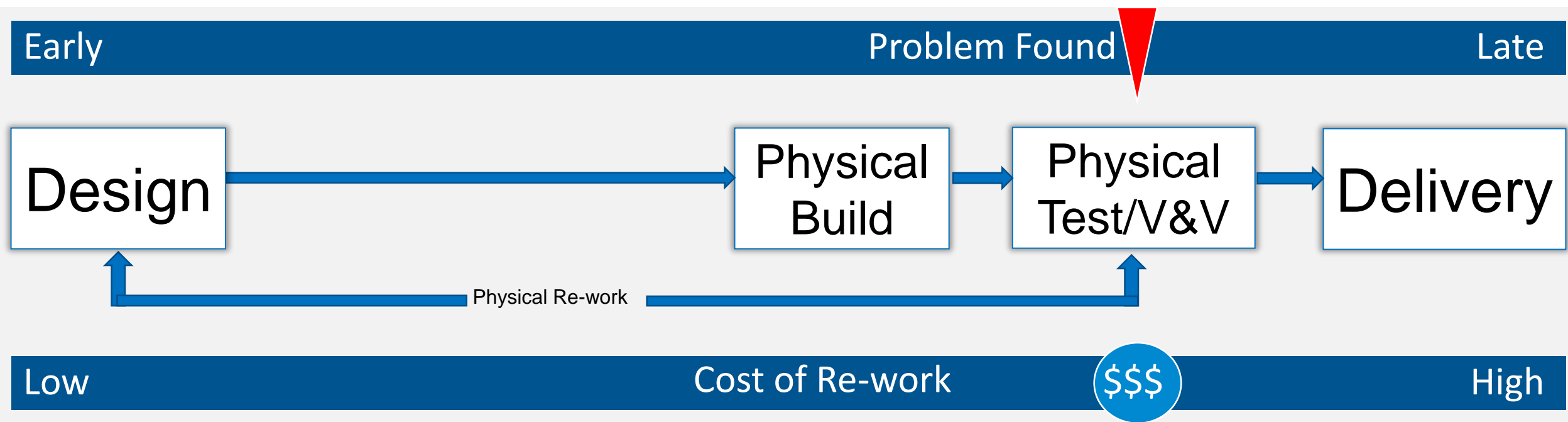
NEW BUSINESS MODEL

IOT





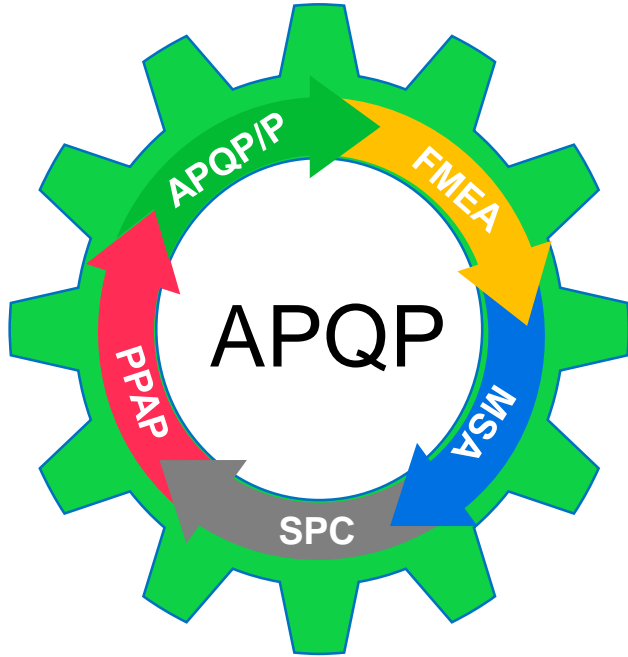
Old School: functional but slow and not taking full advantage of CAD and PLM





Program development involves three primary processes:

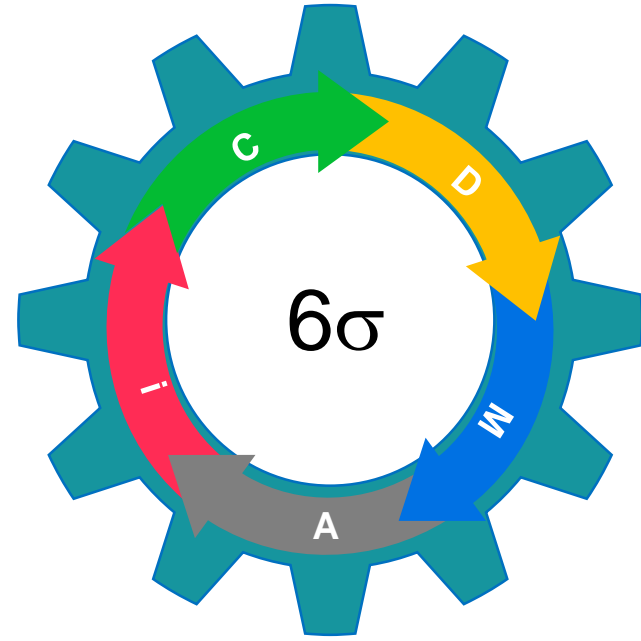
PRODUCT ENGINEERING



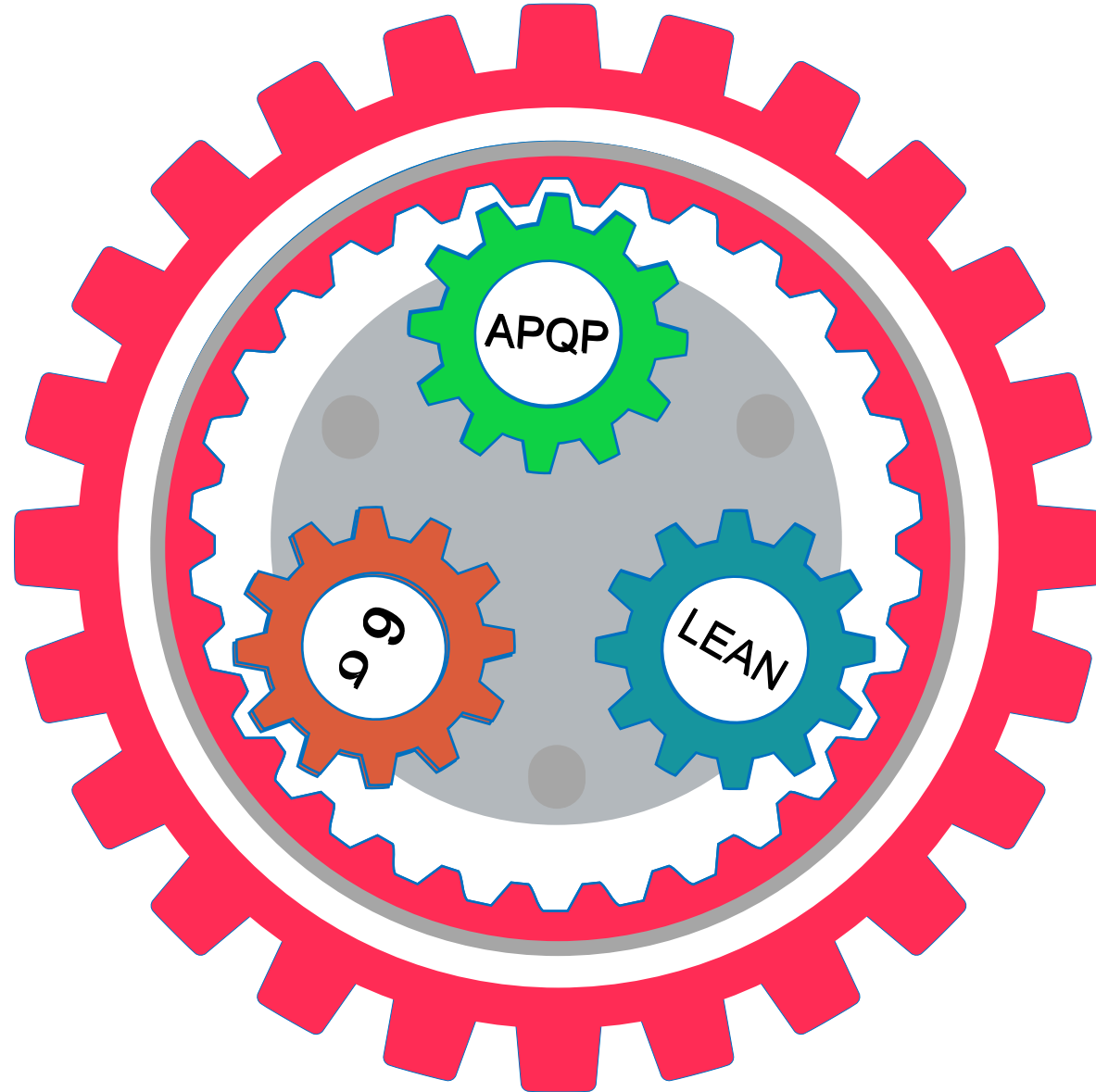
MANUFACTURING



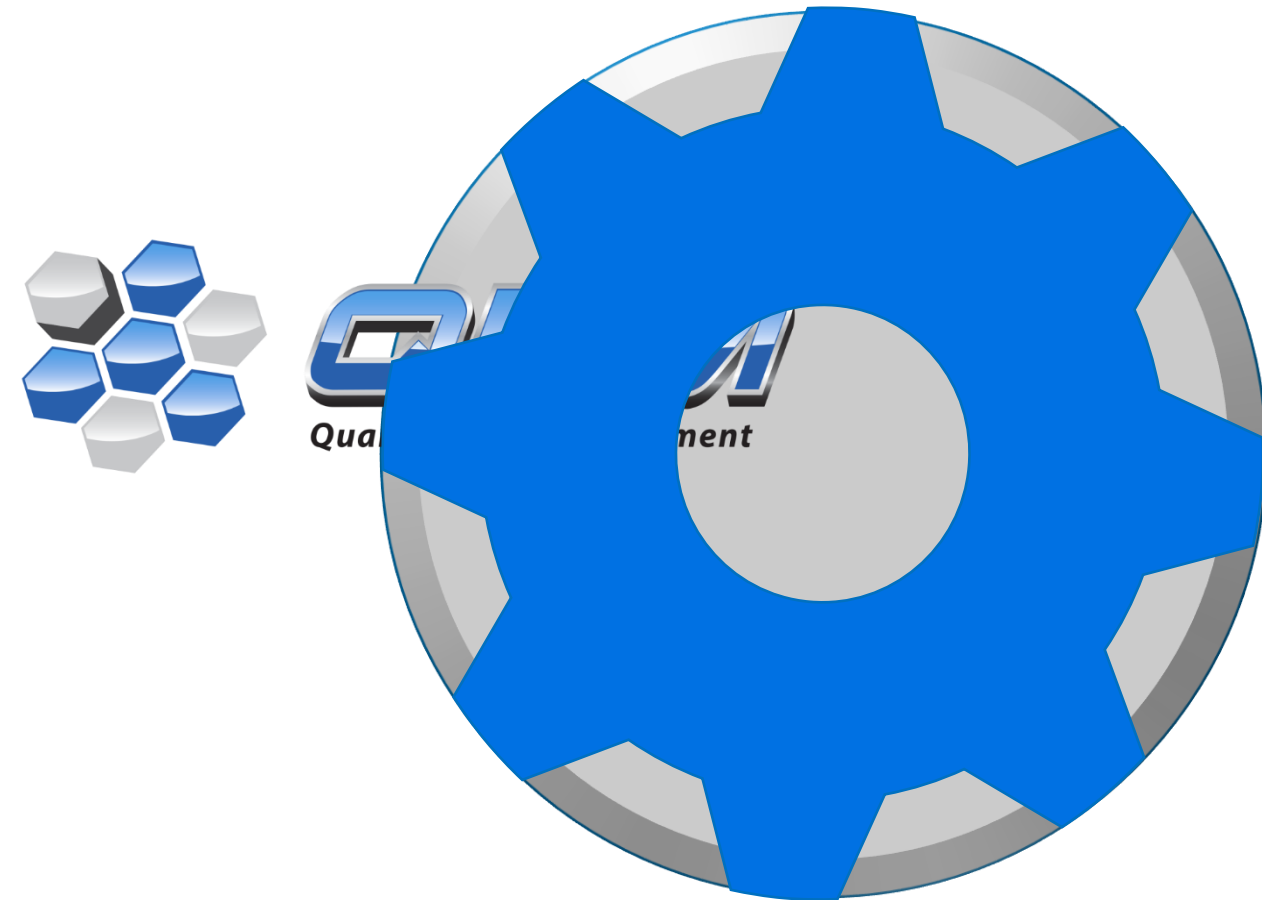
QUALITY CONTINUOUS IMPROVEMENT



Product Process Assurance



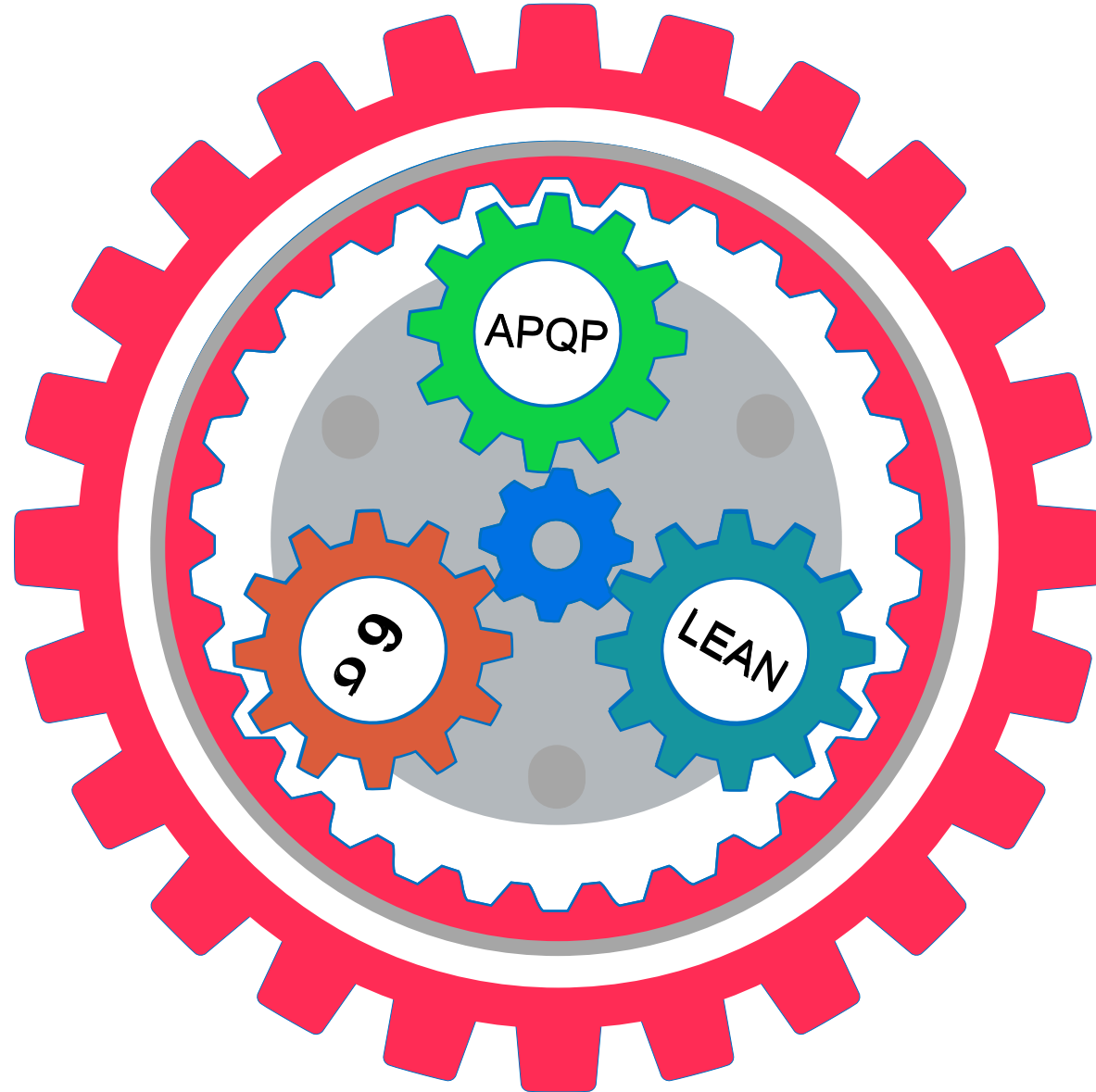
DIMENSIONAL ENGINEER'S TOOLBOX



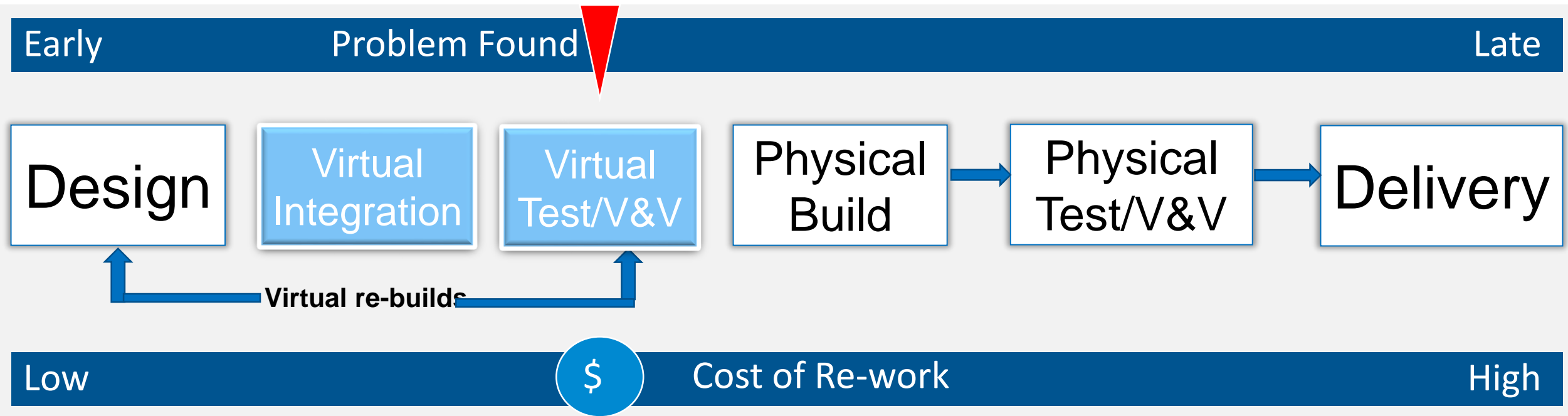
Dimensional Engineering Toolbox



Product Process Assurance



New School: leverage CAD w/ embedded AI; leverage PLM & QMS for global teams





Operational Efficiency Gains @ Sikorsky

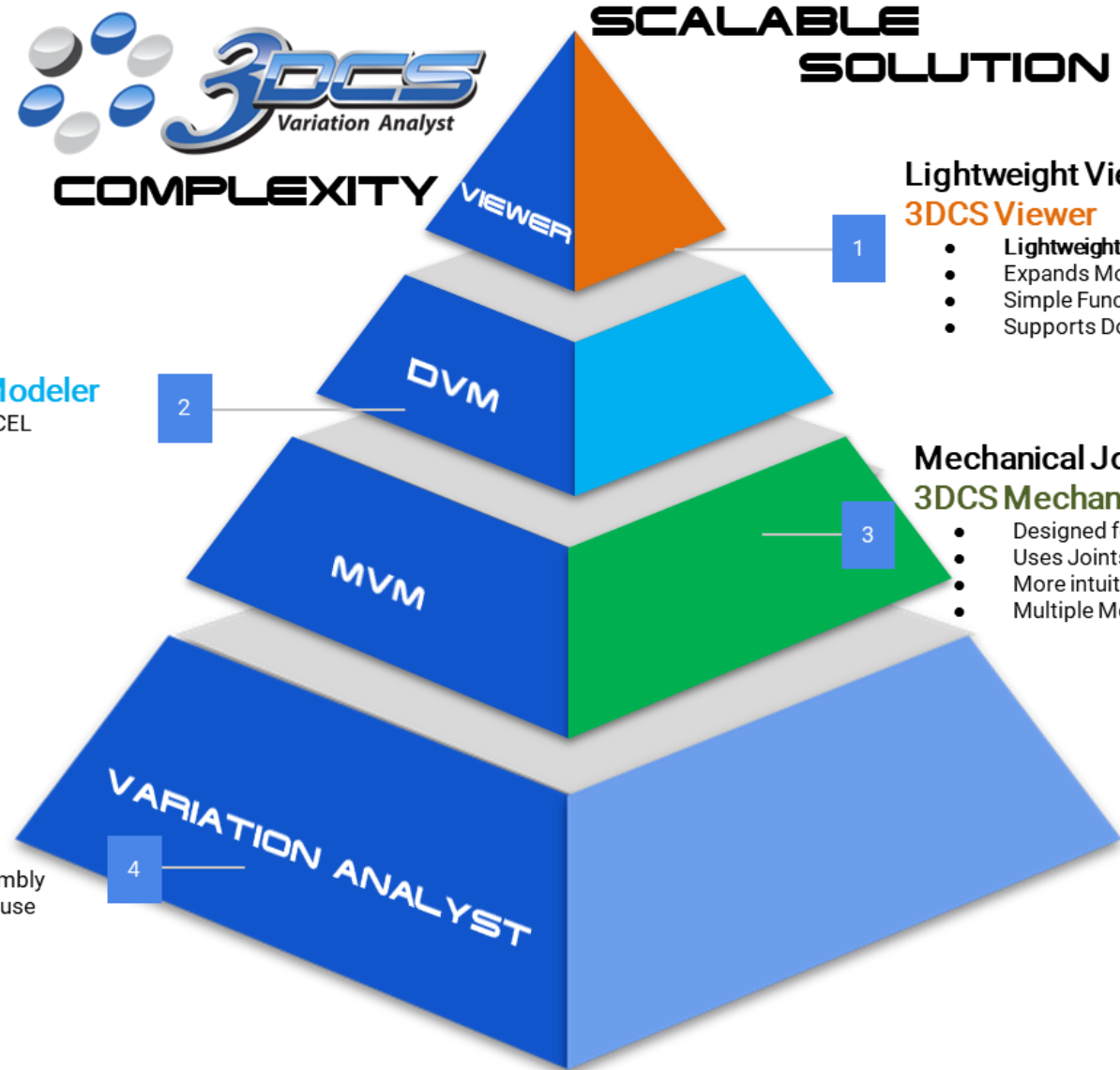


Simulate the “Build” before you Build...

A Digital Dimensional Platform...



SCALABLE SOLUTION



Lightweight Viewing Tool 3DCS Viewer

- Lightweight Viewing Tool
- Expands Model Access
- Simple Functions
- Supports Downstream MBD

Entry Level Tool

3DCS Design Variation Modeler

- Replaces 1D Stacks in EXCEL
- Easy to Use
- Single Assembly Move

Mechanical Joint-Based Entry Level Tool 3DCS Mechanical Variation Modeler

- Designed for Kinematic and Mechanical Assemblies
- Uses Joints and Constraints to build
- More intuitive
- Multiple Move Types.

Full Product Suite

3DCS Variation Analyst

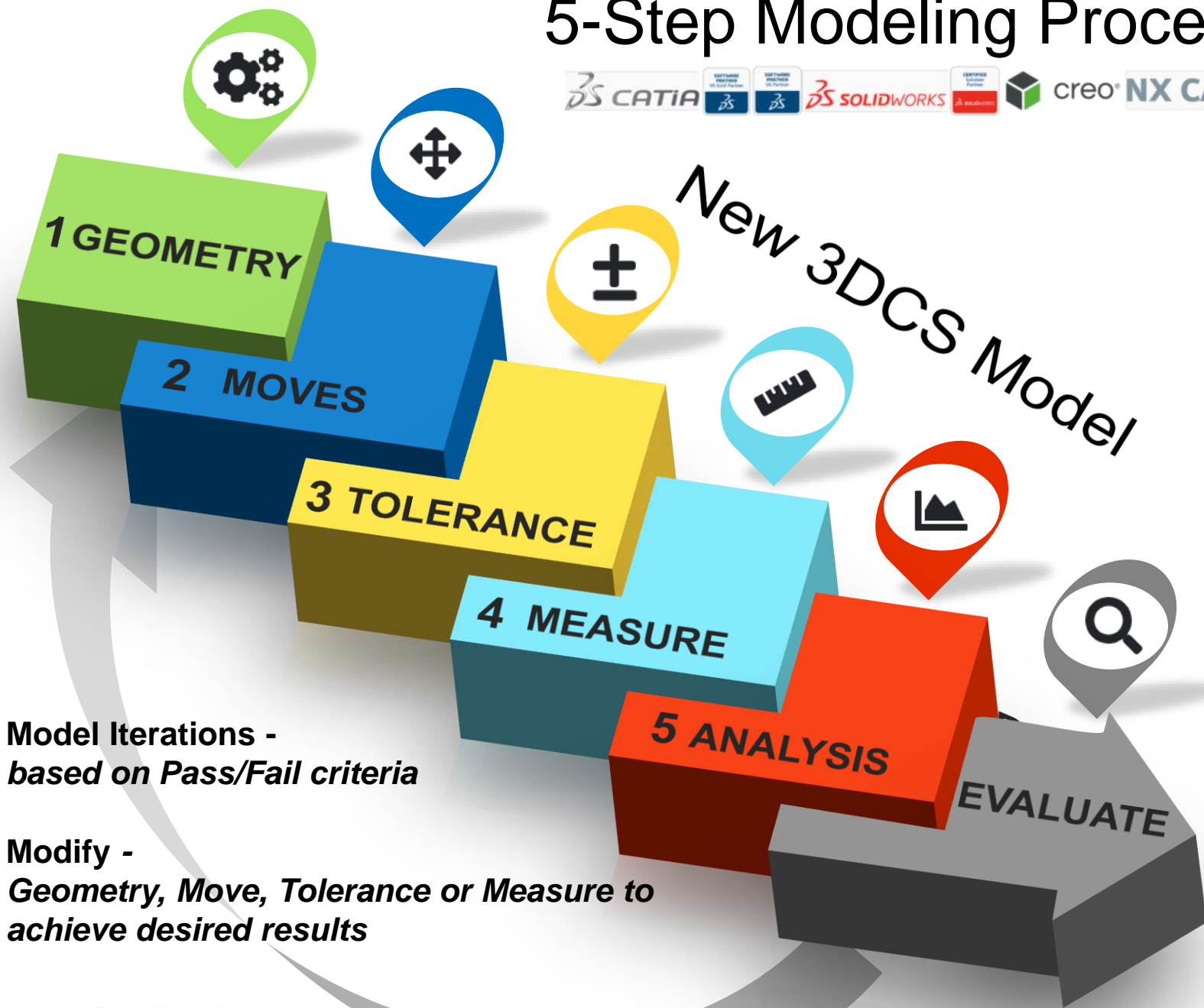
- Advanced Analysis and Assembly
- Requires training and regular use



WHAT'S THE BIG DEAL...

- **Conduction of 3DCS analysis during digital phases of product development reduces the need for design changes through the entire product lifecycle.**
- **3DCS Analysis supports problem-solving in metrology, and decisions regarding, “the build.”**
- **Go to the Launch with multiple Build scenarios and Mitigation plan. Proactive engineering, not Reactive.**

5-Step Modeling Process

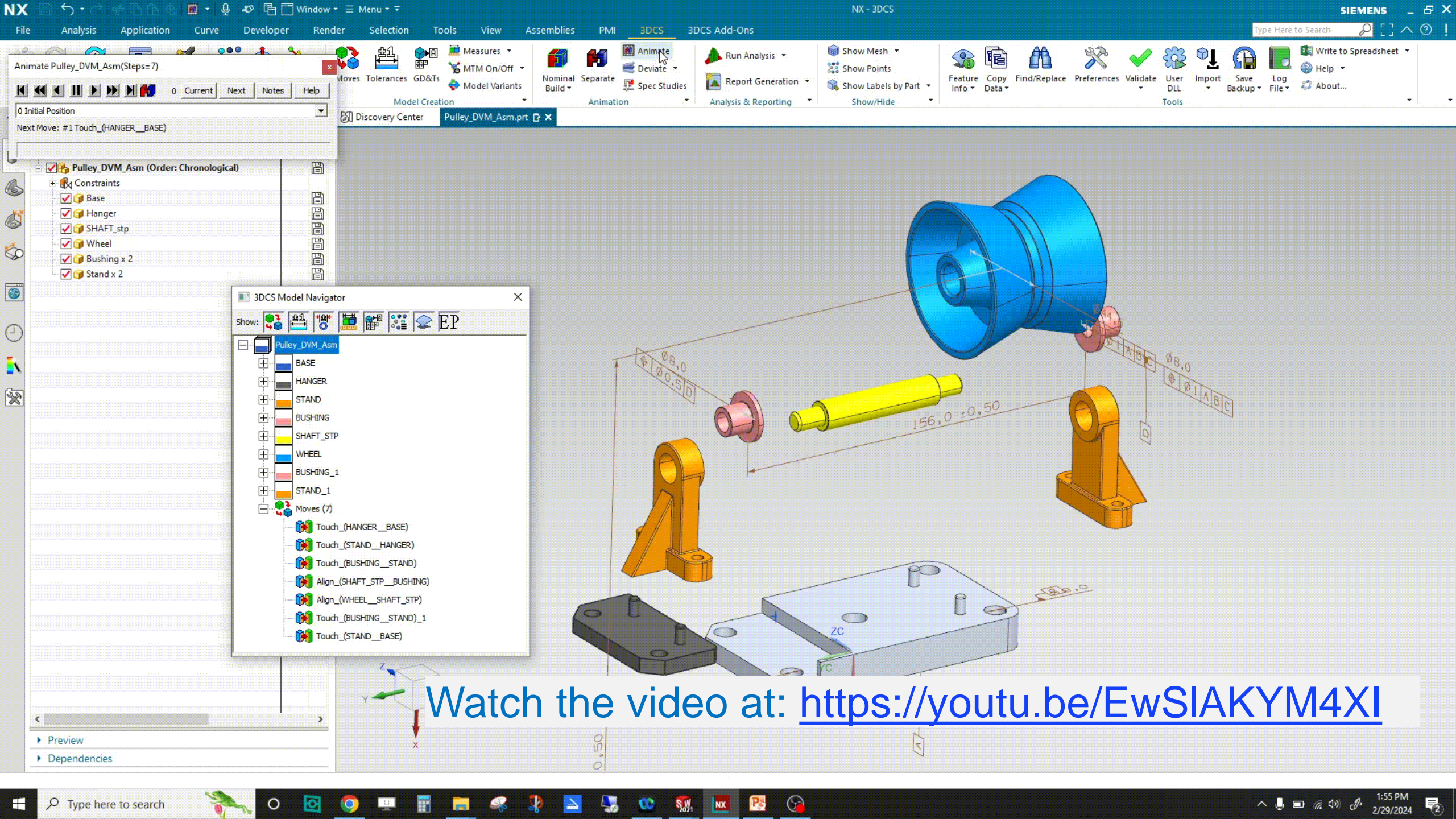


-  **Geometry**
Load CAD Geometry
-  **Moves***
Set-up Process Sequence & Locating Strategy
-  **Tolerance***
Apply Part and/or Fixture Tolerances
-  **Measure***
Define & Create Measurements and Specification Limits
-  **Analysis**
Run Monte Carlo Simulation & Sensitivity Analysis
-  **Evaluate**
Evaluate Simulation Results for All Measurements

Model Iterations - based on Pass/Fail criteria

Modify - Geometry, Move, Tolerance or Measure to achieve desired results

*Steps 2,3, and 4 can be directly imported from CAD if available



Watch the video at: <https://youtu.be/EwSIaKYM4XI>

Deviate

Run # 1 Help

Delay: 0

Close

Model Navigator (Order: Chronological)

- Constraints
- Base
- Hanger
- SHAFT_stp
- Wheel
- Bushing x 2
- Stand x 2

3DCS Model Navigator

Show: EP

- Datum_C
- Size_B
- Size_C
- Size_stand_pins
- Size_10_Clear_Hole
- Size_9_Clear_Holes
- Dim_Hanger_Primary
- Dim_Stand_Primary
- Perp_B
- Pos_C
- Pos_Stand_Pins
- Pos_10_Clear_Hole
- Pro_Hanger_Tertiary
- Pro_Hanger_Secondary
- Pos_9_Clear_Holes

HANGER

STAND



Watch the video at: <https://youtu.be/EwSIAKYM4XI>



3DCS Variation Analyst

CAD Integrated Tolerance Analysis Software

Learn more at 3dcs.com

Contact DCS at:
sales@3dcs.com



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