Test it!
But what to test?

Denis Worschow
Application Engineering
MathWorks
Model-Based Testing – Model-Based Design

- REQUIREMENTS
  - TEST SPECIFICATION
    - Model
  - DESIGN
    - Model

MathWorks
Behaves well?
Detect System Integration Issues In Simulation

Model:

Mechanical Controls

Hydraulic Supervisory Logic

Electrical Aerodynamics

Wind Speed (m/s)

Pitch Angle (deg)

Rotor Speed (RPM)

Speed (m/s)

Angle (deg)

Time (s)

Speed (RPM)
Your time spent in late testing?
Model-Based Design – Early Verification

- REQUIREMENTS
- DESIGN
- IMPLEMENTATION
- INTEGRATION

Model

Code Generation

Code

Functional Testing
What the !@#$^ is this subsystem good for?
Model-Based Design – Early Verification

- REQUIREMENTS
- DESIGN
- IMPLEMENTATION
- INTEGRATION

Traceability
Testing finished?
Model-Based Design – Early Verification

- REQUIREMENTS
- DESIGN
- IMPLEMENTATION
- INTEGRATION

Model

Code

Equivalence Test
Free of sporadic errors?
Model-Based Design – Early Verification

- Requirements
- Design
  - Model
- Implementation
  - Code
- Integration

[Standard Requirements]
Model-Based Design – Early Verification

- REQUIREMENTS
- DESIGN
  - Model
- IMPLEMENTATION
  - Code
- INTEGRATION

Traceability
Functional Testing
Standard Requirements
Equivalence Test
Got more questions?

- Visit me at our booth
- Browse mathworks.com/model-based-design/