

Project: CM&S Aided Design Type Certification

INTRODUCTION

Project Description

Identify and illustrate principles, processes, and methods for improving scaling in a cloud computing environment of model-based simulation of product types to reduce risk in certification testing and reduce physical experimentation.

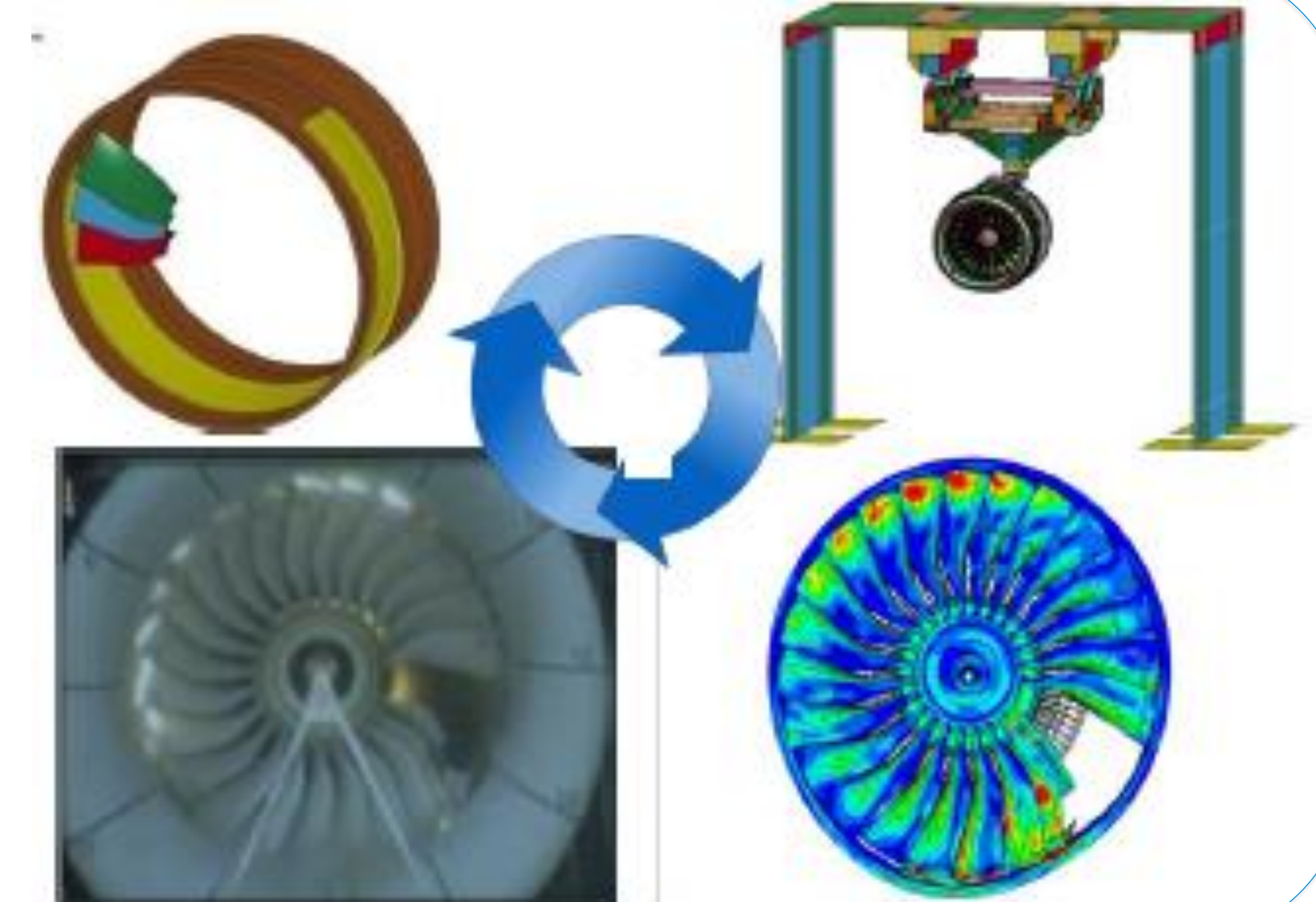
Project performed within the V4I Framework and across targeted domain specific examples.

System of Interest

Fan Blade Off (FBO)

Question being Answered

How can we run FBO analysis in the cloud and how can we speed up the calculations?



EXPECTED BENEFITS OF THE PROJECT

Target System: De-risking virtual certification testing
 Reduction of product development cost by decreasing design CT
 Pulling forward design testing (virtual)
 Evaluation of alternatives during design
 Ensuring successful physical testing

V4i: Continued development and practice with the following V4i Framework Components using Design Type Use Case(s):

- Prototype the Pilot **VVUQ Patterns & Repository Pattern**
- Leverage **s*Metamodel (mapped to tools), System of Innovation Patterns** and the use of **MBSE/PBSE Methodology**
- Improve all utilized V4i Framework Components & sub-Components via learning & integration across Program

PROJECT APPROACH SUMMARY

- Establish Project related V4i Framework deliverables
- Benchmark Solver on HPC Cloud Environment
- Initial Solver Code Improvements
- Run Solver on HPC Cloud Environment
- Additional Solver Code Improvements
- Cross Industry Use Case verification

Estimated Project Duration: 18 months after Project Agreement execution

FUTURE WORK

Demonstrate V4i value through cross industry Use Cases

- Medical Device
- Consumer Product

PROJECT TEAM

- Rolls-Royce
- Microsoft (via Rolls-Royce)
- Livermore Software Technology Corporation (via Rolls-Royce)
- ICTT
- Adjutant Solutions Group