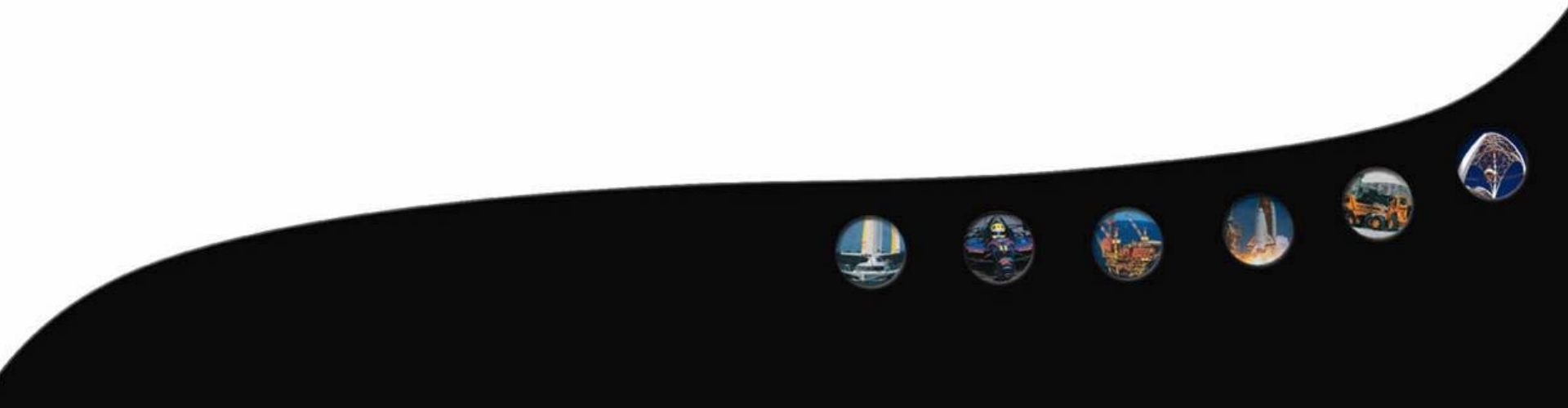
NA Regional Summit 2008 NAFEMS

2020 Vision of Engineering Analysis and Simulation

October 29 - 31, 2008 | Hampton, Virginia

Wrap-up and Closure

NAFEMS North American Steering Committee



- Modeling
  - Multi-Scale modeling; atoms to parts to sub-assemblies to total vehicle
  - Unified product CAD geometry and simulation geometry
- Analysis & Optimization
  - Realistic simulation
  - Multiphysics environment (e.g., CFD/thermal, FSI)
  - Stochastic/probabilistic for robust, reliable solutions and risk predication and management
  - Simulation precision (quality) report-outs
  - Design synthesis engines
- Product Lifecycle Knowledge Management
  - Simulation is pervasive throughout the lifecycle of the product.
  - Integrated design, requirements, workflows, and change management.
  - Integrated mechanical, electrical, electronics, and software systems
  - Interactive management of knowledge databases

- Man-Machine Interaction
  - Collaborative immersive work environment
  - Virtual collaboration
  - On-going need of training engineering simulation practitioners
- Computing Architecture
  - Computing capability on-demand (e.g., exoflop clouds)
  - Best-in-class simulation tools vs. unified single system
  - Computing hardware considerations for tomorrow's realistic simulations
  - Pushing the limits of HPC into the future
- State of Business
  - Engineering simulation industry is healthy; mature supplier companies and new start-up companies
    - Much of needed technology exists today, but enhancements are yet required
    - Lots of work yet to be done…
  - Anticipation and requirements of advanced growth in computing for improved business investment

NAFEMS Future Contributions

- Continues as the only independent international organization that spans multiple technology domains across all industries
- Focus areas:
  - Networking (e.g., forums and summits)
  - Sharing information (e.g., webinars, library of trusted reference materials)
  - Training and Education (e.g., training sessions)
  - Technical Working Groups (TWGs)

NAFEMS Technical Working Groups

- Analysis Management
- CAD/FE Integration
- Computational Fluid Dynamics
- Computational Structural Mechanics
- Dynamics and Testing
- Education and Training
- Multiphysics
- Stochastics
- Simulation Data Management

THE INTERNATIONAL ASSOCIATION FOR THE ENGINEERING ANALYSIS COMMUNITY

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Thank you!