

COMPANY BROCHURE



synergysim.com.au



info@synergysim.com.au



[SynergySim LinkedIn](#)



SynergySim
ENGINEERING SOLUTIONS

SynergySim Engineering Solutions

"Where Precision Meets Innovation"



SynergySim
ENGINEERING SOLUTIONS

SynergySim 2026

01

About Us

02

Services

03

Service Domain &
Industry Partners



About Us

Engineering Solutions
From Australia
For Australia

SynergySim About Us



At SynergySim Engineering Solutions, we are committed to providing cutting-edge engineering simulation and analysis services. Founded with a vision to drive innovation and precision in engineering, our company leverages the latest technologies to deliver exceptional results for our clients across various industries.



SynergySim Engineering Solutions

“Where Precision Meets Innovation”

- 01 Integrated Multidisciplinary Expertise
- 02 Cutting-Edge Simulation & Analysis
- 03 Sustainability & Efficiency Focus
- 04 Tailored Solutions for Niche Markets
- 05 Proven Track Record & Industry Recognition
- 06 Innovative Problem-Solving
- 07 End-to-End Project Management



Services

Engineering Solutions
Driven by Simulation
Defined by Results

SynergySim Services



At SynergySim Engineering, we deliver end-to-end engineering solutions — from concept development and 3D design to advanced simulation and performance validation. Our expertise spans product design, structural and thermal analysis, and fluid system optimization, ensuring every project meets the highest standards of safety, efficiency, and reliability. We combine engineering insight with digital simulation tools to help clients innovate, optimize, and achieve measurable results across industries including Manufacturing & Industrial Equipment, Bulk Material Handling, Mining & Resources, Energy, Buildings, Aerospace/Automotive/ Sport Engineering and R&D.



SynergySim Engineering Solutions

“Where Precision Meets Innovation”

- 01 Thermal Engineering
- 02 Mining & Mineral Processing
- 03 Mechanical Structure & Engineering
- 04 RPEQ Certification
- 05 Fluid Machineries & System Engineering
- 06 Theoretical Modelling & Tool Development
- 07 CAE Infrastructure Evaluation



Services

Engineering Solutions
Driven by Simulation
Defined by Results

SynergySim Services



Our Thermal engineering services focus on the analysis, design, and optimization of systems and processes that involve heat transfer and thermal energy management. These services are essential across a wide range of industries, including energy, manufacturing, automotive, aerospace, electronics, and HVAC, where the control and efficient use of thermal energy are critical.



SynergySim Engineering Solutions

“Where Precision Meets Innovation”

01

Thermal Engineering

1. Heat Exchanger Design and Optimization
2. Thermal System Design and Integration
3. Thermal Insulation and Energy Conservation
4. Refrigeration and Air Conditioning Systems Engineering
5. Combustion and Heat Transfer Analysis
6. Thermal Stress and Fatigue Analysis
7. Renewable Energy Systems Engineering
8. Phase Change Materials (PCM) and Thermal Energy Storage
9. Electronics Cooling and Thermal Management
10. HVAC System Design and Optimization



Services

Engineering Solutions
Driven by Simulation
Defined by Results

SynergySim Services



Our Mining engineering services involve the planning, design, operation, and management of mines, as well as the processing of minerals. These services are critical for ensuring that mining operations are safe, efficient, environmentally responsible, and economically viable. Mining engineering services are essential across the entire lifecycle of a mine, from exploration and feasibility studies to closure and reclamation.



SynergySim Engineering Solutions

“Where Precision Meets Innovation”

02

Mining & Mineral Processing

1. Chute & Transfer Design
 - a) DEM Analysis for flow Optimization
 - b) Stop-Restart Event Analysis
 - c) Liner Wear analysis
 - d) Vibrating induced material transfer analysis
 - e) Dust/Airflow simulation and dust mitigation during transfer (LBM-DEM integration)
 - f) SPH-DEM integration for modelling processes involving slurry flow
 - g) Other applications: Elevator conveyor/Bucket Conveyor analysis, Screw conveyor analysis
2. Bulk Material Processing Systems Design
 - a) Crushing, Screening & Sorting System Design and Integration
 - b) Dust Control and Environmental Management
 - c) FEA-DEM integration for structural integrity



Services

Engineering Solutions
Driven by Simulation
Defined by Results

SynergySim Services



SynergySim Mechanical structure engineering services encompass the design, analysis, and optimization of mechanical structures to ensure they can withstand various forces and loads while meeting performance, safety, and reliability standards. These services are vital in industries such as aerospace, automotive, civil engineering, and manufacturing, where structural integrity is critical.



SynergySim Engineering Solutions

“Where Precision Meets Innovation”

03

Mechanical Structure & Engineering

1. Structural Design and Analysis
2. Thermal Stress Analysis
3. Fatigue and Fracture Analysis
4. Buckling Analysis
5. Optimization and Weight Reduction
6. Load & Stress Analysis
7. Vibration & Modal Analysis
8. Custom Mechanical System Design



Services

Engineering Solutions
Driven by Simulation
Defined by Results

SynergySim Services



At SynergySim Engineering, we deliver end-to-end engineering solutions — from concept development and 3D design to advanced simulation and performance validation. Our expertise spans product design, structural and thermal analysis, and fluid system optimization, ensuring every project meets the highest standards of safety, efficiency, and reliability. We combine engineering insight with digital simulation tools to help clients innovate, optimize, and achieve measurable results across industries including Manufacturing & Industrial Equipment, Bulk Material Handling, Mining & Resources, Energy, Buildings, Aerospace/Automotive/ Sport Engineering and R&D.



SynergySim Engineering Solutions

“Where Precision Meets Innovation”

04

RPEQ Certification

1. Regulated Engineering Sign-off
2. Compliance Assurance (AS/NZS) Australian Standards, code of practice and site-specific requirements
3. Technical Verification
4. Risk Assessment
5. FMEA



Services

Engineering Solutions
Driven by Simulation
Defined by Results

SynergySim Services



Our fluid machinery and systems engineering services focus on the design, analysis, optimization, and maintenance of equipment and systems that involve the movement and control of fluids (liquids and gases). These services are crucial in industries such as power generation, water treatment, oil and gas, chemical processing, and HVAC systems, where efficient fluid handling is essential.



SynergySim Engineering Solutions

“Where Precision Meets Innovation”

05

Fluid Machineries & System Engineering

1. Pump and Compressor Design
2. Turbomachinery Engineering
3. Piping and Ducting Systems Design
4. Hydraulic and Pneumatic Systems Engineering
5. Flow and Pressure Control Systems
6. Cavitation and Erosion Analysis
7. Pipeline and Network Simulation



Services

Engineering Solutions
Driven by Simulation
Defined by Results

SynergySim Services



At SynergySim, we understand that industries require precision tools and models to streamline processes, improve efficiency, and innovate their operations. Our Theoretical Modeling and Tool Development service is designed to meet these needs by offering customized engineering tools that are specifically developed for real-world industrial applications.

We leverage platforms such as Microsoft Packages, VB, MATLAB, and other industrial interfaces to create tools that assist with common engineering tasks, such as calculating bearings, designing pulleys, and other mechanical systems. Furthermore, we offer parametric design solutions that allow for flexible inputs and outputs, ensuring our tools are adaptable to the specific needs of your business.



SynergySim Engineering Solutions

“Where Precision Meets Innovation”

06

Theoretical Modelling & Tool Development

1. Customized Engineering Tools for Industrial Efficiency and continuous Improvement (CI)
2. Theoretical Modelling based on available academic publications and industrial research
3. Automation tools for Repetitive Engineering Tasks
4. Validation, Benchmarking & Knowledge Management
5. Emerging Technology Integration



Services

Engineering Solutions
Driven by Simulation
Defined by Results

SynergySim Services



At SynergySim Engineering, we deliver end-to-end engineering solutions — from concept development and 3D design to advanced simulation and performance validation. Our expertise spans product design, structural and thermal analysis, and fluid system optimization, ensuring every project meets the highest standards of safety, efficiency, and reliability. We combine engineering insight with digital simulation tools to help clients innovate, optimize, and achieve measurable results across industries including Manufacturing & Industrial Equipment, Bulk Material Handling, Mining & Resources, Energy, Buildings, Aerospace/Automotive/ Sport Engineering and R&D.



SynergySim Engineering Solutions

“Where Precision Meets Innovation”

07

CAE Infrastructure Evaluation

1. Software Capability Assessment
2. Hardware & HPC Readiness Review
3. Simulation Workflow & Process Evaluation
4. Data Management & Integration Review
5. Emerging Technology Integration



Engineering Solutions
For Integrated Systems
For Trusted Partnerships

SynergySim
ENGINEERING SOLUTIONS

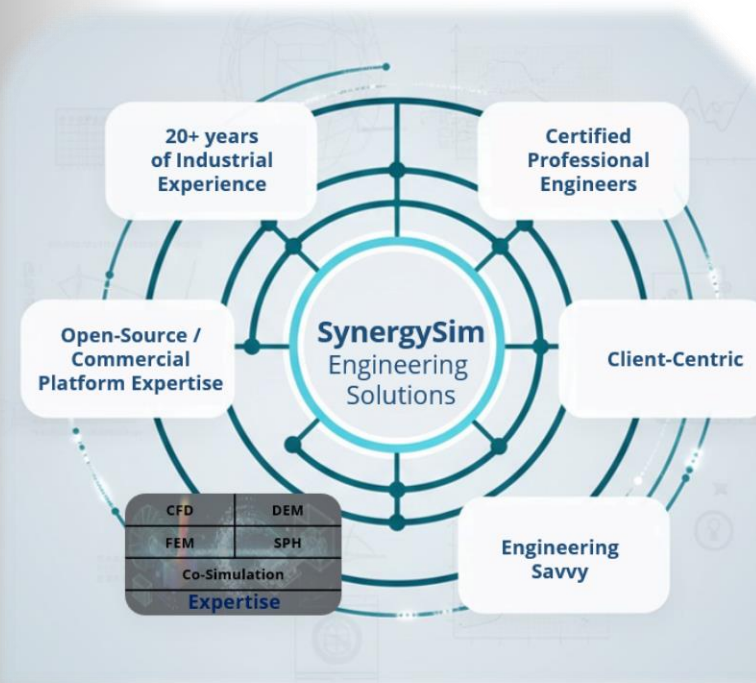


SynergySim
ENGINEERING SOLUTIONS

SynergySim
Engineering Solutions

“Where Precision Meets Innovation”

Who Are We?



INDUSTRY PARTNERS

[illegible]