

Engineering-Grade CFD and Safety Validation Services

At Sukra Infotek, we help businesses make smarter engineering decisions through advanced CFD and safety validation services. Using physics-based simulation and real engineering insight, we improve safety, reliability, and performance across diverse sectors including built environments, industrial plants, clean manufacturing, digital infrastructure, and sustainable energy systems.

Our CFD solutions blend domain expertise, AI automation, and powerful computing to deliver accurate, ready-to-use results you can trust.

Our Core Competence



Comprehensive CFD Analysis

HVAC, fire & smoke, wind comfort, contaminant dispersion, and thermal load studies.



Safety & Compliance Simulations

Smoke tenability, pressure differential mapping, and life safety optimization as per global standards.



Performance Optimization

Airflow distribution, thermal comfort, and ventilation efficiency improvement for built environments and industrial processes.



Environmental & Process Studies

Dispersion, exhaust, and heat transfer modeling for petrochemical, oil & gas, and heavy engineering setups.



Validation & Reporting

Accurate, visually intuitive reports that support stakeholder approvals and compliance certifications.



Digital Twin & AI-Driven CFD

Real-time coupling of CFD with IoT sensor data for predictive monitoring, AI surrogate models to accelerate simulation cycles, closed-loop CFD-AI validation frameworks.



Data Center CFD & Thermal Optimization

Rack-level temperature and pressure mapping, CRAC efficiency and containment design, PUE optimization, and hotspot mitigation.



Industrial Ventilation & Process CFD

Cyclone and pre-heater optimization, ESP/Bag filter flow uniformity, combustion and mixing analysis for cement and process industries.



Outdoor Dispersion & Wind Engineering

Pollutant dispersion, urban micro-climate studies, and wind load analysis for façades and high-rise structures.



Aero-Hydrodynamic Simulations

Vehicle and drone aerodynamics, bridge and structure wind load simulations, and HVAC duct optimization.



Thermal Energy & Cooling Systems

Heat exchanger and cooling tower optimization, waste heat recovery, and thermal storage design validation.



Structural Coupled CFD (FSI)

Fluid-Structure Interaction studies for fans, membranes, louvers, and pressure-induced deformation validation.



Fire & Smoke Smart Safety Simulations

Evacuation modeling with occupant agent-based AI, dynamic tenability assessment, and NFPA-compliant safety validation.



Design Automation & Custom CFD Apps

Development of parametric study automation scripts, custom web-based CFD dashboards, and CFD-as-a-Service frameworks.

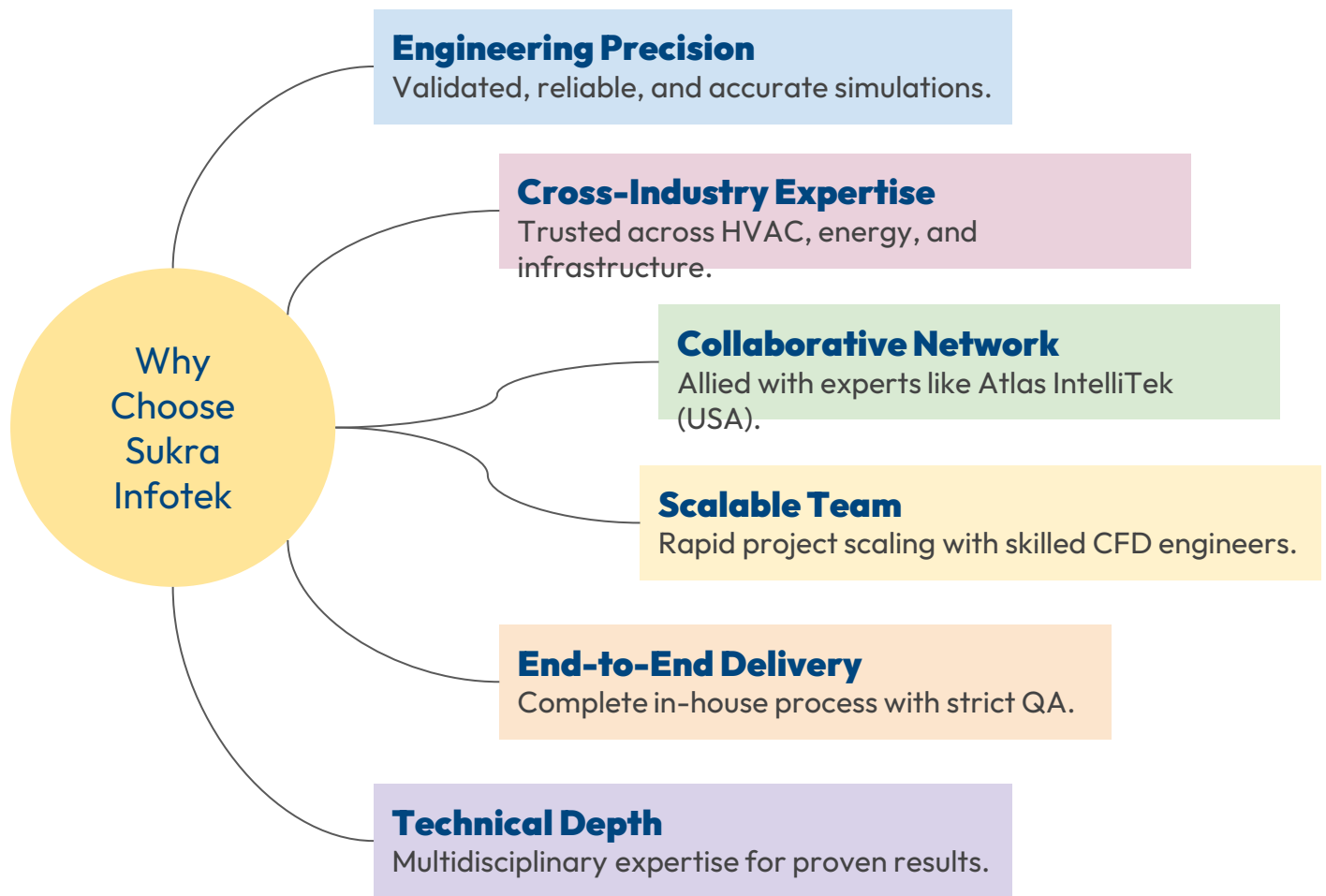


Training & Capability Building

Corporate upskilling programs, CFD toolchain workshops, and joint certification initiatives with Atlas IntelliTek.

Innovation & R&D Initiatives-CFD + AI Innovation Lab

Sukra and **Atlas IntelliTek** jointly operate an innovation framework focused on AI-accelerated CFD workflows, digital twin integration, and multi-physics simulation automation. Ongoing research includes energy-efficient fan design, predictive maintenance models, and agentic AI validation of industrial systems.



Our Engagement Models

1

Project-Based Consulting

Full CFD study engagements with defined deliverables and client validation checkpoints.

2

Resource Augmentation

On-site or remote CFD specialists dedicated to your ongoing engineering projects.

3

Joint R&D and Design Validation

Co-development of customized simulation frameworks for OEMs, EPCs, and research-driven organizations.

The Sukra Advantage

Validated, Decision-Ready Insights	Physics-accurate results that drive confident engineering and investment decisions.
Technology Meets Engineering	Integration of AI automation for faster meshing, simulation, and reporting cycles.
Scalable by Design	Rapid mobilization of resources through Sukra’s collaboration network ensures timely delivery for complex projects.
Global Standards, Local Delivery	ISO-aligned processes, international safety benchmarks, and transparent communication throughout the project lifecycle.
Trusted by Industry Leaders	Proven track record with large-scale HVAC, fire safety, and environmental simulation projects across India and abroad.

**Partner with Sukra Infotek to
elevate the safety and efficiency of
your engineering systems.**



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Reach us to discuss how our CFD and safety validation expertise can strengthen your next project.