



DIGITAL SOLUTIONS

ADVANCED DISPERSION, FIRE AND EXPLOSION SIMULATIONS WITH KFX

Kameleon FireEx - KFX® is recognized in the oil and gas industry as the leading industrial CFD technology for simulation of flares, gas dispersion, fire development and fire mitigation for realistic conditions in complex structures.

Our state-of-the-art computational fluid dynamics (CFD) simulator, Kameleon FireEx, is a tool for advanced solutions to industrial problems related to dispersion of hazardous matter, fire and explosion safety. KFX has been used for CFD simulation in numerous industrial analyses worldwide, supporting robust and optimized technical design solutions for more than 25 years.

With KFX's user-friendly and powerful capabilities, you can simulate conventional jet and pool fires, complex multiphase spray fires with rainout, well-ventilated and under-ventilated fires, LNG leaks with pool spreading, gas dispersion and LNG fires,

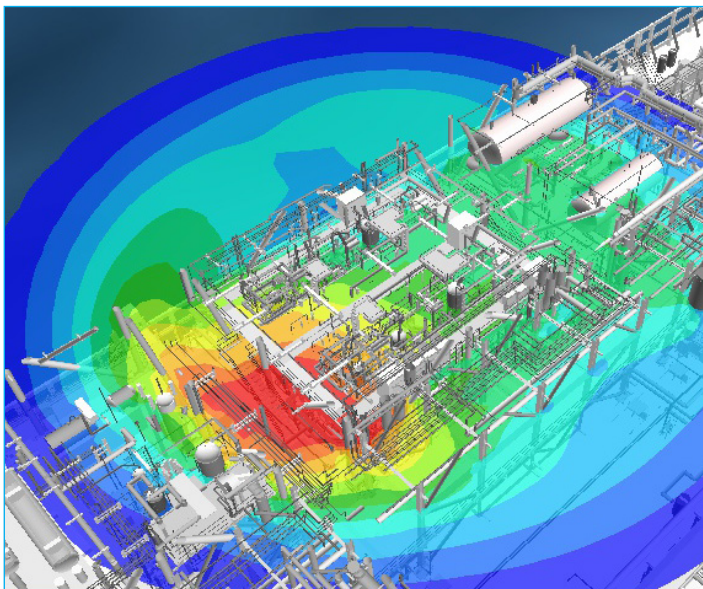
water-based fire mitigation by deluge, monitors, mist and water curtains in complex environments. KFX also offers optimization of passive fire protection, flare analysis, as well as turbulent flow, gas dispersion and smoke analysis in general, all in congested areas taking all weather effects into account.

For prediction of consequences of gas explosions in congested geometries, KFX features the well-known Exsim gas explosion simulator which has been used for industrial explosion analyses since 1989.

CFD simulation for industrial needs

The KFX simulator was originally developed by ComputIT, NTNU and SINTEF with partners in the industry. Our competence in CFD simulation is built on four decades of focused research, continuous development of simulation techniques and consultancy work within the field of turbulent flow and combustion. Development has included high-level scientific physical modelling, but also close collaboration with the oil and gas industry and understanding of industrial needs through consultancy work.

In 2017, ComputIT was acquired by DNV GL, bringing together teams of experts within physical modelling, CFD simulation, utilization of digital capabilities and specialist industry competence.



KFX - WHAT YOU GET:

- Preferred tool for finding cost-effective solutions to both fire and explosion safety problems
- Powerful CAD and topography import where CAD geometries are converted automatically to solid constructions or surface/volume porosities. Electronic maps of terrain, buildings, modules, process plants, etc. are readily handled
- Batch processing of a large number of simulations, e.g. for fire and explosion risk analyses
- Comprehensive post-processing capabilities, such as video presentations and various visualizations in the CAD geometry
- Three-dimensional transient finite-volume CFD code that solves the fundamental conservation equations for turbulent flow and combustion using a non-uniform Cartesian grid
- Efficient porosity technique for resolution of objects smaller than the grid size
- Detailed Lagrangian models for fire mitigation and extinction by water systems, such as water mist, water curtains, deluge, monitors and sprinklers
- Interface with finite element structure response code Usfos for non-linear dynamic structural response analysis
- Explosion capabilities through integration of the well-known and extensively validated KFX Exsim software module