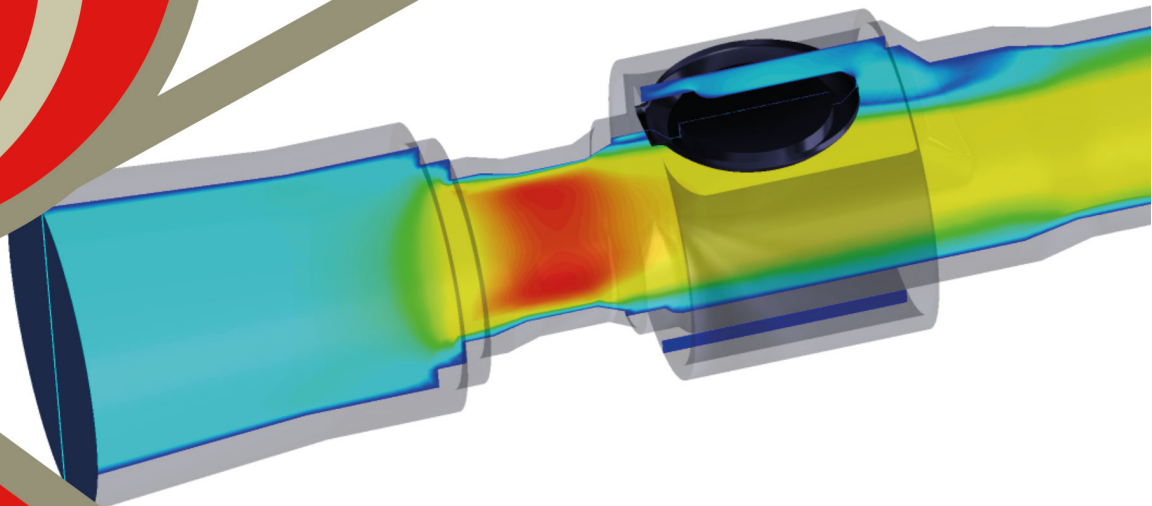
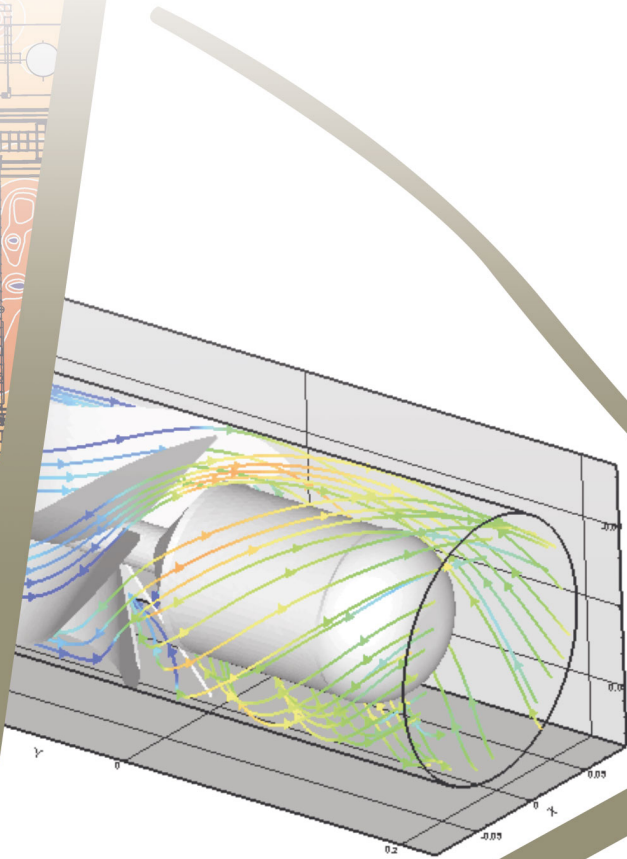


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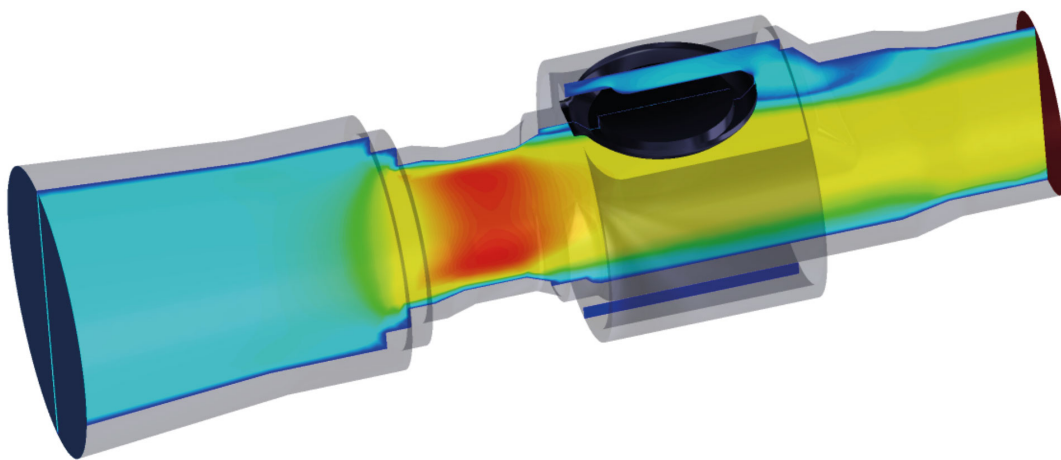
ENERGY AND ENVIRONMENT TECHNOLOGIES

PROCESS AND EQUIPMENT



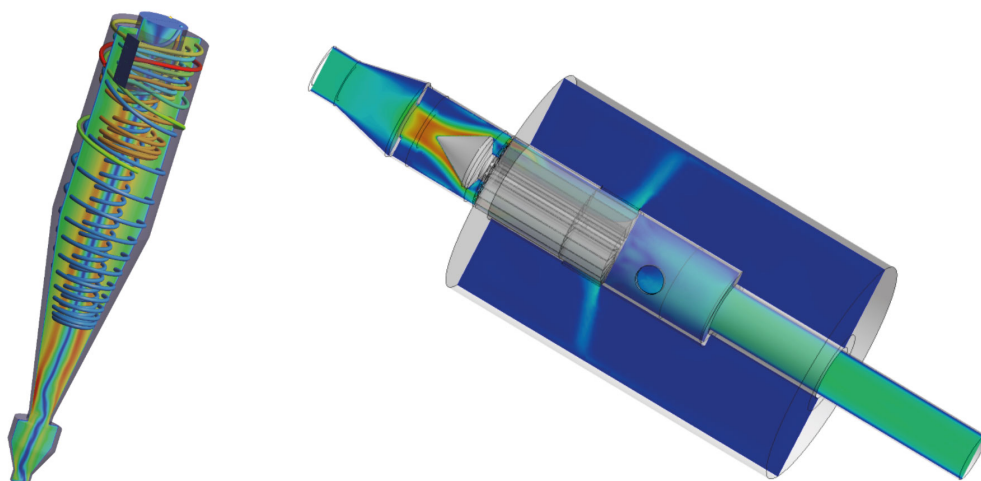
CFD/FEA for Process and Equipment Design

Fluid forces, thermal effects and structural integrity can all impact performance of products and industrial processes. Computational Fluid Dynamics (CFD) and Finite Element Analysis (FEA) allow a detailed understanding of fluid flow and mechanical response in real-world environments. TEA Sistemi is a leading specialist in the use of CFD and FEA techniques for process analysis and equipment design, also combining physics solvers for high fidelity multiphysics simulations (thermal fluid-structure interaction).



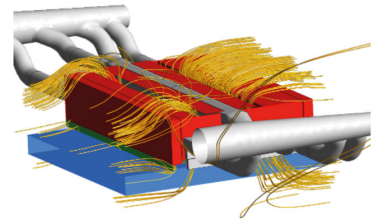
Software

TEA Sistemi uses the best computational software available on the market in order to perform design activities and to meet Client's needs. Among our main tools we cite ANSYS Fluent, ANSYS Mechanical, STAR-CCM+, OpenFOAM, SolidWorks.



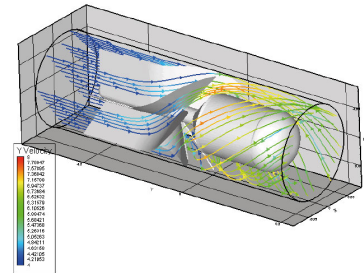
Process optimization

The behaviour of fluids in a process system directly impacts on how effective that process is. CFD provides a detailed understanding of flow distribution, pressure losses, heat transfer, particulate separation, collection efficiency, etc. in order to achieve efficient process and meet environmental regulations through better designs.



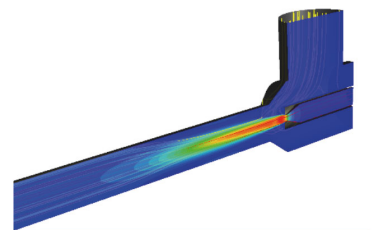
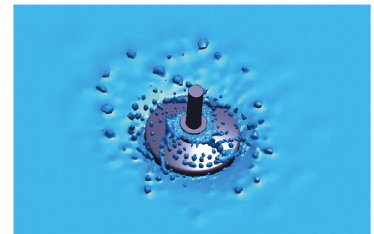
Design evaluation, verification and optimization

In the design of process equipment, CFD is valuable to verify different equipment configurations, or to compare performances for different operating regimes. In case of revamping or trouble-shooting, full scale CFD models can be constructed to provide clear and comprehensive flow visualizations that help you get to the root cause of problems quickly, and to test alternative solutions efficiently, thus resulting in lower costs and shorter time to market.



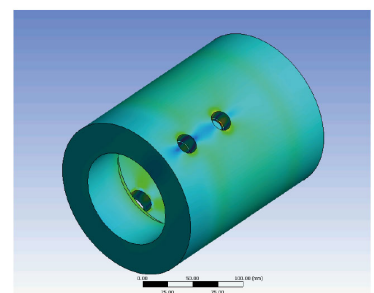
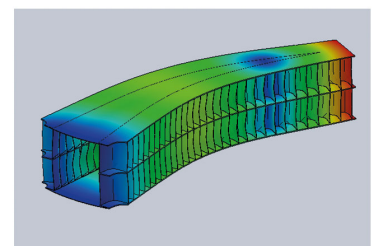
Stress analysis for Design Certification

According to ASME Section VIII DIV 1 and PED directive, when rules for details of design and construction are not given in the Code, the Manufacturer shall provide design and construction details which will be as safe as those provided by the rules of the Code. FEA is often chosen as the tool as it is very powerful and relatively inexpensive.



Applications

- Filters
- Piping Systems
- Gravity and Cyclonic Separators
- Multiphase Flow Meters
- Pumps
- Ejectors
- Mixing Devices
- Slug Catchers
- Heat Exchangers
- Valves
- Packed Columns
- Noise/Erosion issues
- FIV-AIV Analysis





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