



Product Line: Ventilation study for conference hall at different types of heat and flow load conditions

Challenges:

Complete flow behavior and heat distribution for the conference hall at different type of load conditions.

Hexahedral mesh for the given cad model has to be carried in ICEMCFD 11.0 and simulations should be carried out in commercial coupled solver ANSYS CFX 11.0.

Inputs Provided:

- 3D CAD model.
- SOW (Statement of the Work) and boundary details for understanding the stages of the project
- Experimental result of temperature probes for one simulation as reference

Methodology:

Simulation has been done with incompressible flow of air with K Epsilon turbulent model. Series of simulations has been carried out at different load conditions as per the customer requirement..

Tools Used:

Geometry: CAD modeling tool has used for cleaning the geometry.

ICEM CFD: Meshing has been done with tetrahedral elements.

ANSYS CFX11.0 : Simulations for different load conditions at conference hall.

Solutions Provided:

- Series of simulations were carried out for different load locations.
- Detailed post processed data, observations along with suggestions for each simulation.

Benefits:

- Continuous interactions and ideas exchange results in early finish of the project.
- Best insight of fluid behavior and temperature distribution for each load conditions made us to judge few configurations without any simulations.
- The design enhancement on these aspects helped Customer to arrive optimal configuration of the cooling system in lesser time.



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