



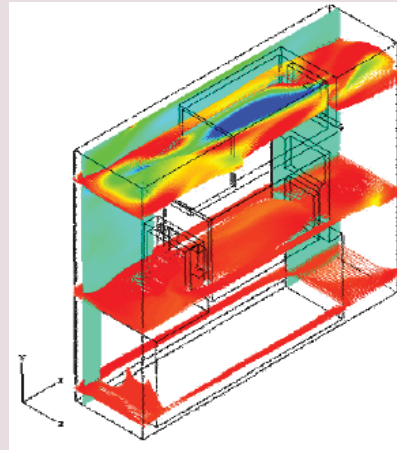
CFD technology development for electro-mechanical systems

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CFD is an important analysis tool that can aid design and development of new and existing electronics products. Apart from visualizing the flow over bodies, it can also be used for thermal analysis and acoustic modeling.



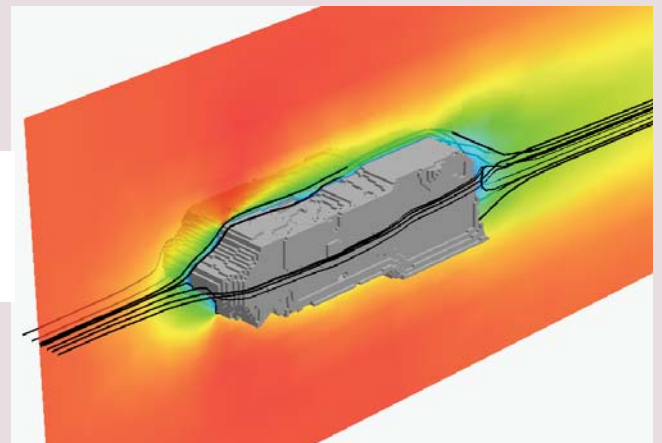
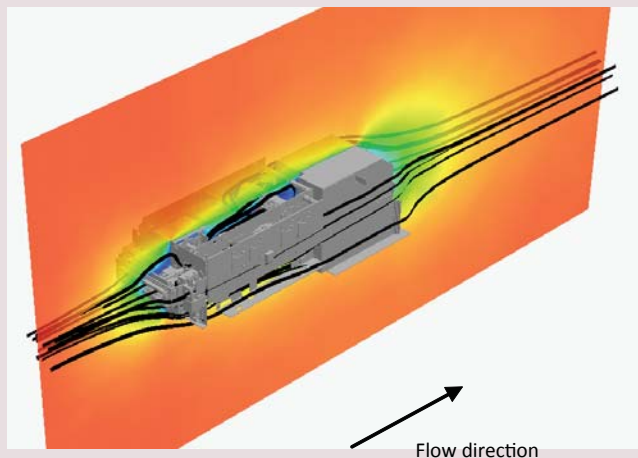
Freestanding ATM



Flow through a CPU

Work has been carried out on flow simulations through an ATM CPU (below) and is now moving on to model more complex electro-mechanical geometrical zones such as an ATM card reader. The card reader geometry is much more complex than that of a CPU, meaning that it is more challenging and time consuming to generate an acceptable mesh to achieve high quality simulations. This has prompted investigation into automatic mesh generation techniques and defeaturing.

Current research involves automatically defeaturing CAD geometry to facilitate hexahedral meshing and reduce computational time and resources whilst capturing the main flow physics. Preliminary work on acoustic modeling has also been instigated by exploring the use of the Eikonal equation for acoustic ray modeling.



Comparison of flow over fully featured and defeatured models