Practical Options for Desktop CFD Using Open-Source Software

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Abstract: *There is an opportunity to develop a centre of competence for Computational Fluid Dynamics (CFD) to meet the demands of the process industries in Trinidad and Tobago. The CFD skills and techniques could be developed and used to foster improvements in the performance of the process industries. A review was undertaken of available open-source CFD software that is available in compiled executables, which runs on the Microsoft Windows line of operating systems, as a means of keeping budgets down while still building up local expertise. Two pre-processors (Gmsh and Netgen), three CFD-solver programs (Elmer, OpenFOAM and OpenFVM) and one post-processor (ParaView) were scoped. From these packages, a useful CFD toolbox consisting of a pre-processor, a solver and post-processor could perform useful CFD simulations on the Microsoft Windows platform. The right combination would depend on the future intentions of the CFD-user.*

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