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Title : DEVELOPMENT OF A FINITE VOLUME ALGORITHM FOR CALCULATION OF THREE DIMENSIONAL INCOMPRESSIBLE TURBULENT RECIRCULATING FLOWS	Document No. PP CF 8904 Date of issue: Oct 1989	
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Abstract : This project aims at developing a general purpose, user-friendly computer code for numerical prediction of three-dimensional turbulent separated flows solving the time-averaged, incompressible Navier Stokes equations in bodyfitted nonorthogonal coordinate systems. A finite volume method is developed which employs the concept of the Semi Implicit Pressure Linked Equations (SIMPLE) of Patankar & Spalding [1], revised for cell-centred variable arrangement and using Cartesian velocity components as dependent variables. Two equations (K- ϵ) models of turbulence [2] will be used to simulate the effect of turbulence on time-averaged flow properties. The data structure and the program are so organised that the code, when run on a Vector m/c, may also exploit the hardware architecture of a Vector processor and consequently the computation is accelerated. Finally, in order to meet the large Computer-Storage and CPU demand for real-life problems, a parallelised version of the code will be generated, compatible to the in-house MK-II FLOSOLVER at NAL for which also the computer resources and hardware need to be augmented.		