

Community activities and new functionalities at OpenFOAM-Extend

Martin Beaudoin , beaudoin.martin@ireq.ca	Hydro-Québec, Institut de recherche 1800 Lionel-Boulet, Varennes, J3X 1S1, Canada
Oliver Borm , oli.borm@web.de	Institute for Flight Propulsion Technische Universität München Boltzmannstr. 15, 85747 Garching, Germany
Bernhard Gschaider , bgschaid@ice-sf.at	ICE Strömungsforschung GmbH, A8700 Leoben, Austria
Hrvoje Jasak , h.jasak@wikki.co.uk	Wikki Ltd, London, United Kingdom
Holger Marschall , holger.marschall@ch.tum.de	Catalysis Research Center, Technische Universität München, D-85747 Garching b. München, Germany
Håkan Nilsson , hani@chalmers.se	Chalmers University of Technology SE-412 96, Gothenburg, Sweden
Henrik Rusche , h.rusche@wikki-gmbh.de	Wikki GmbH, Braunschweig, Germany

Abstract

The goal of the OpenFOAM-Extend Project is to open the OpenFOAM CFD toolbox to community contributed extensions in the spirit of the OpenSource development model. This presentation collects various topics related to the way the OpenFOAM community currently works together and how this collaboration may develop in future.

Two and a half years ago, the first Stammtisch (Usermeeting in Germany) was held at the university in Mosbach, Germany. Since then many events took place with considerable success in various German cities (and in other countries). We will give a brief overview of the current activities, a typical agenda and some lessons learned in organising these events in order to motivate the attendees to organise local user meetings in their regions.

The OpenFOAM Summer School held in Zagreb in September 2009 where 15 young researchers worked closely together on their own research topics while (at the same time) building the cornerstone of an OpenFOAM community. Some snapshots as well as some success stories will be shown to answer the questions of prospective candidates: “What is going on at the Summer School” and “How may I benefit?”.

SCM (Source Code Management) has established itself via Subversion in the OF-community and proven to be beneficial for updates and collaborations. We will give a short overview of the available technologies and decisions made by the administrators of the OpenFOAM-Extend in this respect.

The next logical step is a formalized approach for keeping track of bugs. The usage of the bug-tracker that is currently used with openfoam-extend and the benefits of this technology will be demonstrated.

Validation and testing is an important aspect of any evolving simulation platform like OpenFOAM, ranging from software validation through unit tests up to numerical validation using predefined test cases. A short segment of the presentation will demonstrate how to build such a test harness using CMake/CTest/CDash, and show how to share the test results on openfoam-extend with the rest of the OF-community.

Currently, the installation of OpenFOAM can be difficult, but the development of the bootable USB-Stick

had considerable impact on conducting trainings worldwide, distributing the conference proceedings and early deployment of OpenFOAM. We will highlight the features of the new USB-Stick and the underlying packaging technology.

All of the above efforts benefit from a platform that makes them accessible in a unified way. Here, the new community webportal shall enable all OpenFOAM community members to gather information about OpenFOAM, its development in universities, institutes and companies as well as current events as courses, seminars and meetings taking place worldwide. The webportal provides all functionalities needed to organize individual community members, groups, service providers and companies (that might be spread over the world) in order to bring them together in common fields of activities and stimulate targeted development projects and sound discussions.