preCICE – A Library for Coupled Simulations on Massively Parallel Systems

Benjamin Uekermann*, Hans-Joachim Bungartz*, Florian Lindner†, Miriam Mehl†, and Klaudius Scheufele†

*Department of Informatics, Technical University of Munich
Boltzmannstrasse 3, 85748 Garching b. München, Germany
e-mail: {bungartz,uekermann}@in.tum.de,
web page: http://www5.in.tum.de

†Institute for Parallel and Distributed Systems, University of Stuttgart
Universitätstrasse 38, 70569 Stuttgart, Germany
e-mail: {florian.lindner,miriam.mehl,klaudius.scheufele}@ipvs.uni-stuttgart.de,
web page: http://www.ipvs.uni-stuttgart.de

ABSTRACT
preCICE is an open-source coupling library for partitioned multi-physics simulations. This includes, but is not restricted to fluid-structure interaction. The software offers methods for equation coupling, communication means, and data mapping schemes. Ready-to-use adapters for well known commercial and open-source solvers, including OpenFOAM, SU2, Calculix, Fluent, and COMSOL, are available. Adapters for in-house codes can be implemented and validated in only a few weeks. In this contribution, we give an overview of the functionality of preCICE and present recent extensions.

REFERENCES
