



MMP



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NMP.2013.1.4-1: Multiscale Modelling Platform: Smart design of nano-enabled products in green technologies

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Deliverable description from the project proposal

Summary report on education efforts: Report on internal and external workshops and webinars programme to 'educate' partners and interested external parties on the MMP platform, usage and developments.

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Introduction

The goal of MMP project is to develop integrated modeling platform targeted especially to multiscale and multi physics problems. To educate the partners and potential third-party users, the different activities described in this summary report have been conducted. This included internal workshops for project partners, participation and co-organization of public workshops in collaboration with other projects in the cluster, development of series of three publically available webinars on MuPIF platform, and other related effort involving educational activities.

Internal Workshops

Three internal workshops have been organized to educate project partners on MuPIF platform.

1. The first workshop was organized by Access in M6, June 17, 2014. It focused on overviews of processes, models, and simulation tools to be used. During the workshop the API specification has been discusses together with the first prototypic simulation scenario. 14 participants have joined the workshop. The workshop materials (presentations) are available on the internal MMP wiki [1]. The workshop has been summarized in D4.7.
2. The second workshop, organized by CTU in M12, Dec 2, 2014, has been targeted to model integration using MuPIF platform and related API design. In addition to presentations on the subject, the interactive training session has been organized in a computer lab, where individual participants have got a practical experience in platform installation and usage by running prototypic simulation chains. The workshop materials and examples are available for download from internal MMP wiki. Workshop attendance was 12 participants. The workshop has been summarized in D4.8.
3. The third internal workshop has been organized by TU/e in M18, June 16, 2015. The agenda focused on distributed simulation scenarios in cloud/grid environments. Two approaches have been presented, one based on HTCondor middleware, and the other based on internal development. Finally, the graphical tool has been presented allowing to model HTCondor workflow and generate the submission scripts. Altogether 10 partners have participated. The workshop has been summarized in D4.9.

Public Workshops

- MMP has organized Cluster workshop and Multiscale modelling cluster launch. It joined Industrial Technologies 2014 Conference in Athens (M4), Apr 9-11, 2014. The project coordinators from 5+1 cluster have participated. The objectives and vision of the cluster, conferences and workshops, and information sharing have been discussed. The cluster workshop has been summarized in D4.5.
- MMP is participating and co-organizing Plugfest, an integral part of external workshop entitled “Multiscale Simulation: from Materials through to Industrial Usage” with other projects in the cluster. The workshop will be held in M33, Sept 5-7, 2016.

Public Webinars

Three public webinars have been organized to primarily serve as web-based platform learning resource. The webinars have been announced in advance on public MMP pages, e-mail announcements have been send across the cluster projects. The latter webinars have been also announced on social networks. All webinars have been recorded and recordings are publically accessible from public MMP website or from YouTube [2].

- The first webinar on the “Generic platform design” focused on description of object-oriented design of the MuPIF platform and its application and data APIs and has been organized in M20, Aug 25, 2015. Details were documented in deliverable D4.10.
- The second webinar “Build your own API”, organized in M25, Jan 20, 2016, has been centered on API design and its implementation by individual simulation tools. Details were documented in deliverable D4.11.
- The last webinar “Perform a platform run”, given in M30, June 13, 2016, illustrated the distributed platform runs on simulation scenarios developed in WP2 and WP3. Details were documented in deliverable D4.12.

Other Efforts

- CTU in Prague continuously educates over 6000 students including 200 in a PhD programme. Two PhD students at CTU and outside of MMP project have started using MuPIF platform in their research work. J. Stránský used MuPIF in a coupled discrete-continuum simulations of fracturing media. S. Šulc uses coupled CFD-mechanical tasks, simulating fire effects on steel structures.

- Two graduation reports have been finalized at CelSian in 2015: M. Del Hoyo Arroyo, L. Thielen, “Development and application of a multi-scale modelling platform (MMP) for CIGS selenization process optimization” and C. Perez Salmeron, A. Lankhorst, “Transient CFD simulations of the thermal behaviour of an RTP furnace for selenization of CIGS”. Both students are from UCLM (Universidad de Castilla-La Mancha) in Spain.
- MuPIF at CTU is presented to students in elective courses dealing with numerical and finite element analysis (course code NAK2) and material modeling (course code UPM).
- CTU has announced the availability of commercial, one-day intensive course on multi-scale and multi-physics software integration using MuPIF platform. The course is announced on MuPIF platform website (www.mupif.org).

Conclusions

Educational efforts targeted firstly on partners within MMP project. After several months, they were generally able using MMP platform for their tasks. External parties may benefit from public workshops and public webinars. Project partners have been training selected PhD students on MMP platform for solving their coupled problems. The intensive one-day course on MuPIF is being offered to public.

References

- [1] MMP Dissemination activities, http://www.mmp-project.eu/wiki/index.php/WP4_Dissemination_and_Exploitation, 2016
- [2] MMP webinars, <http://www.mmp-project.eu/doku.php?id=webinars>, 2016