

WP 3 Project Deliverable D3.4

Beta version of data management for the first prototype



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Abstract	
Keywords	

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1 Overview

This report gives a summary of the functionality of the first prototype of the data management. All sources developed by SiTu are provided on a CD-Rom attached to this report.

2 Abbreviations

VFS	Virtual Fires Simulator
CFD	Computational Fluid Dynamics
DM	Data Manager
CGNS	CFD General Notation System
DMC	Data Manager Controller

3 Layout of the data management

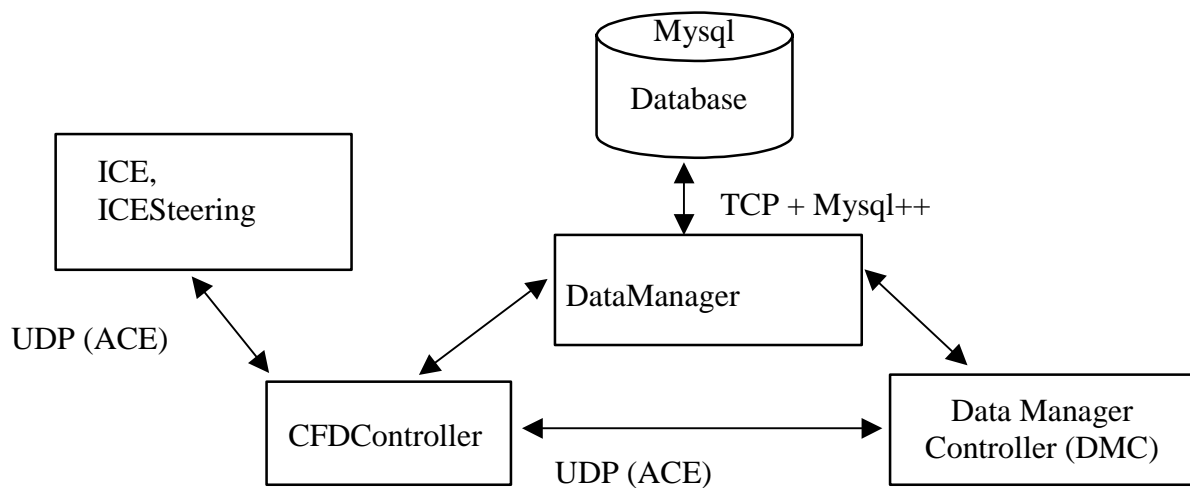


Figure 1: Layout of data manager

The three main modules are the DM, DMC and the CFDController. The DMC is implemented as a Covise module and is responsible to communicate with the CFDController and the DM. The CFDController starts and stops the CFD Simulation and uploads the CGNS results using the DM.

4 Functionality of first prototype

4.1 Database

The MySQL server was set up on the machine 129.27.63.31 and the database 'vfs' on this server was configured according to the layout specified in the design models for the geometry related part [2, p.11, Figure 5] and the CFD related part [3, p.4].

The database was filled with one set of precalculated CFD data as CGNS files from an early version of ICE for testing purposes.

4.2 DM

The DM provides following functionality:

- Upload/download of binary data files
- Creation/deletion of tunnels
- Adding/removing scenarios to tunnels
- Adding/removing missions to scenarios
- Upload/download CFD-results for simple missions without branches
- Handling of the visualisation models and their associated OBJ/STL/texture files

4.3 DMC

The communication between the CFDController and the DMC is implemented with the Adaptive Communication Environment (ACE) [1].

The DMC provides following functionality:

- Connection to the Database using the DM
- Connection to the CFDController to start/stop defined missions
- Download CFD results from the database and deliver data to visualisation-plugin using the ReadCGNS Covise module

4.4 CFDController and ICESteering

The communication between CFDController and ICESteering is implemented with the Adaptive Communication Environment (ACE).

The CFDController provides following functionality:

- Allow connection of one DMC and one CFD-Simulator.
- Start/Stop CFD-Simulation

- Upload new CFD results to the database and notify DMC, that new results are available

5 Integration Status

All software modules were integrated on SuSE Linux 8.1 and into the Linux version of Covise.

6 Literature/Links

- [1] <http://www.cs.wustl.edu/~schmidt/ACE.html>, ACE Adaptive Communication Environment, Inventor Douglas C. Schmidt
- [2] Deliverable D 3.1: Specification of Geometrical Database
- [3] Deliverable D 3.2: Specification of CFD Database