Ensight4Matlab: read, process, and write files in EnSight® Gold format from C++ or MATLAB®

Andre Schmeißer¹, Daniel Burkhart², Dominik Linn¹, Johannes Schnebele¹, Manuel Ettmüller¹, Simone Gramsch¹, and Walter Arne¹

¹ Fraunhofer Institute for Industrial Mathematics ITWM, Kaiserslautern, Germany ² ITK Engineering GmbH, Germany

Summary

Ensight4Matlab lets you read, process, and write files in EnSight® Gold format (CEI software, Inc 2017) from your C++ or MATLAB® code (MATLAB 2016).

Data in the EnSight Gold format represents a 3D mesh and variable fields defined over the domain of this mesh. The mesh and/or variables may be either static in time or time-varying (transient). The EnSight Gold format is used to save e.g. CFD and CAE data in research and industrial applications, and widely supported by many software tools.

This package provides a C++ based library to process e.g. CFD data sets in EnSight Format, which you can directly link (statically or dynamically) to your application. Additionally, it provides a language binding for MATLAB to easily use the C++ library in your MATLAB scripts, e.g. for analysis and rapid prototyping.

We have extensively used this library to integrate our own simulations of fiber dynamics (e.g. (Gramsch, Schmeißer, and Wegener 2016)) with CFD data computed by the commercial CFD solver ANSYS® Fluent (ANSYS 2016).

References


