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Projects

Recent progress

Future roadmap
Projects

Simulation

Model Representation

General

Tools

Repositories

OpenCMISS

CellML

FieldML

OpenCOR

CellML

FieldML

PMR2

CAP

MAP
OpenCMISS

- Multi-scale, multi-physics simulation.
- Spatio-temporal simulation of organs (rigid; soft tissue; fluids, porous tissue, interactions)
- Targeted at multiple HPC architectures, shared and distributed memory architectures, accelerated systems.

- Currently supports for the following problem types:
  - Laplace, Poisson, linear elasticity, finite elasticity, advection-diffusion, fluid dynamics (Navier-Stokes, Stokes flow, Darcy flow), electrophysiology
  - Both static and dynamic, linear and nonlinear.

- Recent work
  - Python interface
  - Contact mechanics
  - Interfacing
  - Further electro-physiology progress
  - CFD: 1D branching Navier Stokes, Poisseuille flow, validation with analytical solutions.
  - FieldML 0.4 support
  - GitHub
  - Maintenance
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CellML API

Recent progress:
- Release of version 1.9 and version 1.10
- First binary release
- Some SED-ML support ... Simulation Service
- Text input service
- Other incremental improvements
- Draft randomness/uncertainty in models (VPH-Share project)
- Draft of CellML 1.2
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Cmgui

Recent progress:
- Cmgui 2.8 released
- Cmgui API
- APIs for regions, fields, materials, time
- Fitting and optimisation
- Groups/Regions refactoring
- CAD
- Tetrahedral meshing
- FieldML 0.4 support
- Zinc on other browsers
- Buildbot usage
- Much maintenance and refactoring
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General
- MCTA - Model and Test Agent
- Requirements Tracker
- GitHub
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P IEEE
Model Representation

CellML

- CellML API
- CellML Spec

FieldML

- FieldML v0.4 released
  - External data, text, HDF5
  - More element shapes and interpolation options in library
  - Import

- Uncertainty representation draft
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PMR2  CAP  MAP

Physiome Model Repository software
- Software to be deployed on web server for running a model repository
- Currently Historically focused on CellML models
- Aims:
  - Broader format support (e.g. FieldML, SBML, Image data (DICOM) etc.)
  - Reliable version management
  - Metadata aware searching and model discovery

Recent developments
- Support for FieldML precursor format
- Zinc Viewer embedded in web page for model
- Maintenance
- Rudimentary webservices

Next
- Better Meta-data annotation indexing and searching
- Support for broader range of data and artifacts related to models, e.g. image data, demonstration multimedia
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