Apollo

Project Explorer features

**confidential**

Revision number: 1

Date:

Name: P. van der Velde

# Goal

The goal for the Apollo Project Explorer is to provide the user with a stand-alone UI for the creation and exploration of Apollo projects.

# Features

1. Operations
   1. Global
      1. Create a new project
      2. Open
      3. Save
      4. Close
   2. On project
      1. New data set
      2. Open project in CAD
      3. Properties
   3. On data set
      1. Copy data set
      2. Open data set in CAD
      3. Lock
      4. Unlock
      5. Properties
2. Workflow
   1. CREATE NEW PROJECT
   2. OPEN PROJECT
   3. SAVE PROJECT
   4. ADD NEW DATA SET
   5. GENERATE SCRIPT
   6. SHOW DATA SET IN CAD

Ideas

* Allow setting of properties (not on geom)
* Allow dealing with variables / parameters
* Script creation
* Install components and add them to a data set
* Project goals; type + variables + tolerances / errors
* Undo / redo
* Data generation (running simulations, processing experimental data)
* Help system
* Configuration files
* Auto update
* Checks on file integrity?
* Indicate if data set was auto-created or user-created
* Run mode of data set (batch, directly, postponed etc.)
* State of data set (running, non-running, waiting, sleeping, loaded,m etc.)
* Copy-on-write state (copied but not written, partial write, complete write)
* Data sets in a data set (e.g. simulation, experiment etc.)
* Reset of data set
* Delete of data set
* Revert data set to save point
* Locking data set / unlocking data set
* Copy system generated data set
* Ability to check a file for loadability (i.e. if the current version of the explorer / CAD can actually load the file. Loading can fail because of version or missing components etc.)
* Auto-add missing components
* Scheduling of data sets
* Data set running info (time, memory etc.)
* Components per project / data set
* Feedback from running experiments

UI Screenshots

* Project base (geometry etc.) has:
  + Base data (Geometry, Physics models, Boundary conditions, Initial conditions etc.)
  + Visualizations (way data should be shown)
  + Solvers / Equations necessary to translate known data into other known data (e.g. calculation of Mach number from speed and temperature etc.)
* Individual data blocks have:
  + Visualizers necessary to translate between local data format and project data format
  + Additional tools necessary for generation / translation of data
* Expecting to show the user a graph of the project with:
  + The project initial data (geometry, physics models etc.) as the main node.
  + Each child node is a single experiment. Experiments that are directly connected to the parent are user created (?)
  + System created experiments (child experiments) are shown in a different colour (lighter) and cannot be edited (but can be selected)
  + User can drag nodes around (connection stays)
  + Connections cannot be changed. This would imply changing the parent of an experiment which leads to mayhem.
  + User can drag-and-drop nodes onto another node. This changes the links. The dropped node becomes the child of the drop-target node. This only works for user created nodes. Bonds between the child nodes and the dragged node are maintained (important for system generated experiments).
* The graph control should allow
  + Selecting a node. All parent nodes should also be highlighted (but not selected) in weaker colours as they are further away from the selected node. This allows the user to quickly see where the data comes from. The highlighted node will be surrounded by a glow in the system highlight colour.
  + Allow auto filtering of nodes through the search control. ‘disable’ nodes that do not match with the search criteria. In this case nodes aren’t really disabled but more faded out a bit. Selecting a ‘faded’ node should still be possible
* When a node is selected the properties for that node are displayed in the properties dialog (use data binding to link).

Questions:

* What should nodes display? Do we allow a node to expand or do we show stuff in the properties section of the application?
* How do we show tools / visualizers / data?