Modelling biorefineries

Background

The change to a green society requires new processes for the production of chemicals. Whilst the traditional refineries would have mined raw oil as input producing fuel and intermediate platform chemicals, biorefineries have bio-materials as feedstock and will product substitutes for the fuels, possibly the same platform chemicals, but possibly also others, like furfuranes but also fine chemicals.
The Process Systems Engineering group has a long history in computer-aided modelling and simulation. Lately the emphasis was on multi-scale modelling and ontology-based modelling and simulation software. The group is also part of the FME “Bio4Fuels” with the task to generate a simulation environment for biorefineries. The group is also active in experimental fermentation work where we produce bio-jet fuel.

Description

The objective is to utilise the modelling tools we have developed and to generate models in this environment for the simulation of bio-refineries. We start with modelling our existing plant and then extend into more complex operations. This implies the modelling of stirred tank reactors and separation units like distillation and electrodialysis supported membranes.

Supervision

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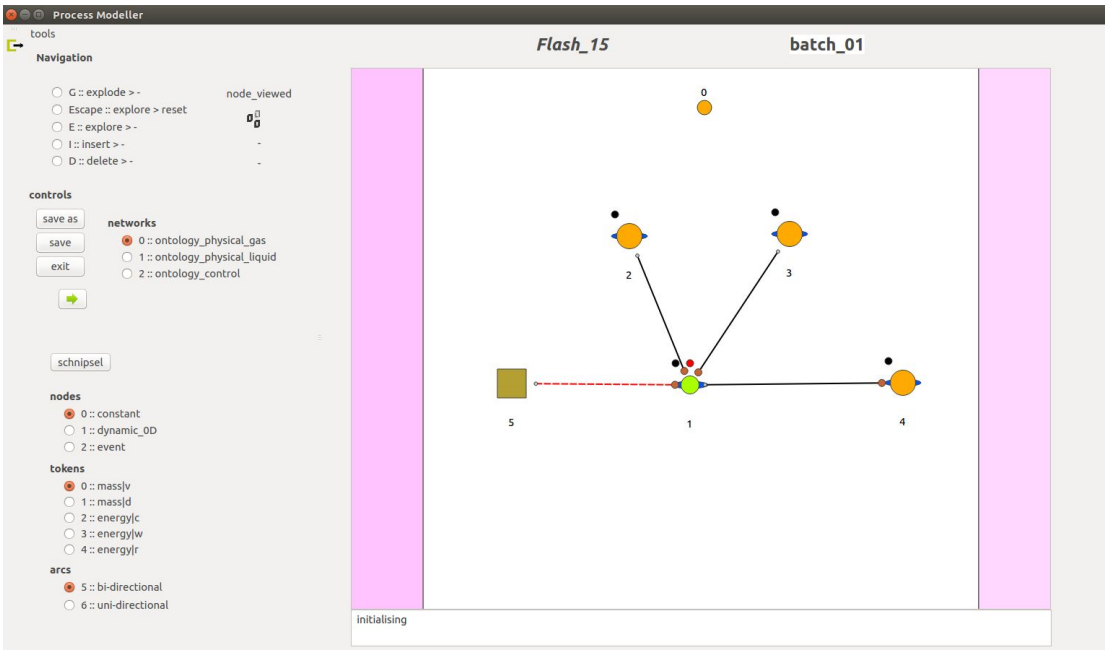

figure 1 : view of the software interface