6. Implementation issues

"Batch processes and hybrid systems" aspect

Hybrid systems specific issues (1)

Continuous controllers and Programmable Logic Controllers:

- Two different ways for programming, two kinds of controllers
  - even if the controller has the two capabilities, two different languages
  - interaction between the two:
    - discrete state = configuration = defines which procedure is activated
    - continuous variable thresholds => fire the corresponding transition

=> Interacting controllers
  - inter task communications
  - Local Area Network primitives
Hybrid system specific issues (2)

Continuous variables:

- **Time and spacial consistency**
  - continuous variables are sampled,
  - real time constraint => only valid during a time interval
  - solved by the field bus => synchronous behaviour: read, compute, write in one cycle

- **Cont. controllers in charge of**
  - computing the control laws, and the thresholds
  - when a threshold is detected => signal (message) to PLC => fire the transition
  - receives control from "PLCs" and dynamically changes the cont. laws