SemAdapt progress, 2 May

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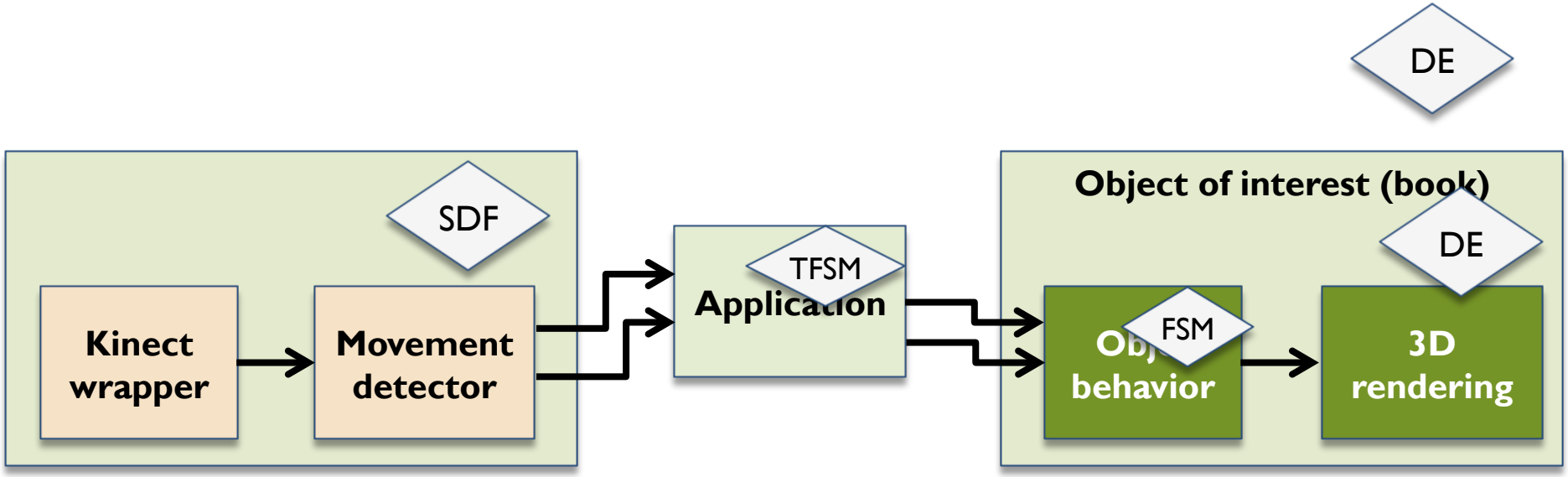
Reminder: our goal

- Context: application manipulating objects in 3D environments, using gestures captured by a Kinect (U. Mons)
- Problem: compose discrete events and continuous behaviors
- Proposal:
  - use Supélec's ModHel'X tool to model this application
  - execute this model with the Kinect and the 3D rendering in the loop!

Scenario for user interaction

- 2 applications:
  - book reading: the user can open/close books
  - book management: the user can move books
- A hand movement: hand closed, move the hand
- Two actions:
  - right hand movement → move (to move a book)
  - left hand movement → swipe (to open/close a book)

Overall model

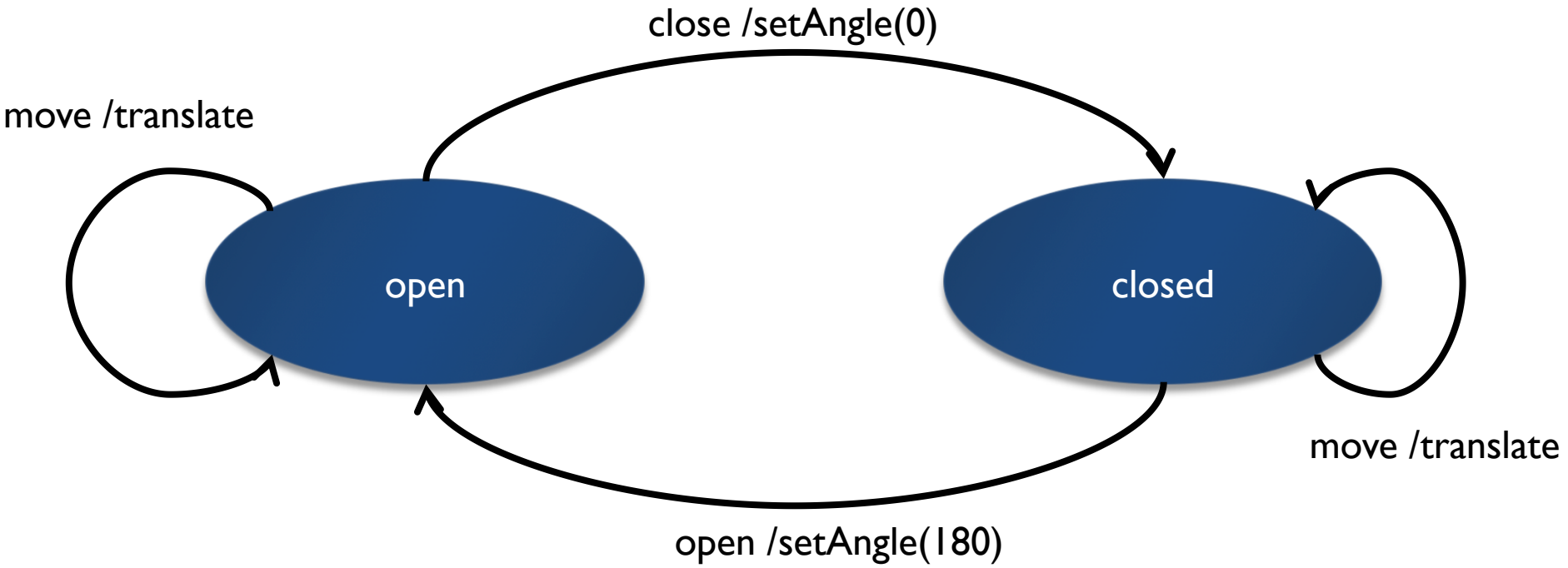


position and status of the hands (x, y, z, open/closed)

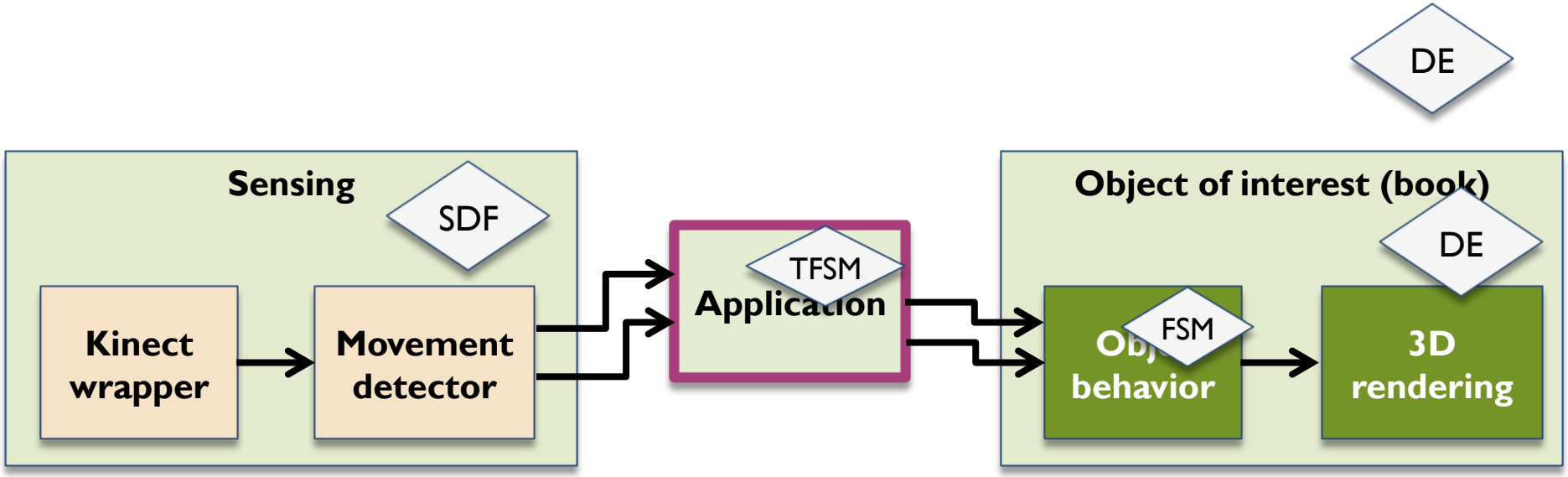
movements of the hands: move L/R

actions swipe, move

Object (book) behavior



Overall model

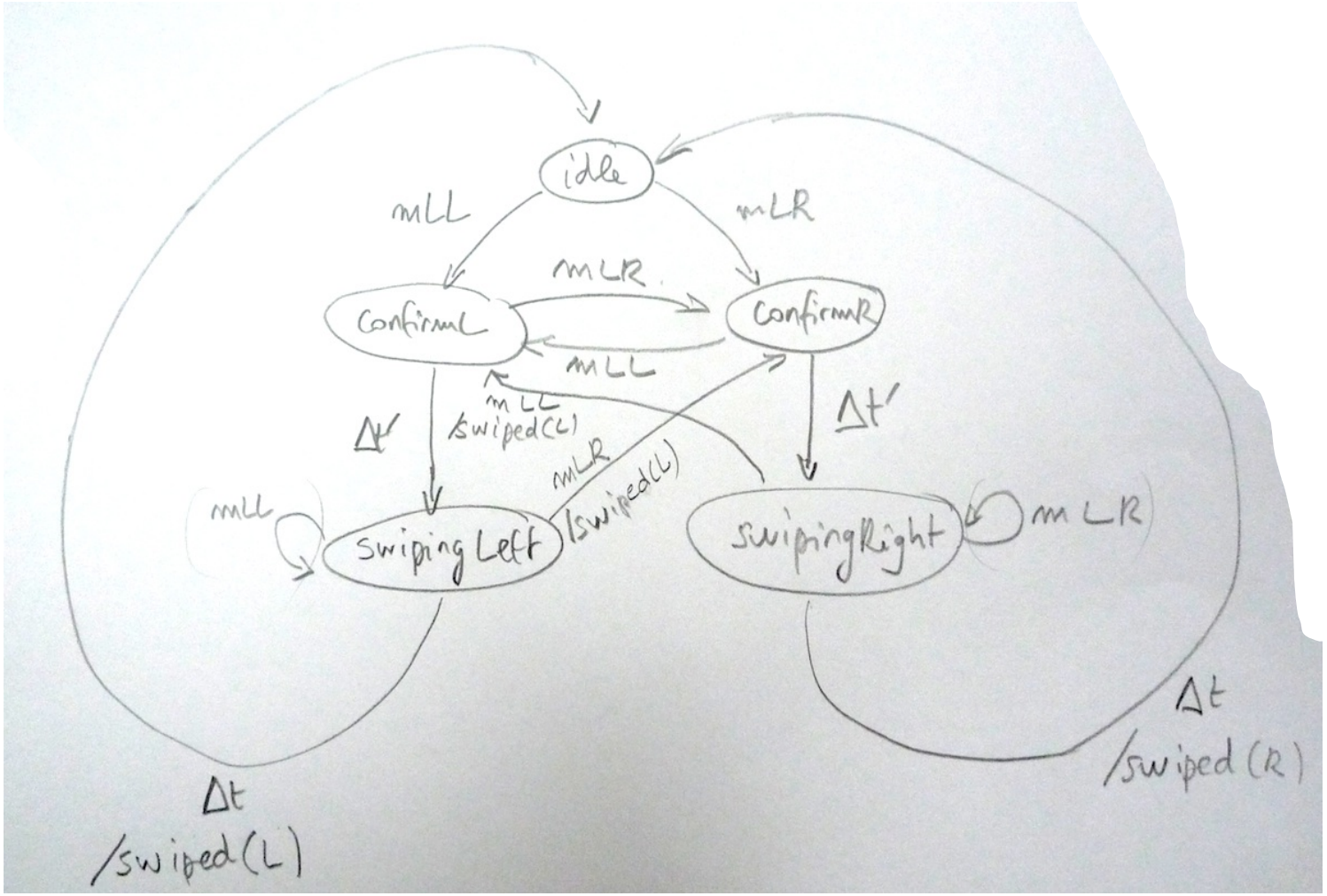


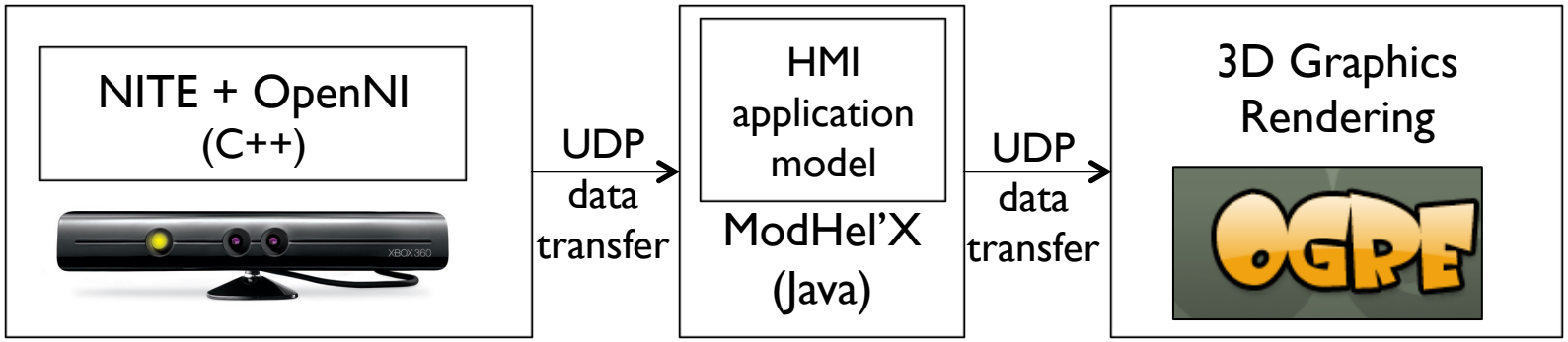
position and status of the hands (x, y, z, open/closed)

movements of the hands

actions

Model of Application #1




NITE + OpenNI
(C++)
UDP
data
transfer
HMI
application
model
ModHel'X
(Java)
UDP
data
transfer
3D Graphics
Rendering
OGRE

Where are we?

- Work done so far:
  - refined the model of the application
  - started implementing the needed building blocks
  - gesture detection (Kinect) and 3D animation working
  - first iteration on the layout of a research paper

- Work ahead:
  - implement the submodels
  - finish to implement the adapters allowing one to embed the submodels into higher-level models
  - build the top-level model


MERCI!
THANK YOU!
FRAPAR.