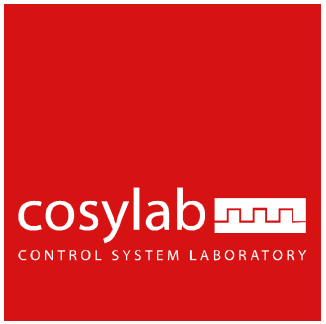


FECOS

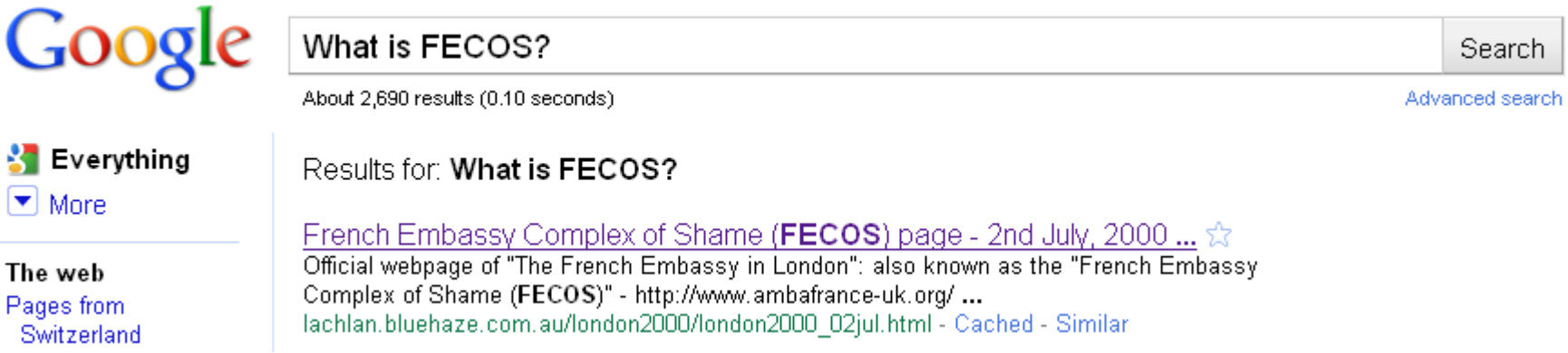
Matej Sekoranja (matej.sekoranja@cosylab.com)

… on behalf of CSL MA team

the best people make cosylab

WHAT is FECOS?

- **Google says…**



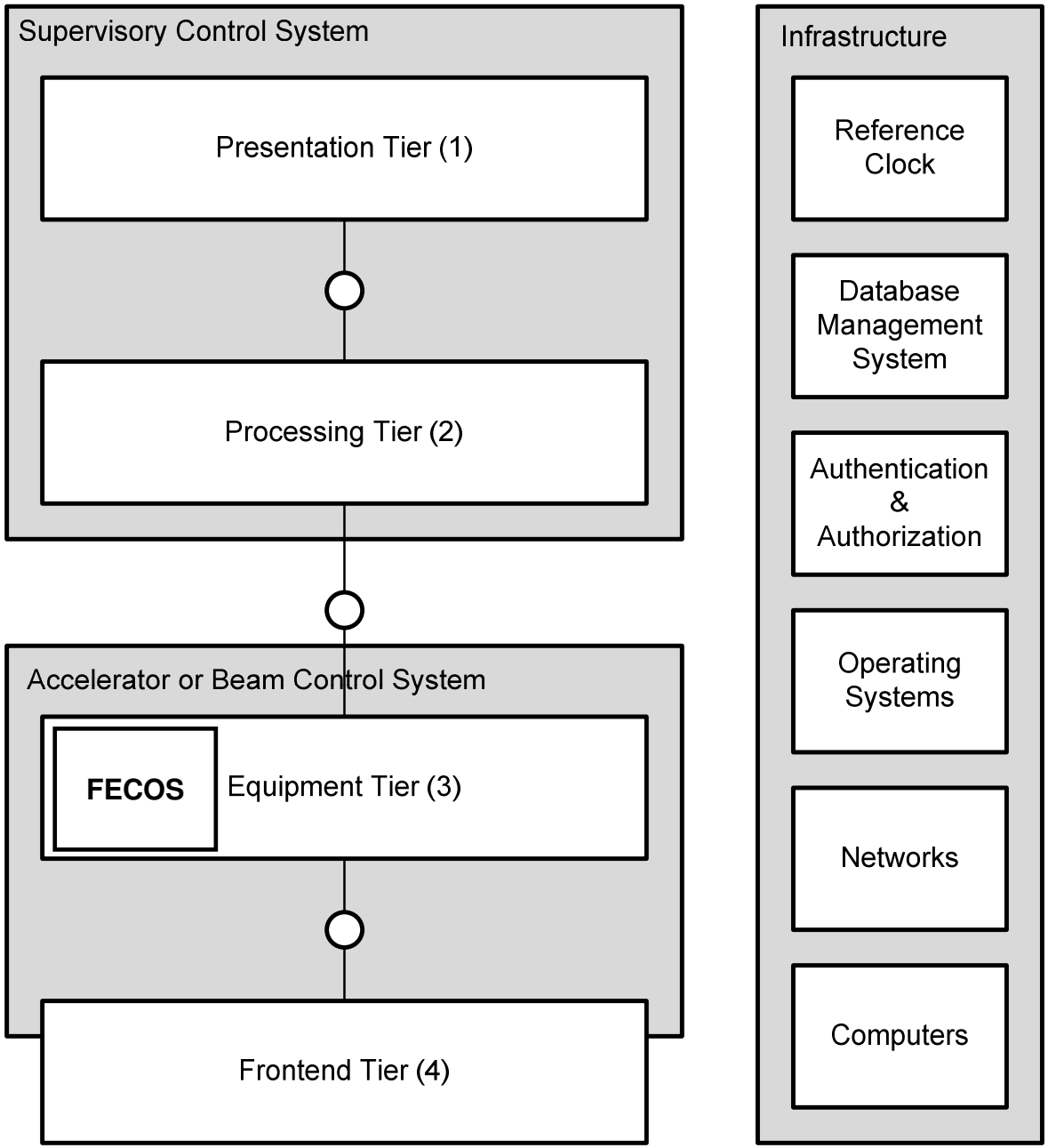
- **… well, MA FECOS is something else ☺**

WHAT is FECOS?

- **Front End Control System**
  - purpose built NI LabView Real-Time framework

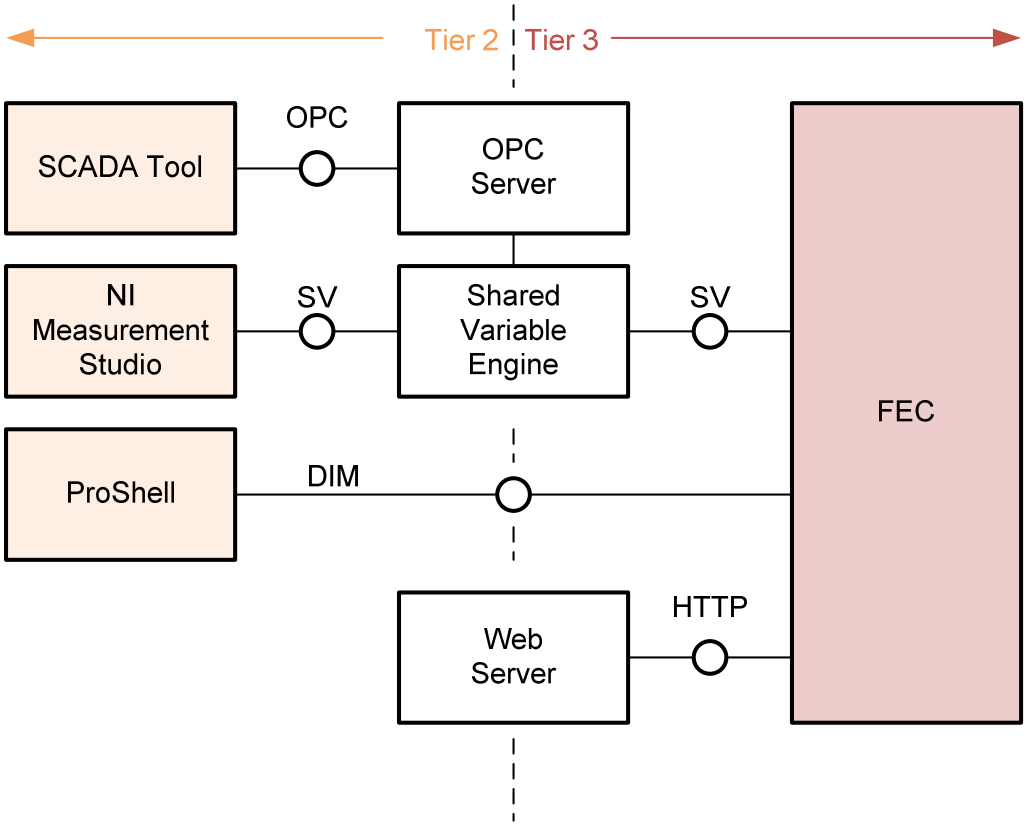
LabVIEW
Real-Time
Graphical Development,
Real-Time Results

WHERE is FECOS?



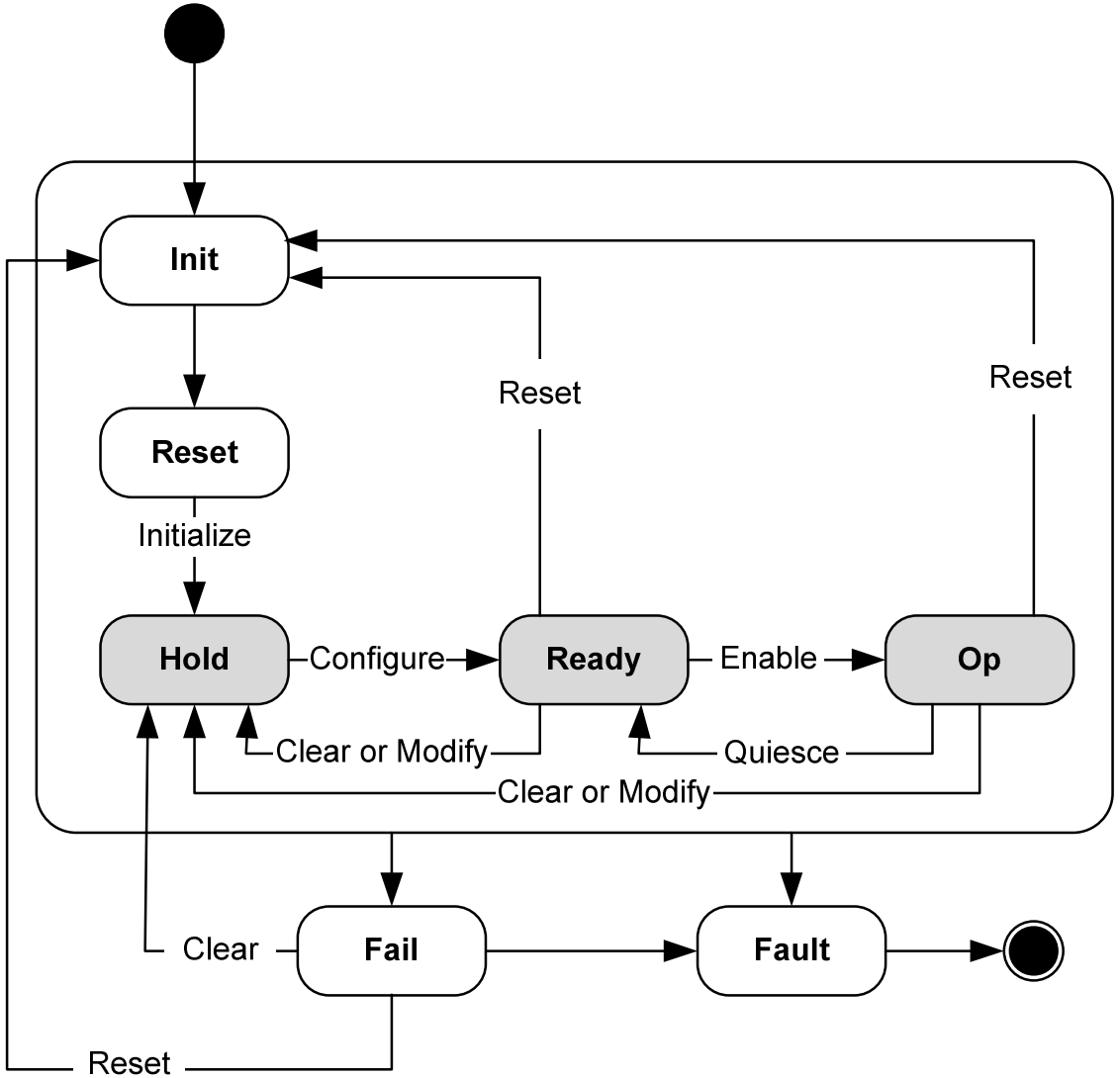
WHY FECOS? (1/3)

- FECOS provides uniform communication:
  - communication protocol is completely hidden from the programmer
  - autonomously selected by the framework



WHY FECOS? (2/3)

- FECOS provides uniform operation:
  - each component implements general state machine



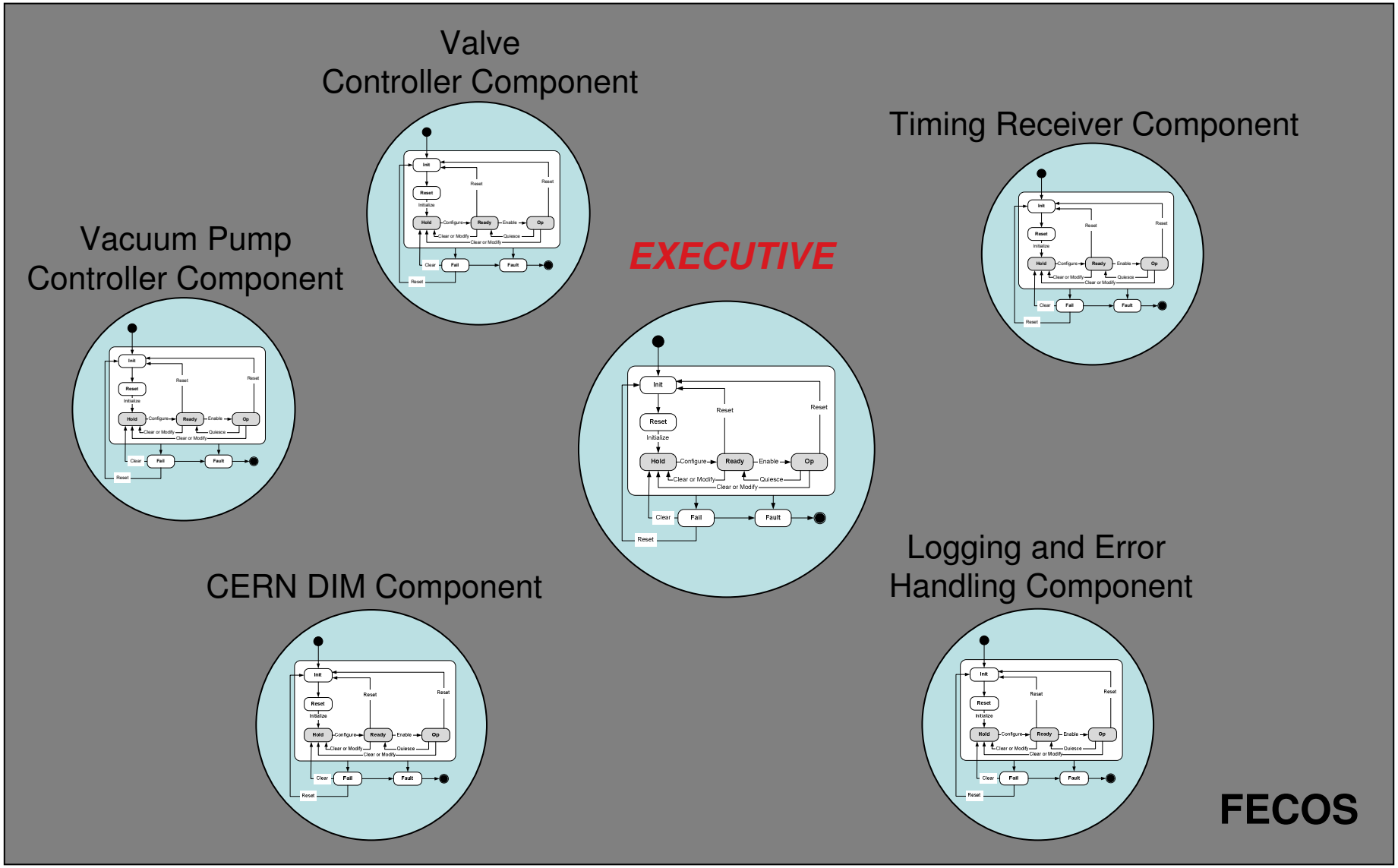
WHY FECOS? (3/3)

- FECOS provides standard “services” :
  - logging and error reporting
    - local to file and remote (via DIM)
  - timing system support
  - standard configuration services
    - local file, HTTP
  - watchdog and host health-status monitoring
  - … etc. …

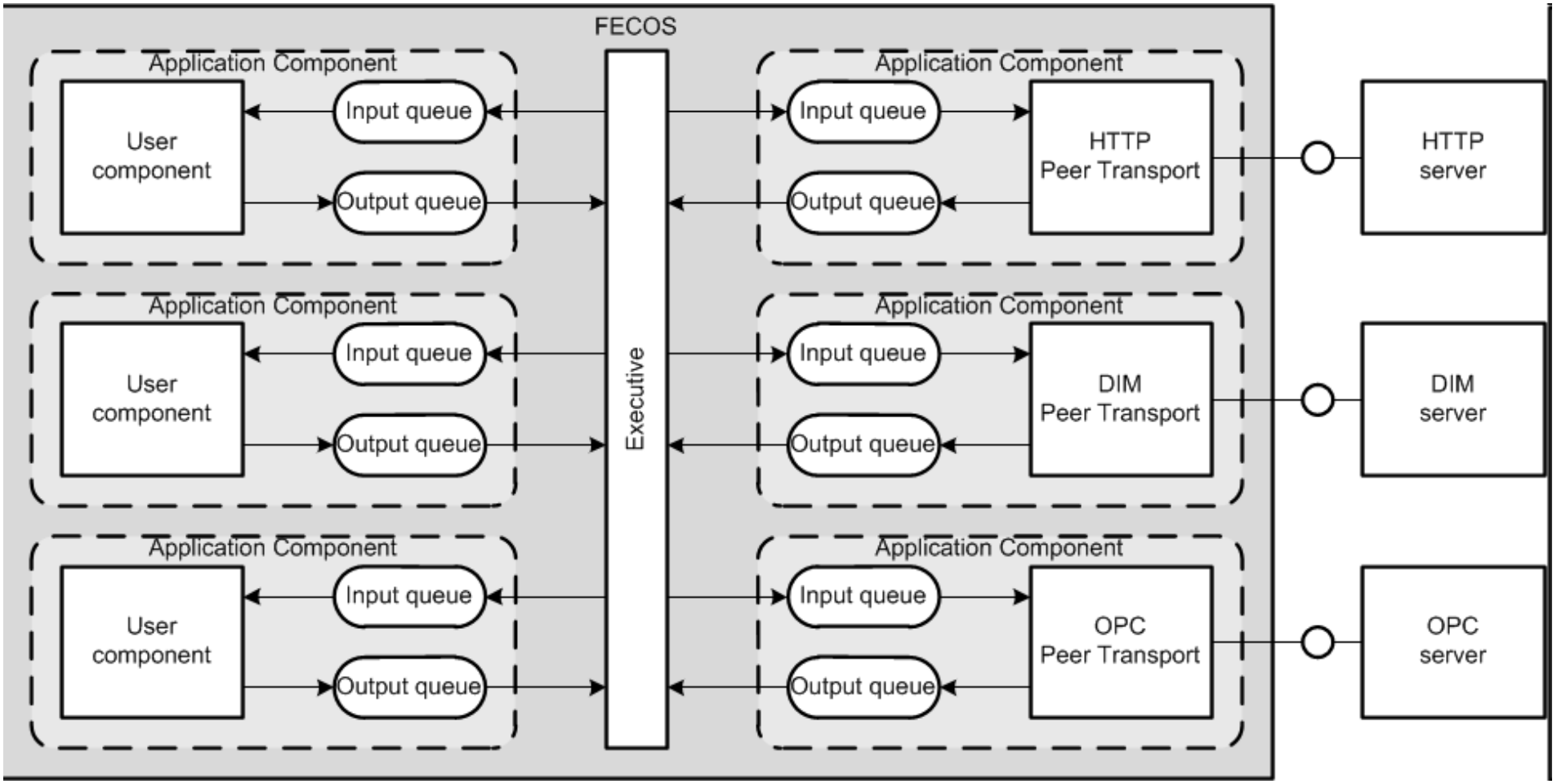
Programmer focuses on control logic

Architecture (1/2)

- Modular, component based, event driven



Architecture (2/2)

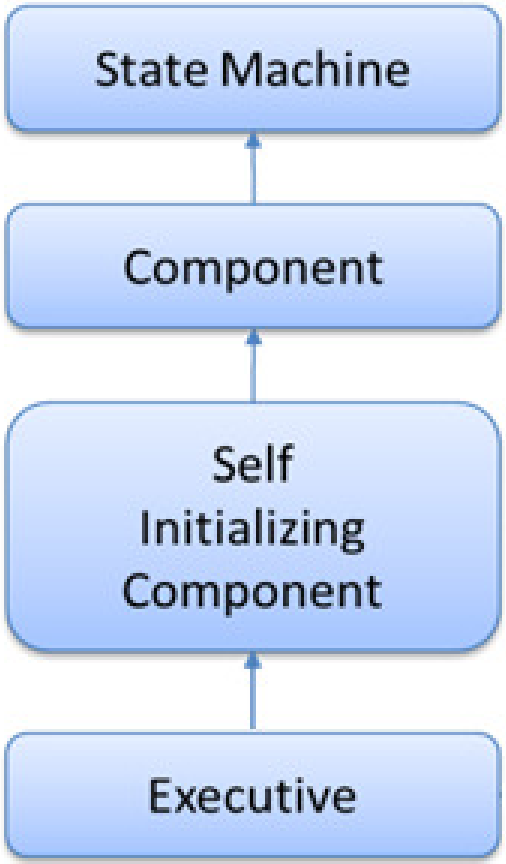


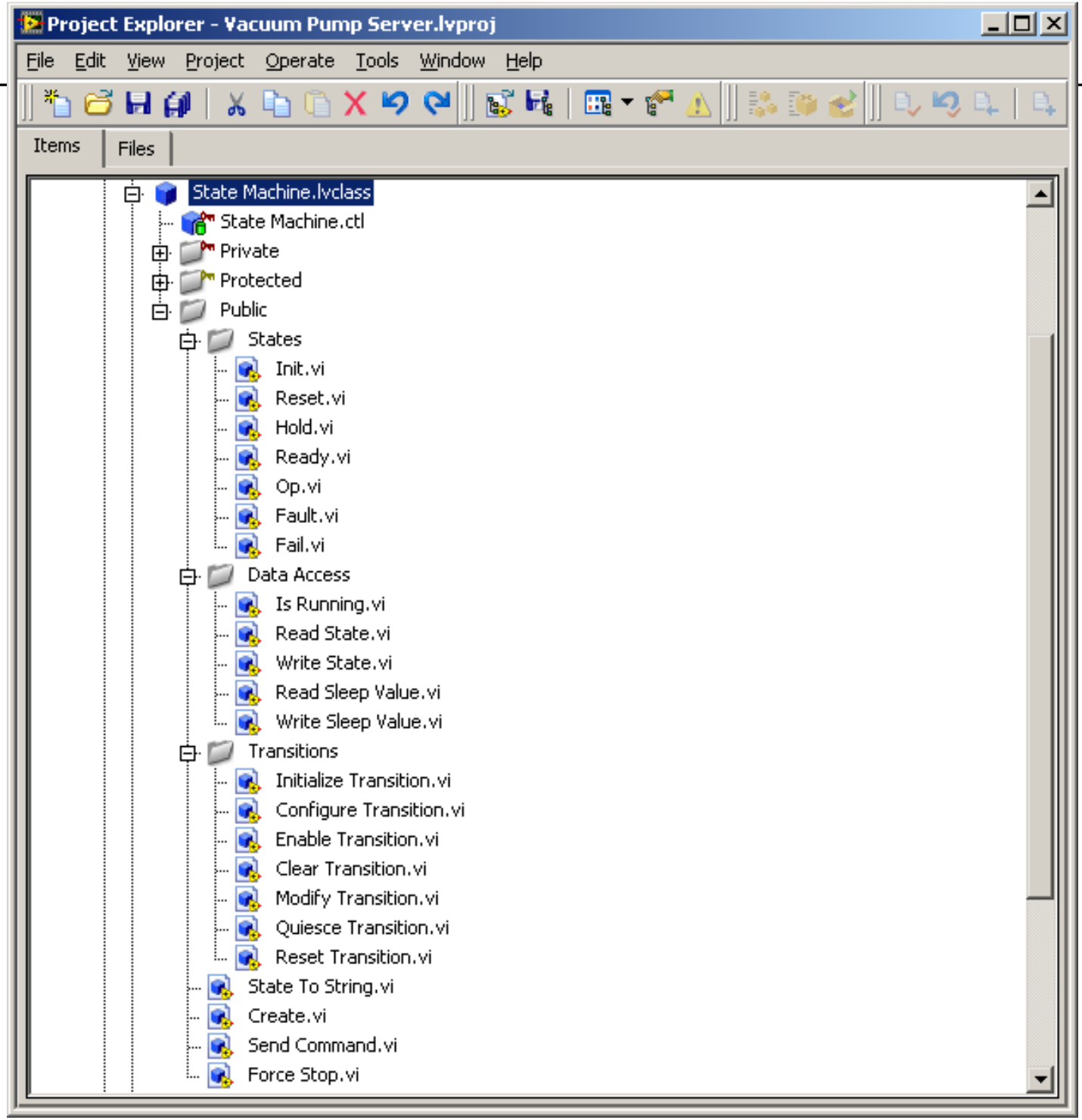
OO design (LVOOP) (1/2)

- Based on LVOOP
  - LV2009 needed to work on RT
  - Extensive use of “by reference”
    - We do not want to make “by value” copes of classes!

… see next slide …

OO design (LVOOP) (2/2)




Project Explorer - Vacuum Pump Server.lvproj
File Edit View Project Operate Tools Window Help
Items
Files
State Machine.lvclass
State Machine.ctl
Private
Protected
Public
States
Init.vi
Reset.vi
Hold.vi
Ready.vi
Op.vi
Fault.vi
Fail.vi
Data Access
Is Running.vi
Read State.vi
Write State.vi
Read Sleep Value.vi
Write Sleep Value.vi
Transitions
Initialize Transition.vi
Configure Transition.vi
Enable Transition.vi
Clear Transition.vi
Modify Transition.vi
Quiesce Transition.vi
Reset Transition.vi
State To String.vi
Create.vi
Send Command.vi
Force Stop.vi

WHEN FECOS?

- Design finalized until September
- FECOS beta planned in October!

Thank you!