Toolkit Dedicated to System Discovery

Bastien DROUOT, Vincent LEILDE , Jean-Philippe SCHNEIDER, Jean-Christophe LE LANN, Joël CHAMPEAU

Lab-STICC UMR CNRS 6285 ENSTA Bretagne contact: joel.champeau@ensta-bretagne.fr

Issues

- Partially observable real system
- Various sources of information about the real system
- Working hypothesis hardly modeled and simulated

Benefits

- ✓ Recreate the real system (Morphose)
- ✓ Creation of hypothetic system based on model federation (Role4All)
- ✓ System modeling (Pimca) and discovery (Morphose) through iterative validation of assumptions

System Modeling

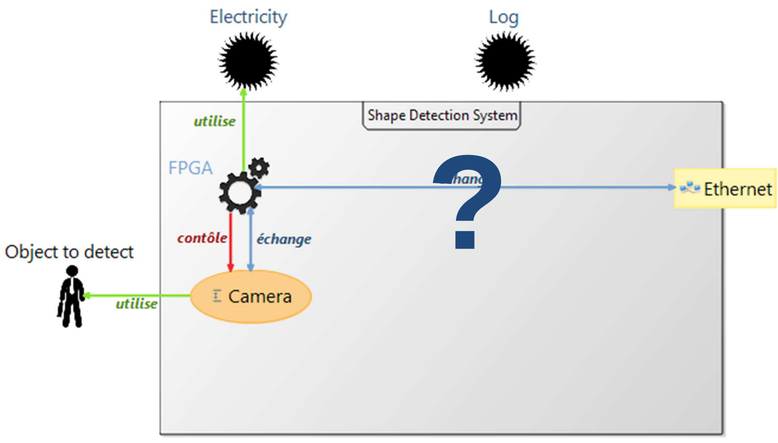
- ➢ System modeling with Pimca DSL
- ➢ Various tool with heterogeneous data (Datasheet, Nmap, log files…)

Model consolidation

- ➢ Relation between model elements and data
- ➢ Iterative federation of model elements according to observations
- ➢ Create hypothetic models

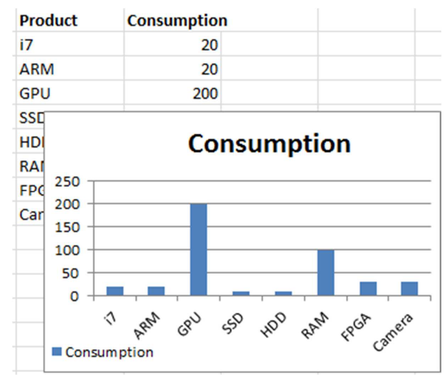
System simulations

- ➢ Simulate the hypothetic models
- ➢ Compare real data and simulated data
- ➢ Select the hypothetical models consistent with the real data



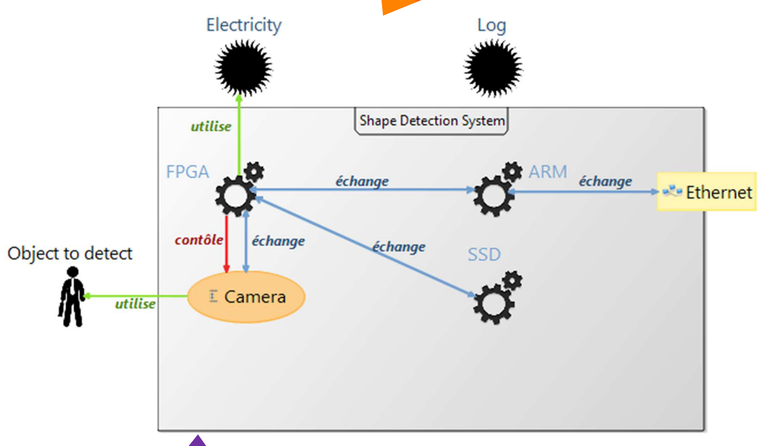
Incomplet model

Product	Consumption
i7	20
ARM	20
GPU	200
SSD	
HDD	
RAM	
FPGA	
Camera	

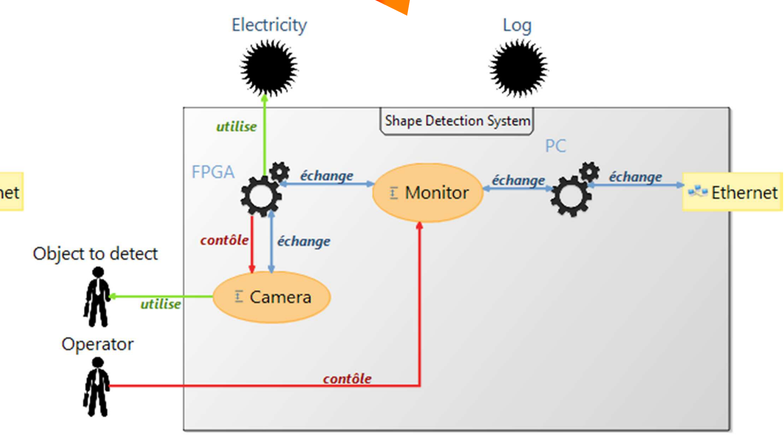


Not modeled information

Role4All

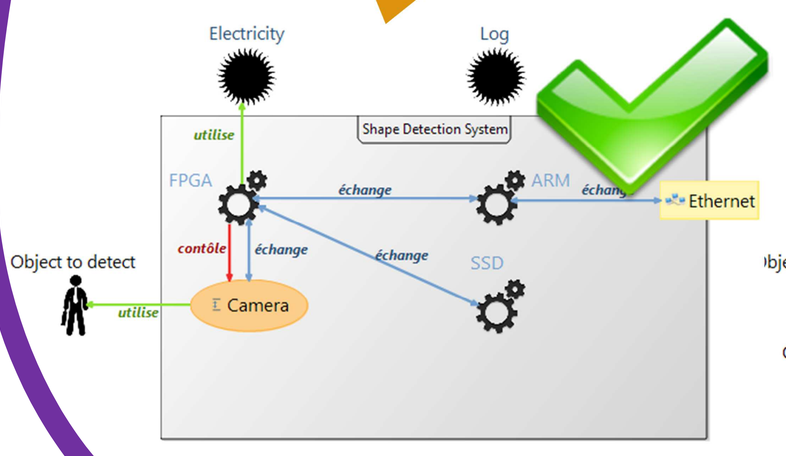


Hypothetic model 1

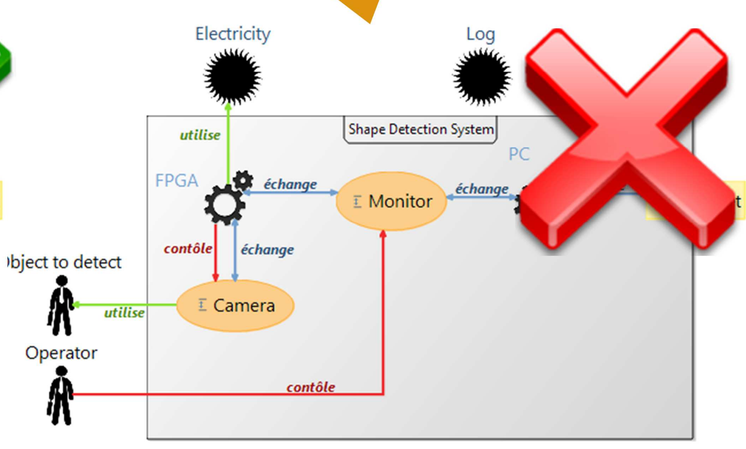


Hypothetic model 2

Morphose



Hypothetic model validated



Hypothetic model reject