

# Cyber-Physical System Model

Vulnerabilities

Hazards

CPS Assets

*Exposure*

EPSS

CVSS

Interdependencies

Mitigation  
Probabilities

*Impact Probability*

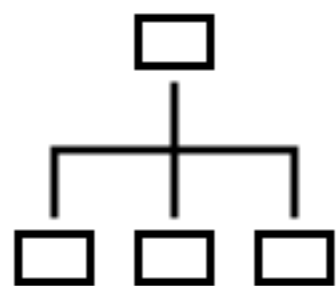
CVSS

Criticality

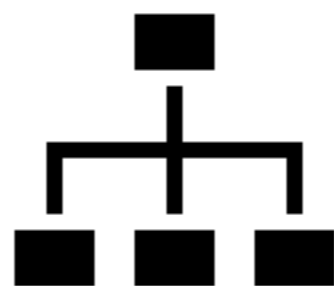
Interdependencies

**1. Model attributes  
inform BN updates**

*Bayesian Network (BN) Models*



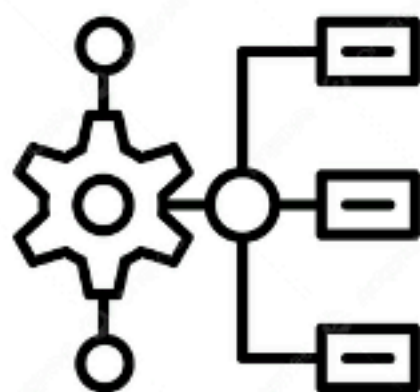
Bayesian Attack Graph  
(BAG)



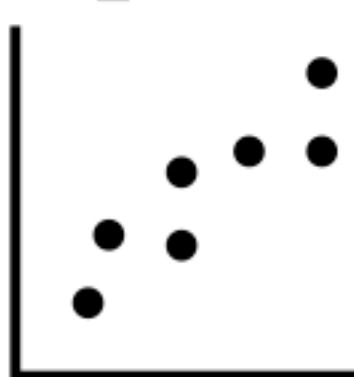
Bayesian Impact Graph  
(BIG)

**2. Candidate countermeasure  
portfolios update model attributes**

**Final  
Recommended  
Countermeasure  
Portfolio**



Multi-Objective Optimisation



Pareto-Optimal Candidate  
Countermeasure Portfolios



Frequency-based  
heuristics