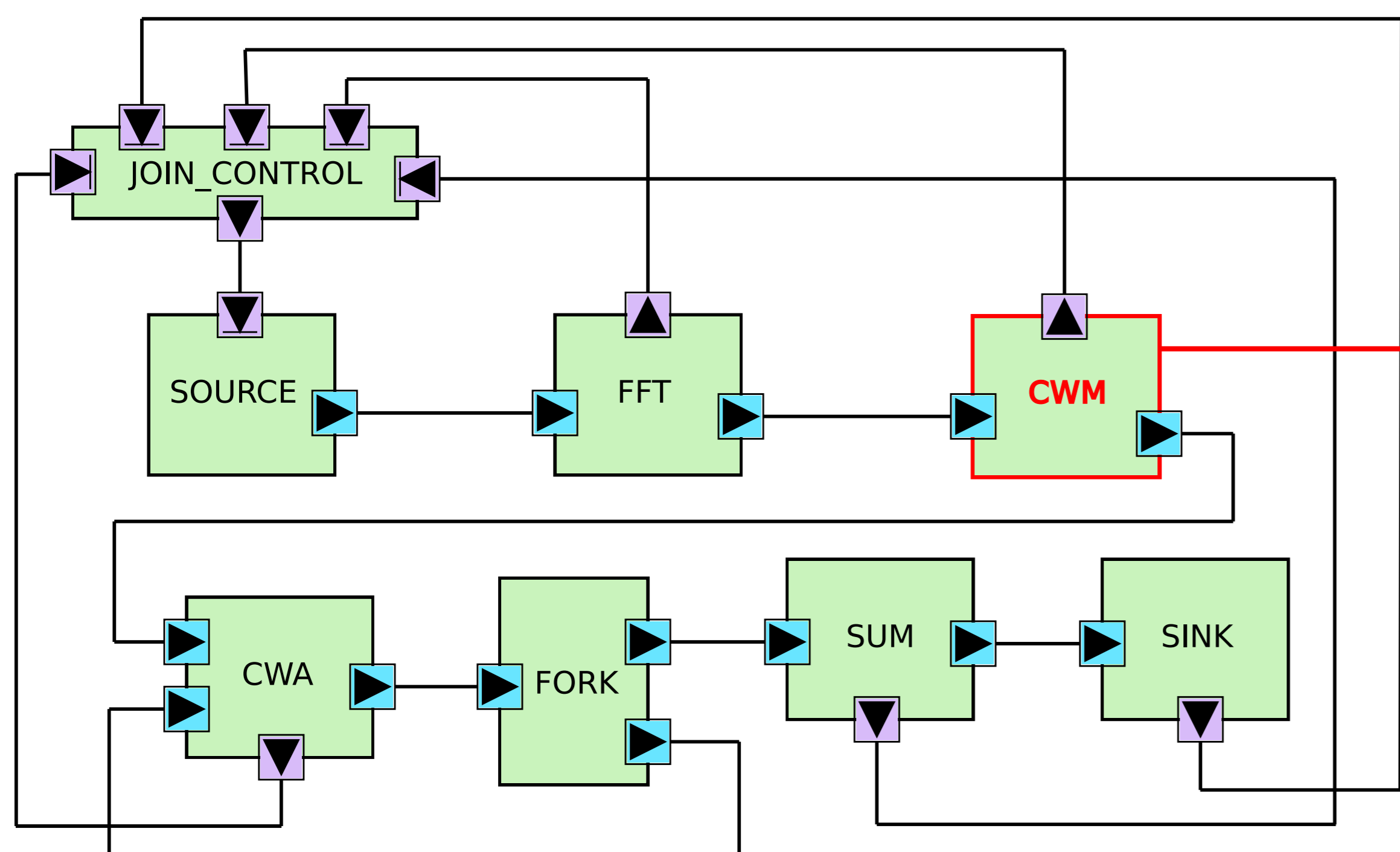
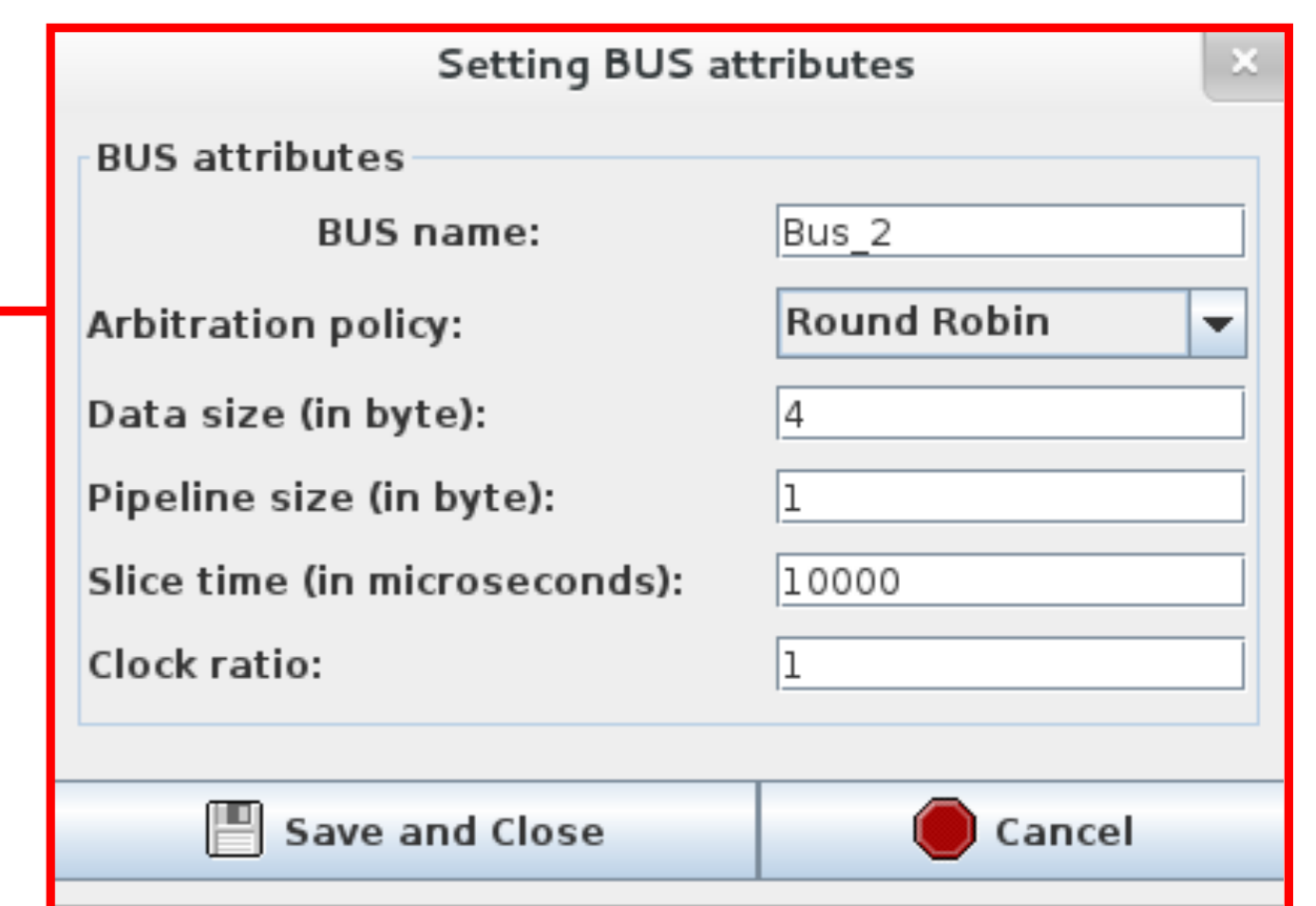
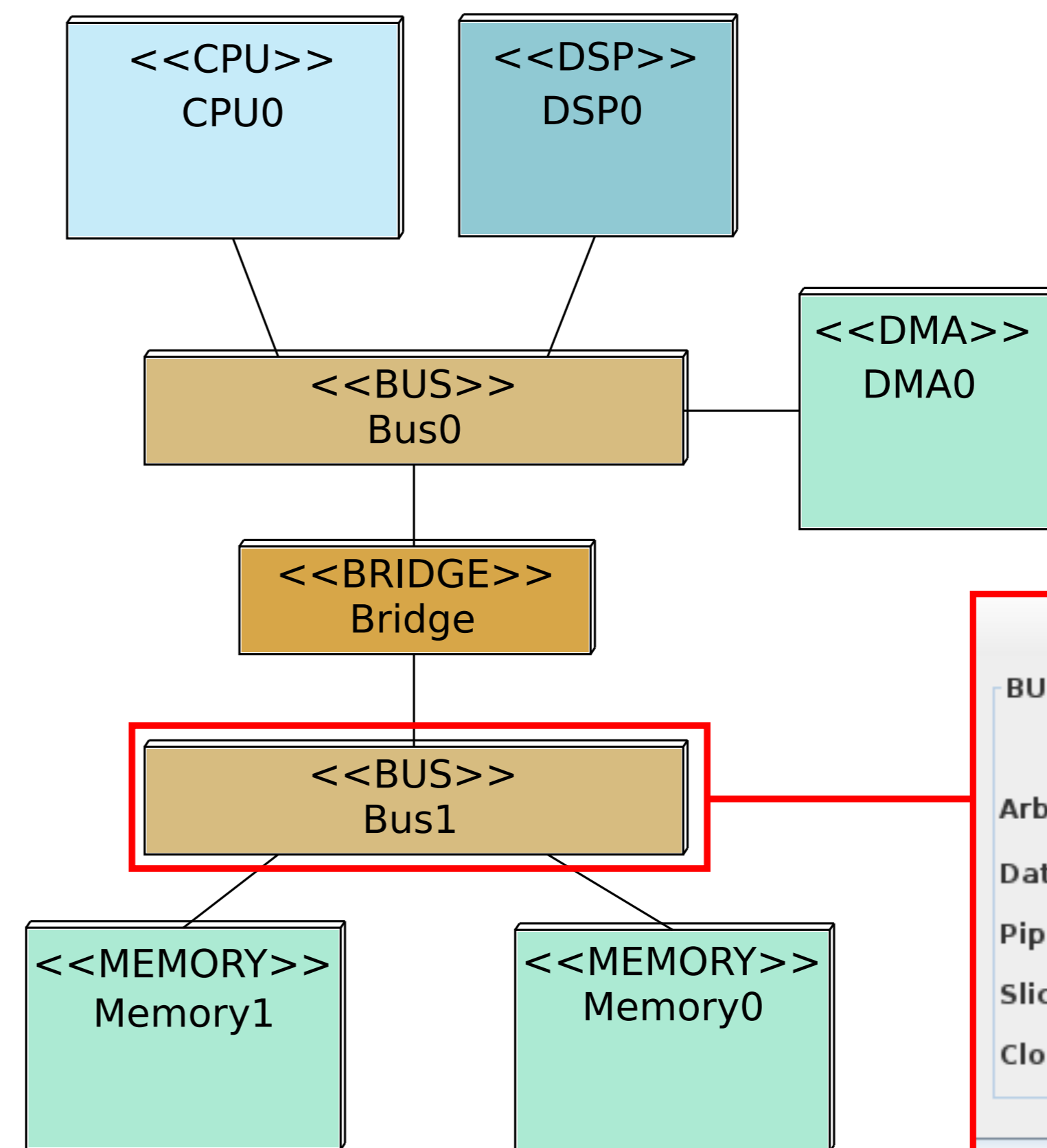
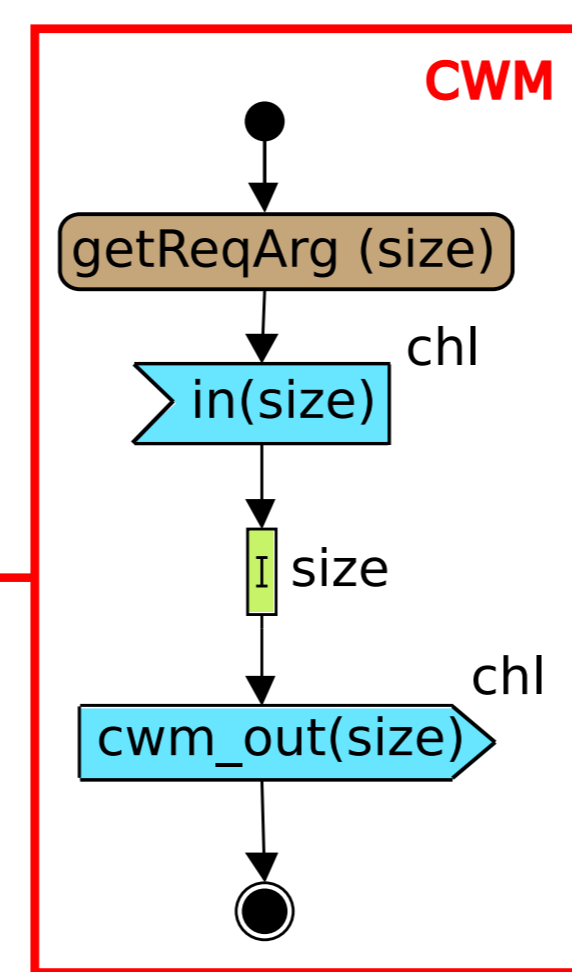


## System Level Modeling: Application, Architecture, Mapping



### Application (workload):

Dataflow graph with data and functional abstractions. Algorithms are described using abstract cost operators that process the amount of data exchanged between nodes.



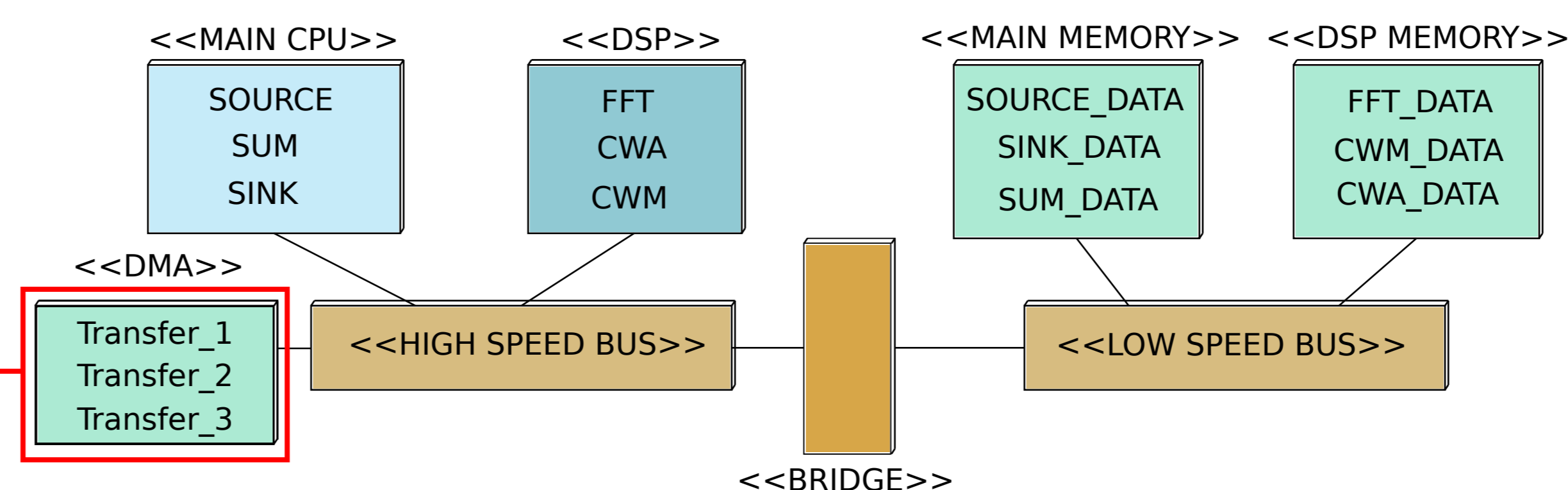
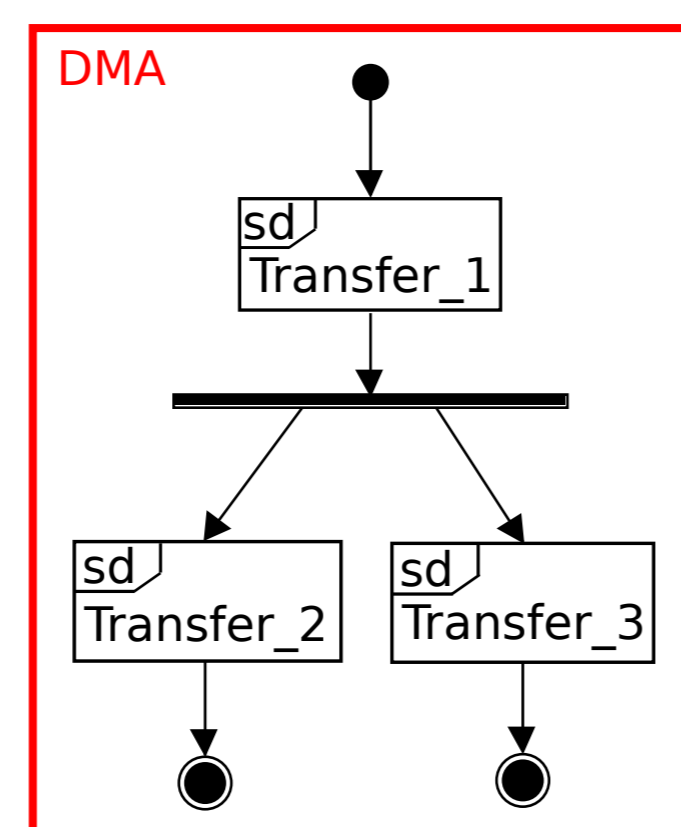
### Architecture (structure):

Set of interconnected generic hardware nodes, decorated with parameters (e.g., bus width, arbitration policy) for simulation and code generation purposes

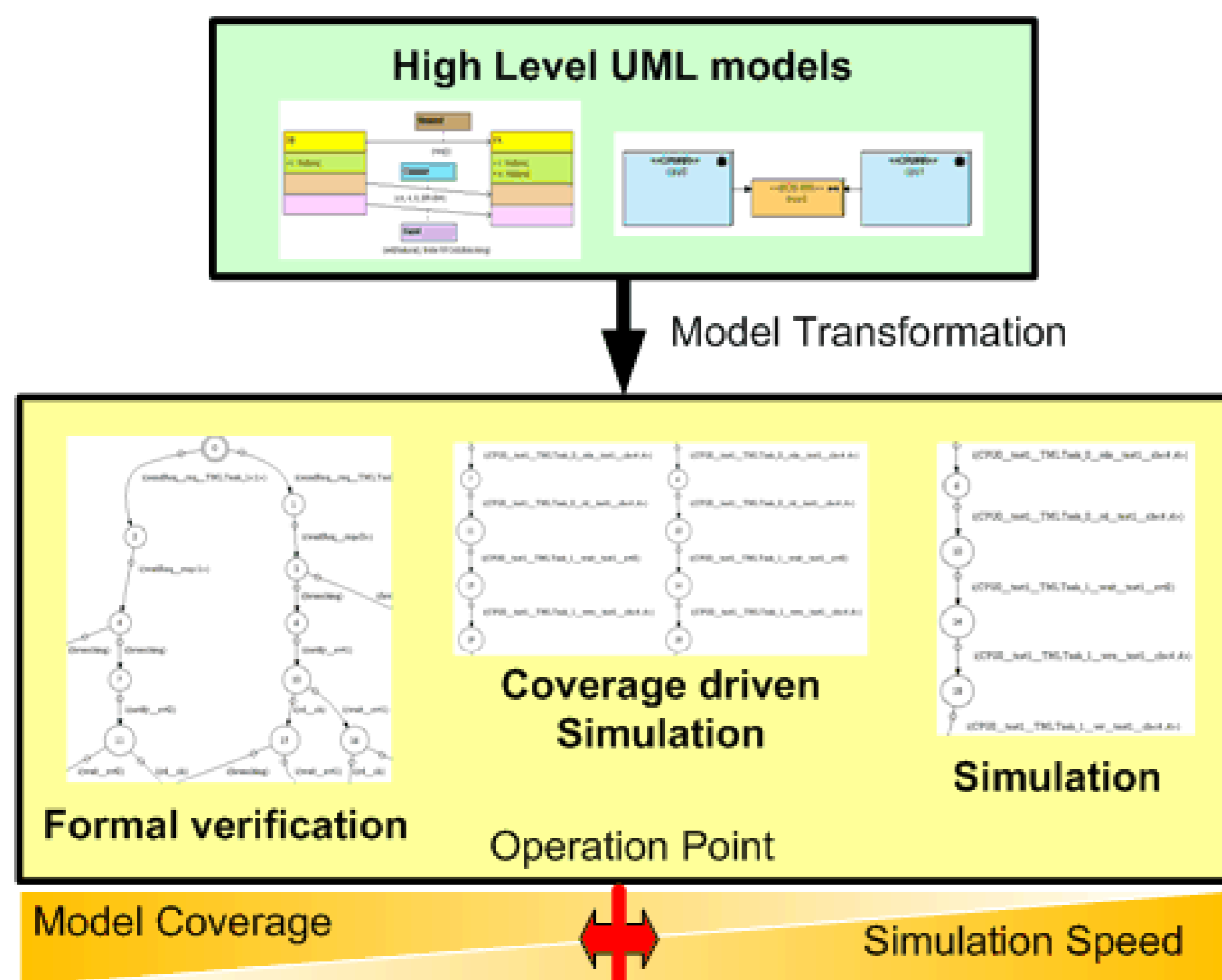
### Mapping

#### (workload + structure):

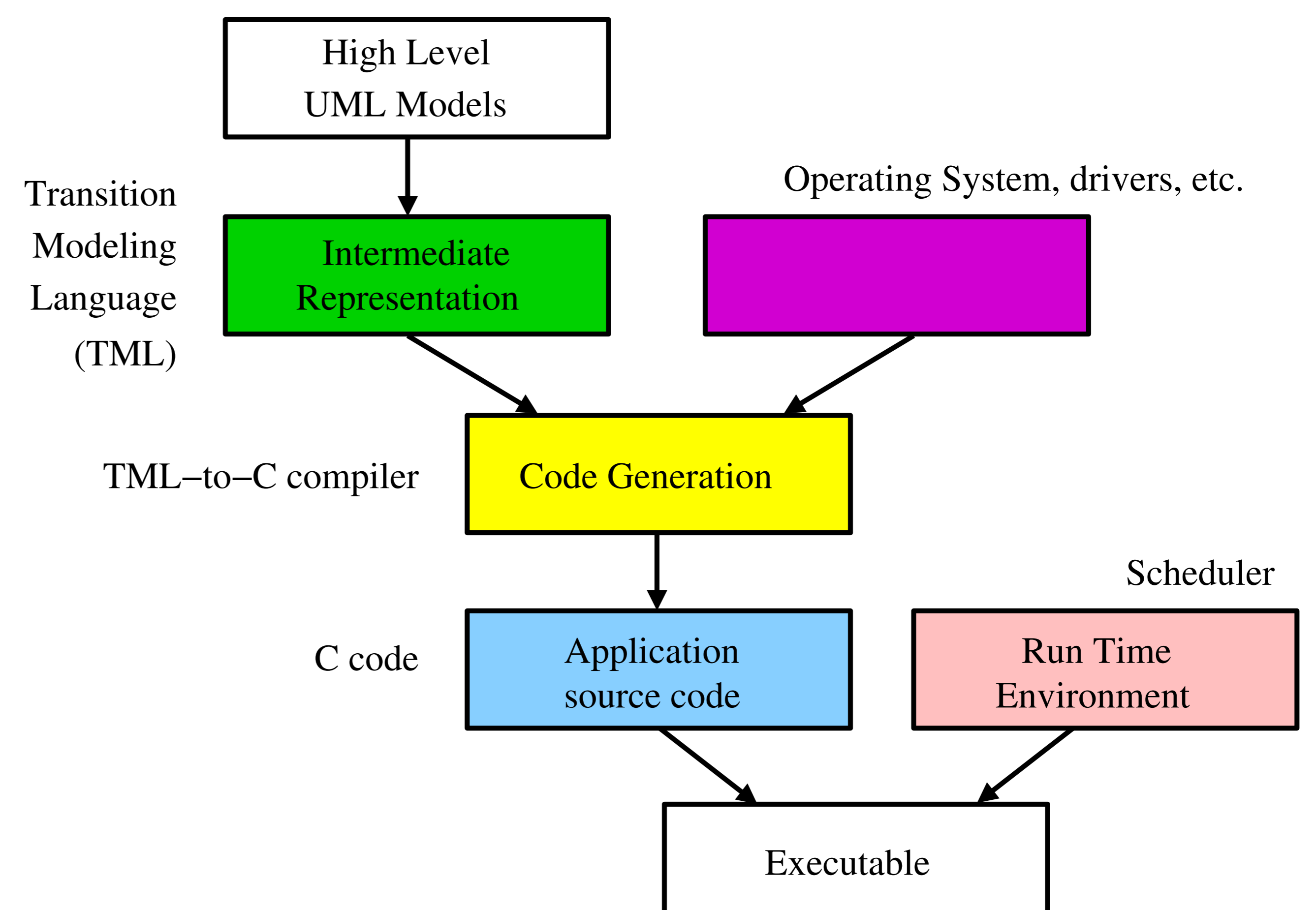
The workload of an application (data, control) is associated to the architecture units (computations, communications)



## Design Space Exploration: Simulation and Formal Verification at the push of a button



## Automatic Generation of Executable Code from High Level Models



- **Model-checking** of system properties (e.g., safety, schedulability, performance)
- **Interactive simulation** with graphical interface and debug facilities (e.g., breakpoints, simulation traces)

- An **executable implementation** of the application is **automatically generated**: only memory allocation and data-blocks addresses must be manually encoded.