

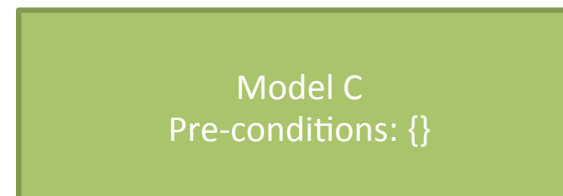
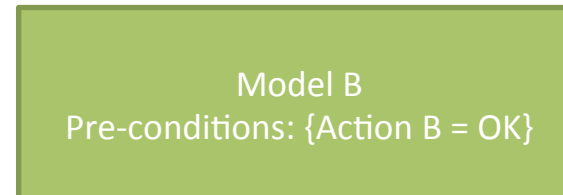
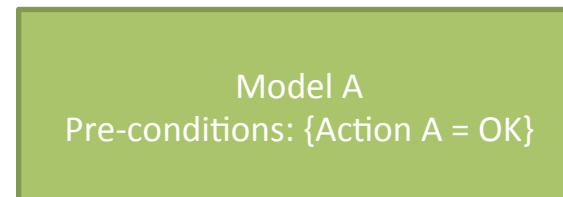
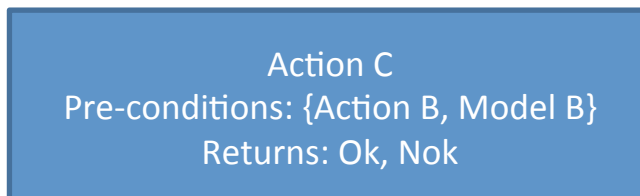
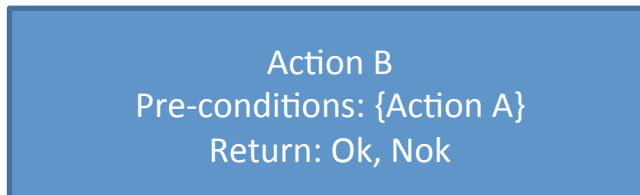
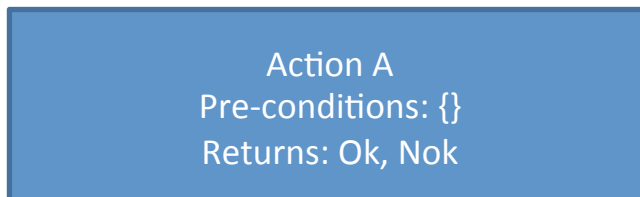
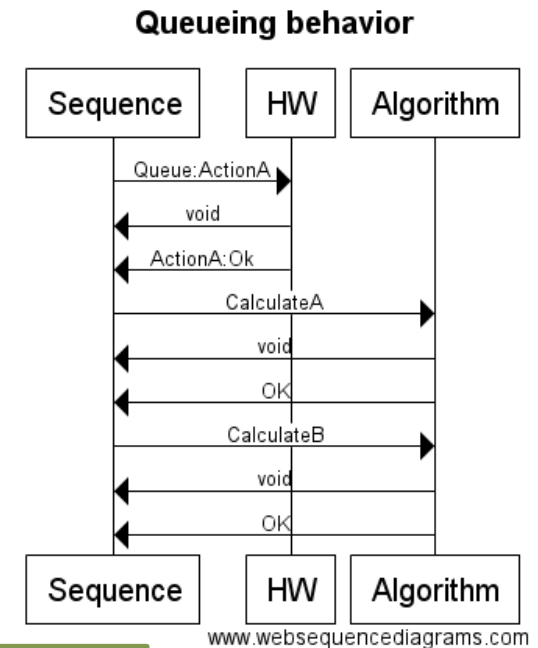
Alloy for ASML machine sequence generation

ASML

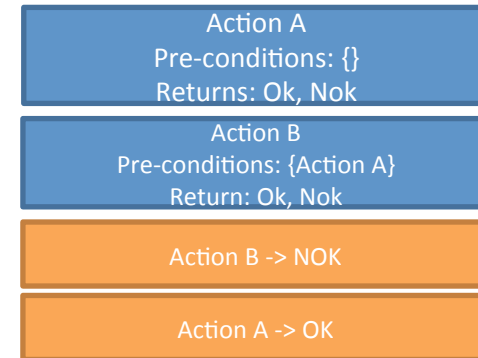
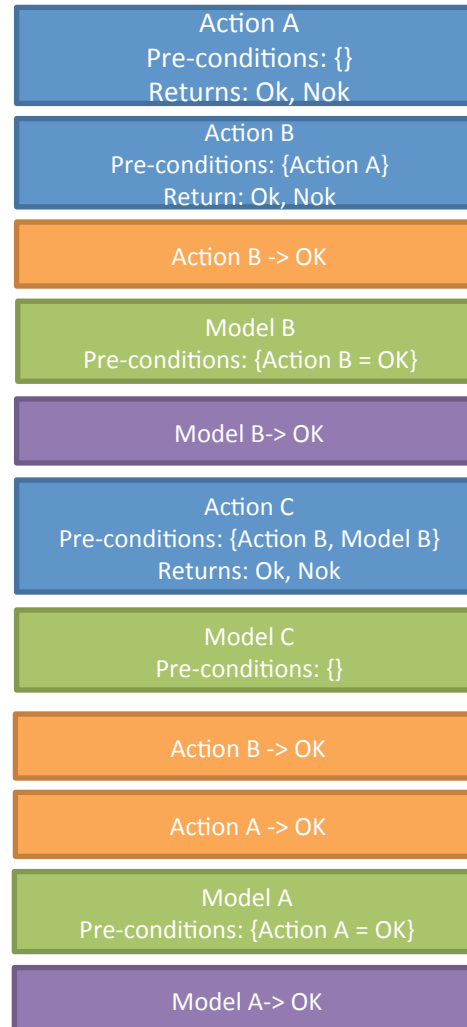
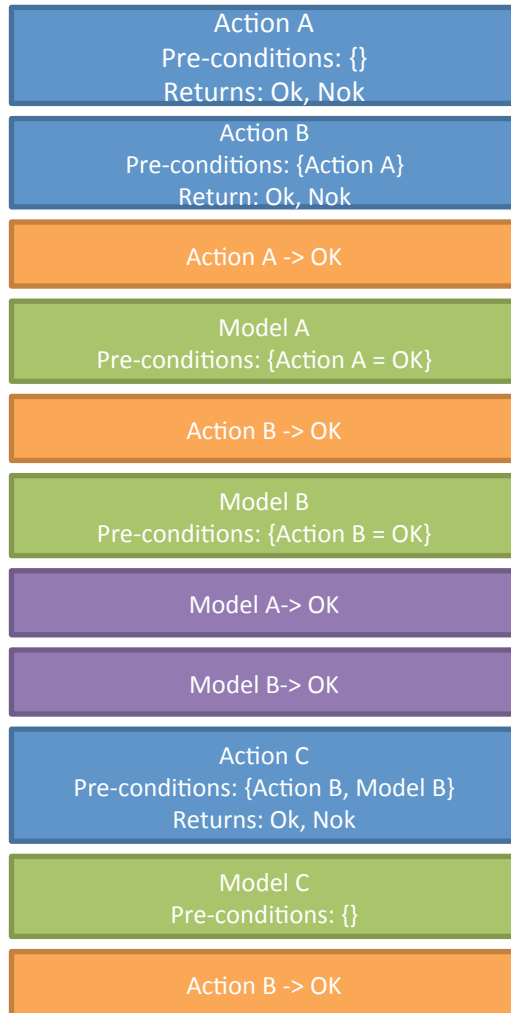
Andre Passos

Requirements

- Reactive System
- Queue has always priority
- Queue is blocking
- Queueing actions reply asynchronously (callbacks)
- Dependencies have to be fulfilled
- Algorithm/Models have always asynchronous behavior



Possible sequences



ASML Scale

- 10 Queueing actions
- 50 Modeling actions
- Verified using ASD (FDR2 Model checker) 120K states
- Approximately 2 hours
 - If we have a bug in the field and the machine is down 10K euros per hour -> 20K euros