



SOFTWARE ANALYSIS
RESEARCH LABORATORY



SCHOOL OF COMPUTING
UNIVERSITY OF UTAH

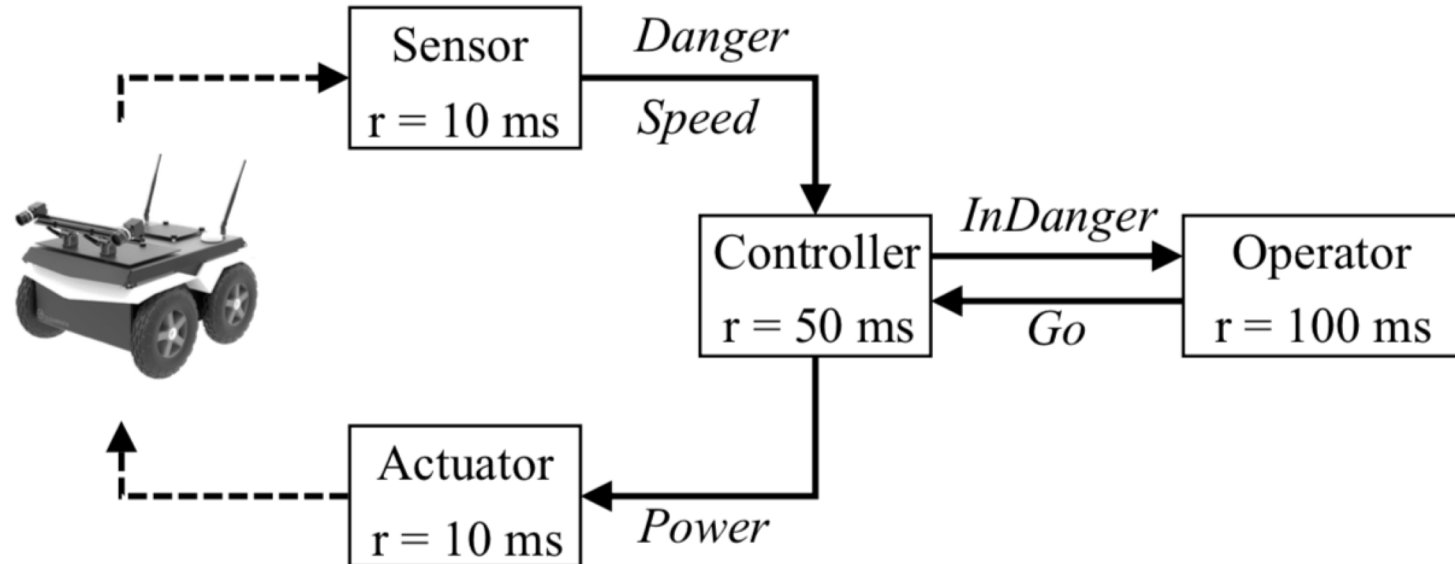
A Timeless Model for the Verification of Quasi-Periodic Distributed Systems

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Motivating Example

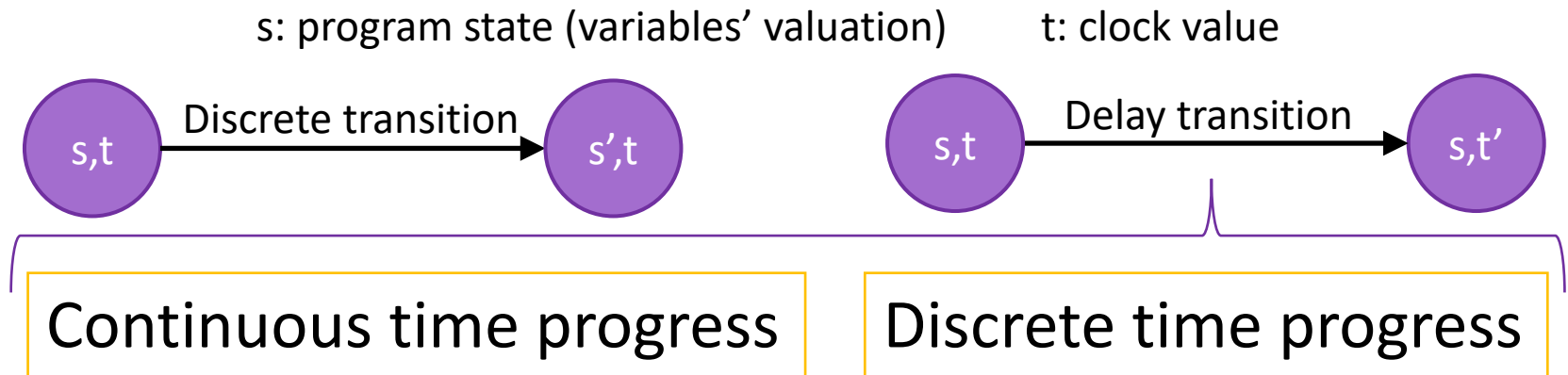


Safety property: speed is always in a valid range

Liveness property: speed eventually becomes zero if the operator sends stop command

Model Using State Machines

These systems are usually verified using model checking



Timeless model:

- Eliminate the time notion; and so the delay transitions
- Allows checking of safety properties
- Not suitable for checking of liveness properties
- Source of fairness violation: processes that need at least zero messages in their buffers to get enabled