

SEFS Dynamic Behavior

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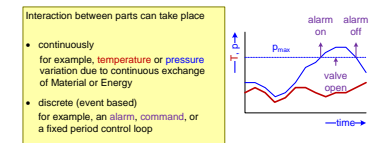
Abstract

The desired system behavior and performance emerges from the interaction of the parts. The challenge in architecting is capturing the relevant dynamic behavior to facilitate reasoning about system behavior and performance.

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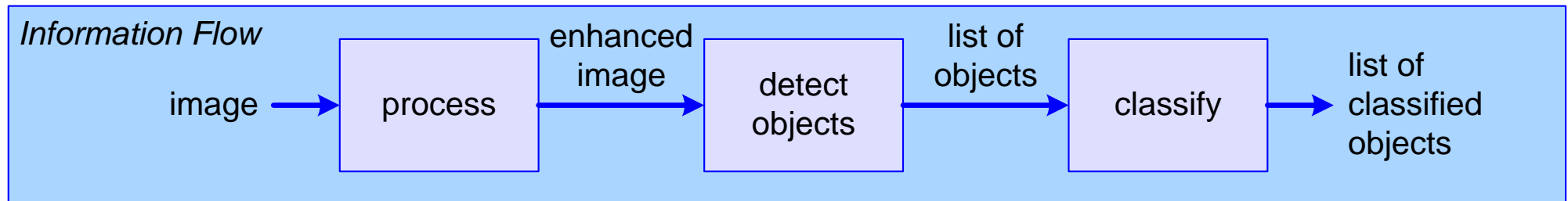
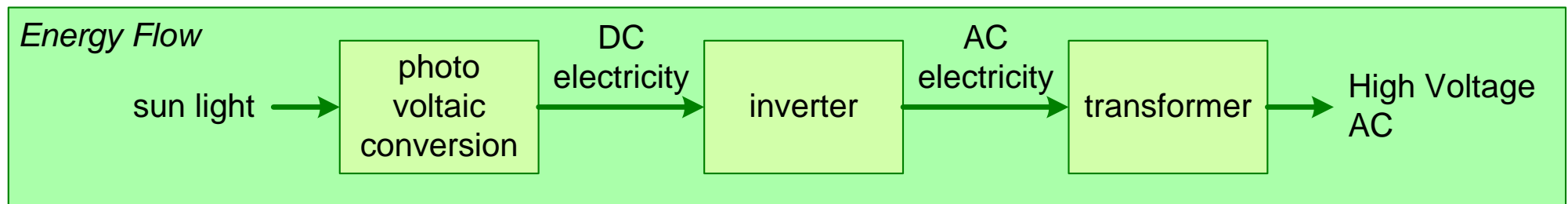
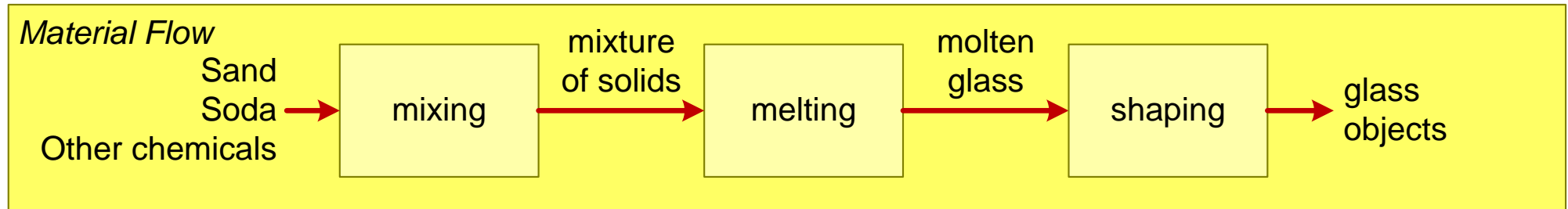
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Interaction between parts takes place via exchange of

- **M**aterial
- **E**nergy
- **I**nformation

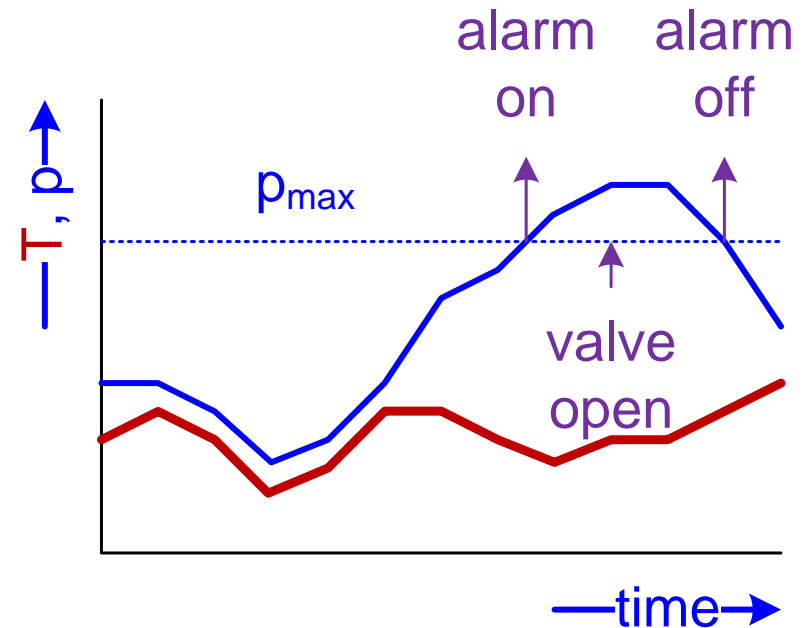
Simple Examples of MEI Flows



Dynamic Behavior and Time

Interaction between parts can take place

- continuously
for example, **temperature** or **pressure** variation due to continuous exchange of Material or Energy
- discrete (event based)
for example, an **alarm**, **command**, or a fixed period control loop



Simple Examples of Dynamic Behavior

Every second:

read **pressure**, **temperature**

evaluate situation (e.g., $p < p_{max}$)

determine action

(e.g., lower pressure by opening valve)

perform action (e.g. **open valve**)

