Policy Control Model: a Key Factor for the Success of Policy in Telecom Applications

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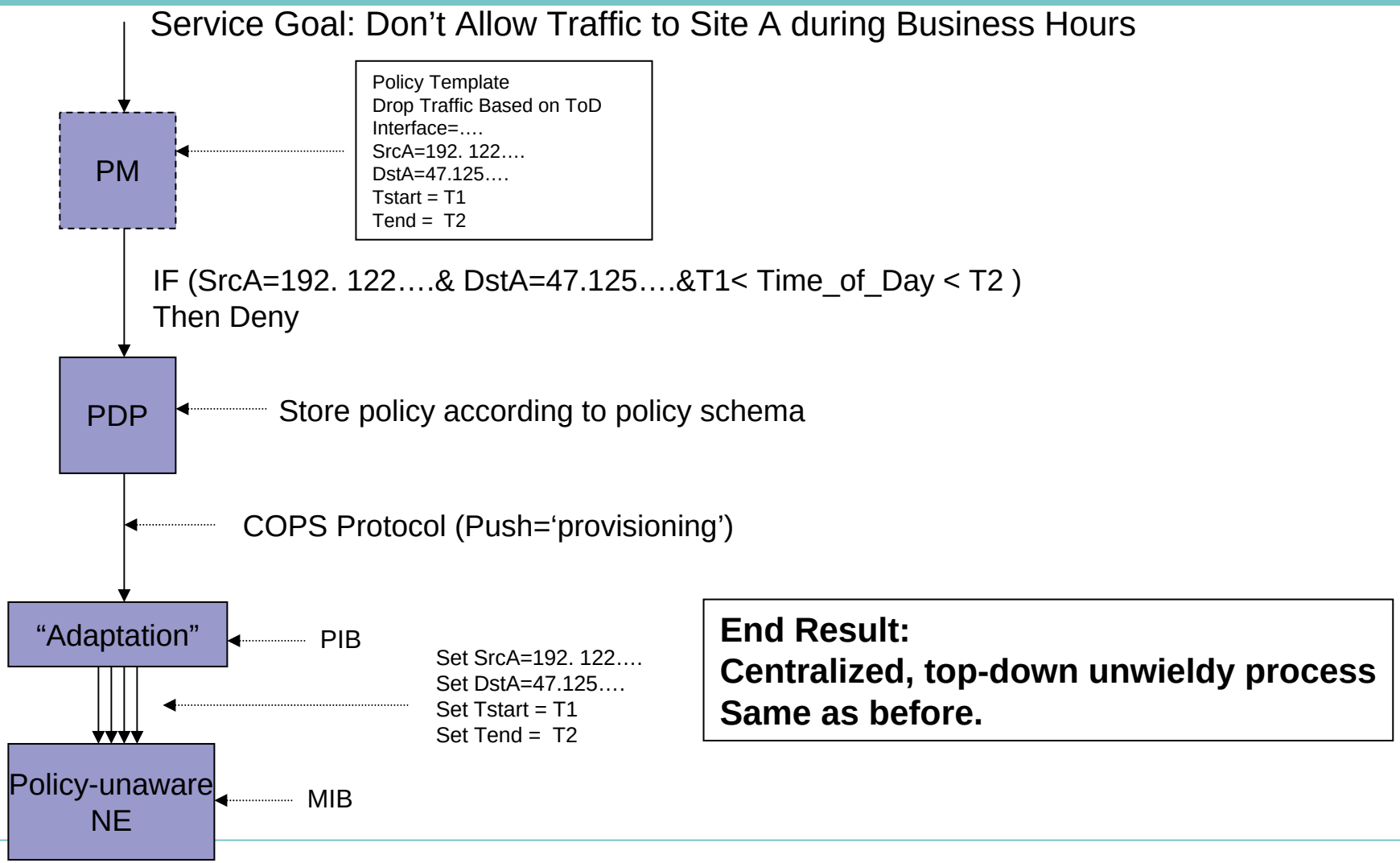
ALCATEL

Policy Implementation in the Telecom Industry Today



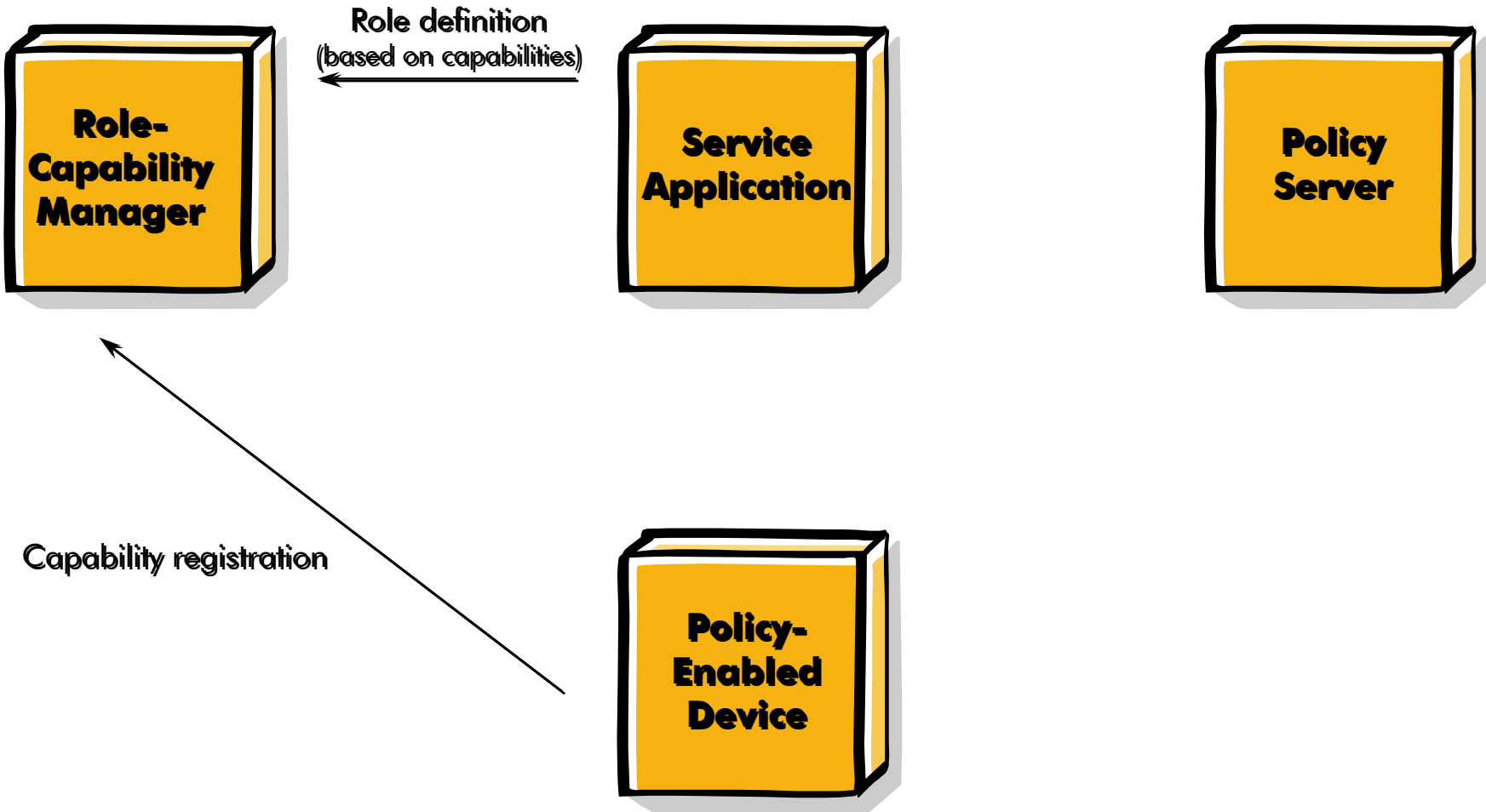
Change the Policy Control Model

> Upgrade NEs:
  - Native PEP support
  - Role semantics
> Rely on role-based pull
> Decentralize policy control
> Leverage self-organizational characteristics of the network

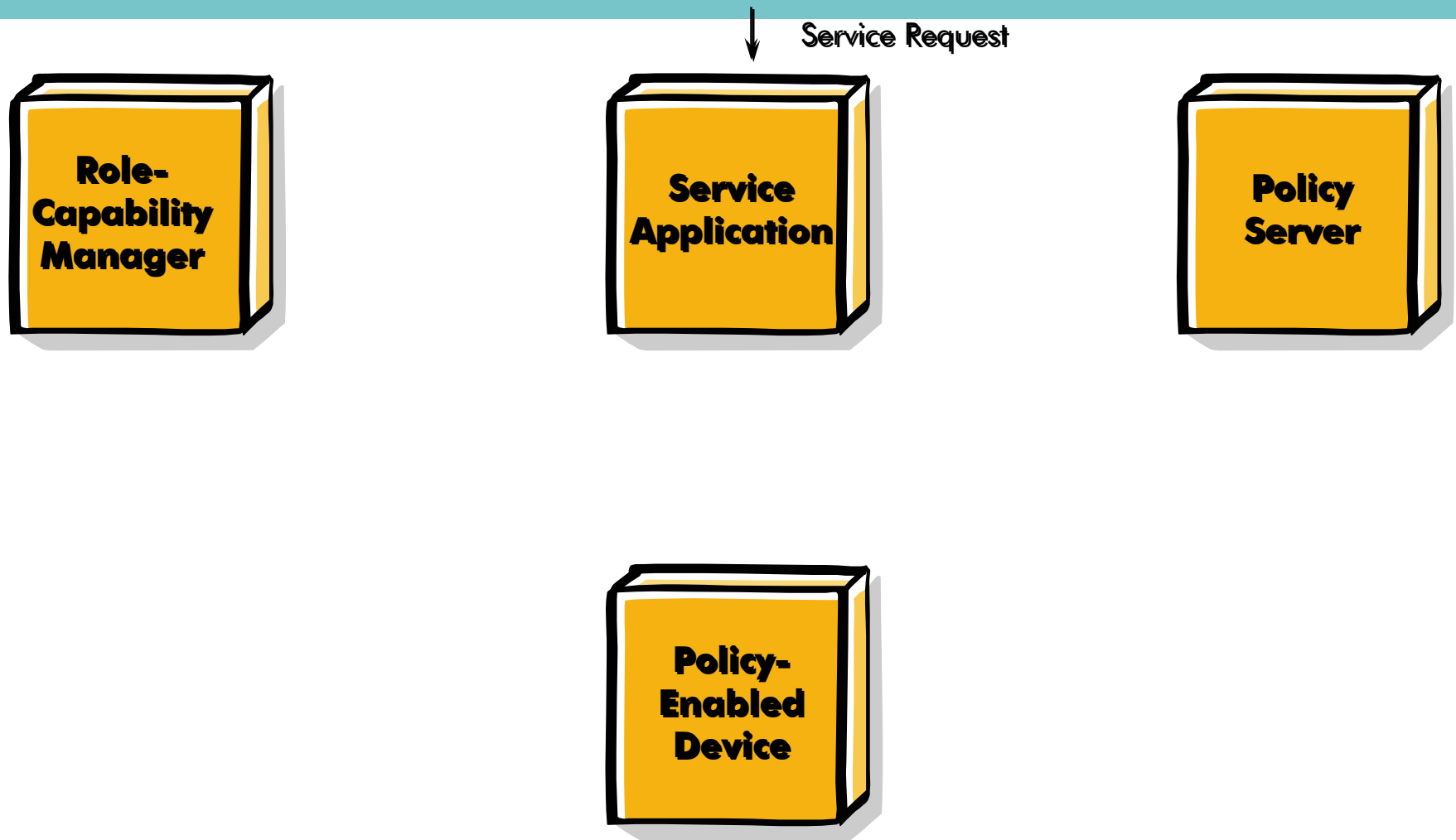
Separation of tasks

- Role-Capability Manager (RCM):
  - Role life-cycle (definition, deployment, assignment, …)
  - Resource management
- Policy Server (PS):
  - Policy life-cycle (definition, evaluation, deployment, …)
  - Resource configuration
- Service Application (SA):
  - Service life-cycle (definition, deployment, instantiation, …)
- Policy-Enabled Device (PED):
  - Role/Policy/Service implementation

Policy Control Model: Service definition



Policy Control Model: Service commissioning



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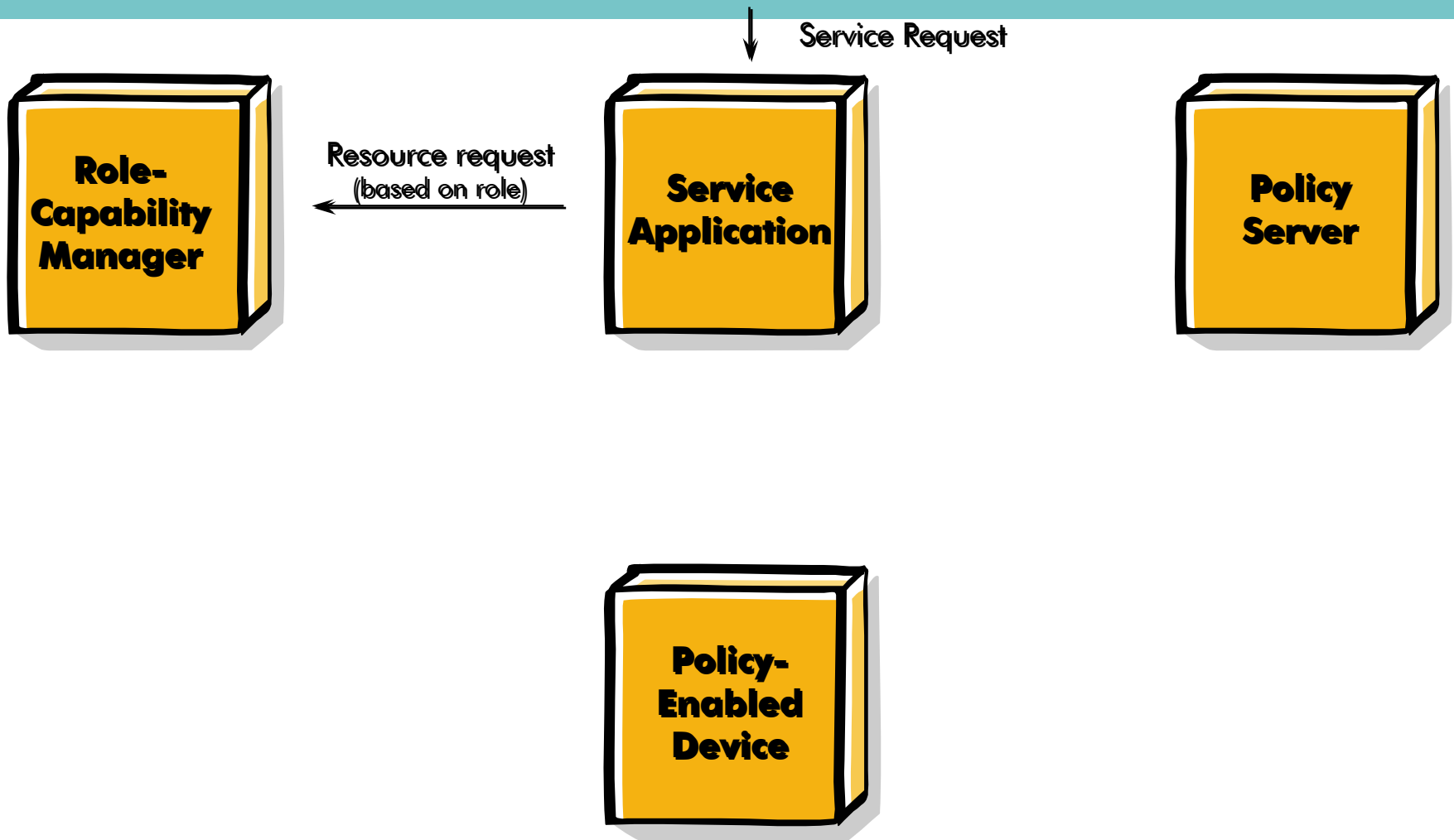

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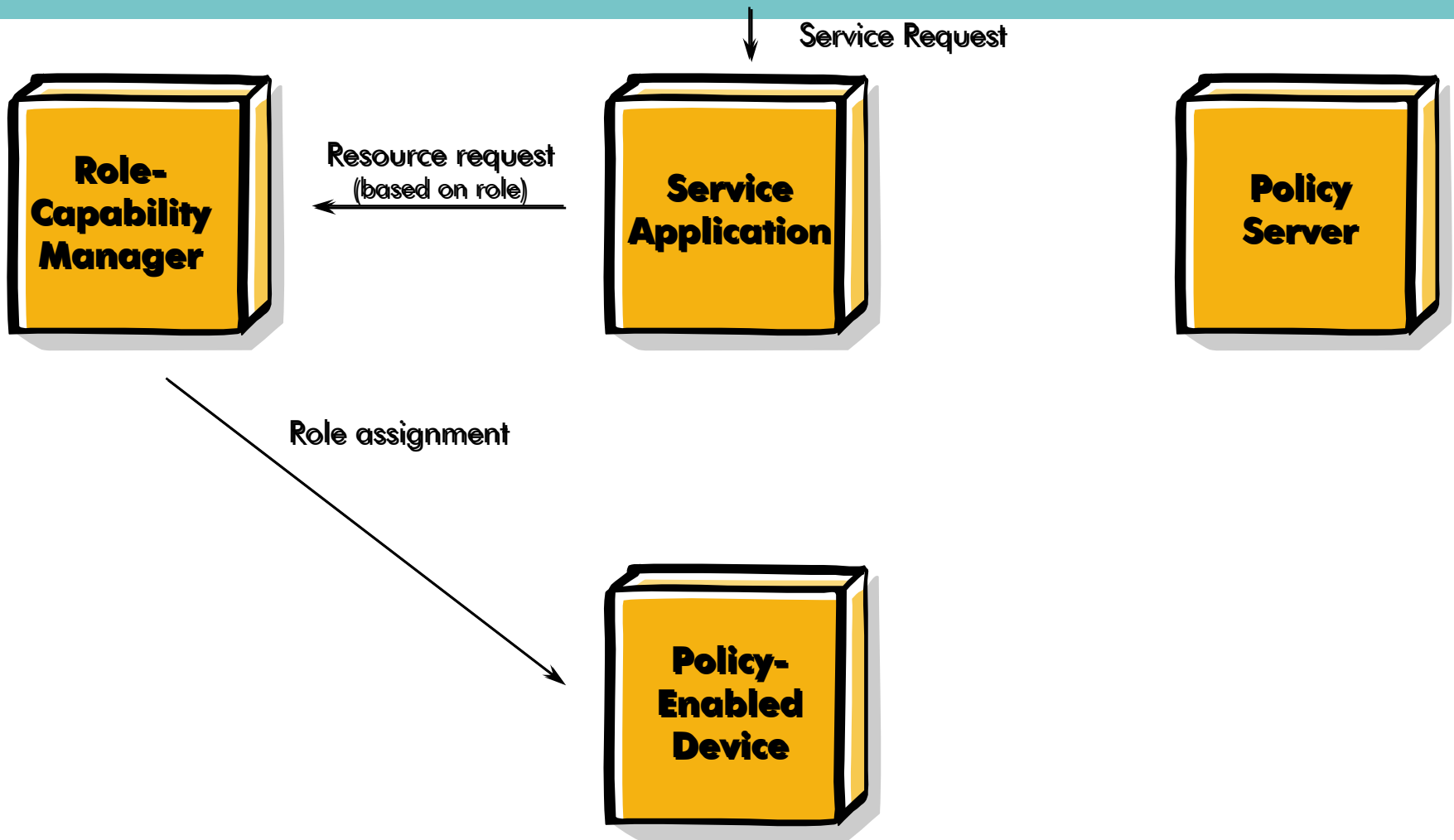

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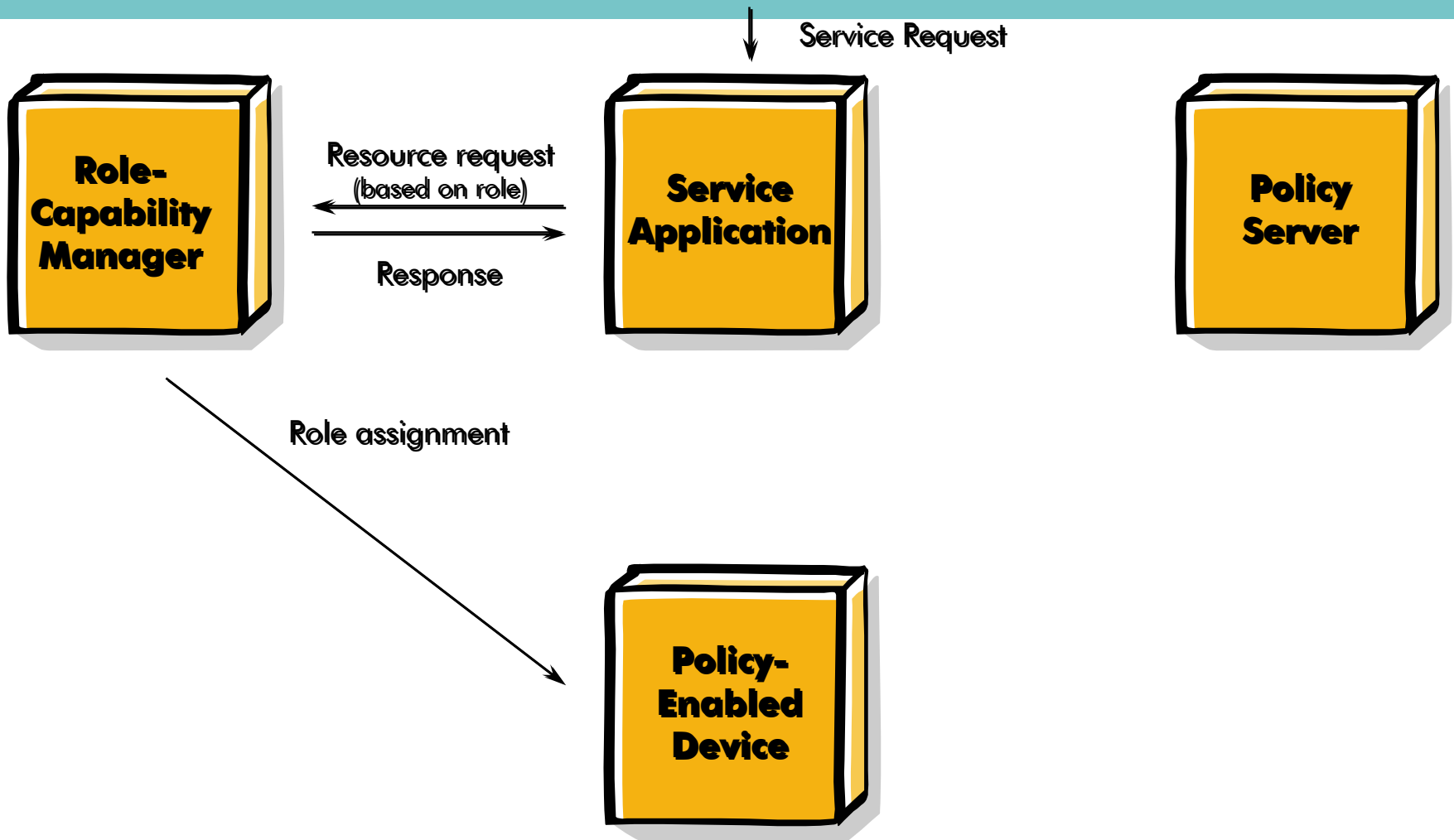

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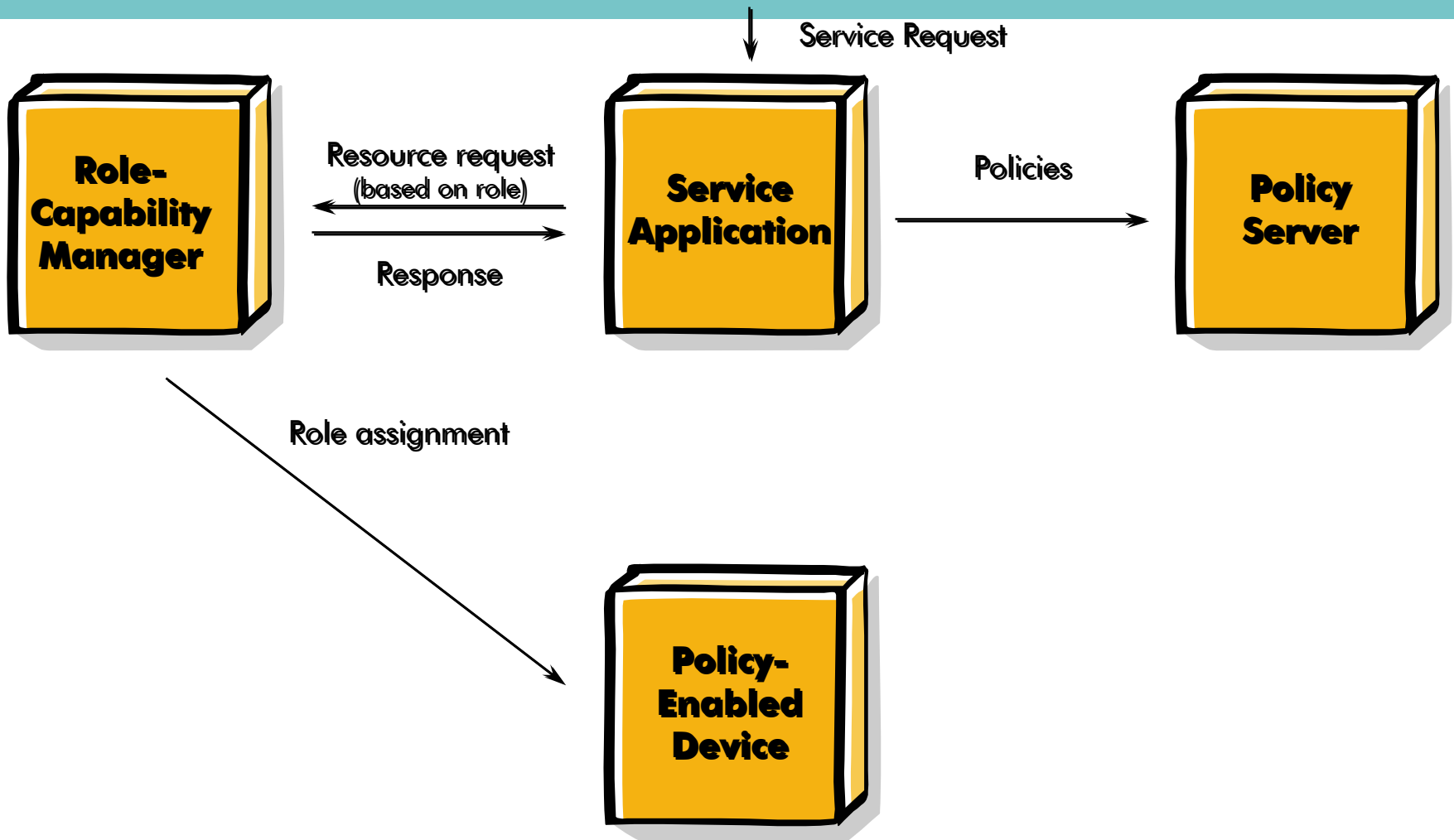
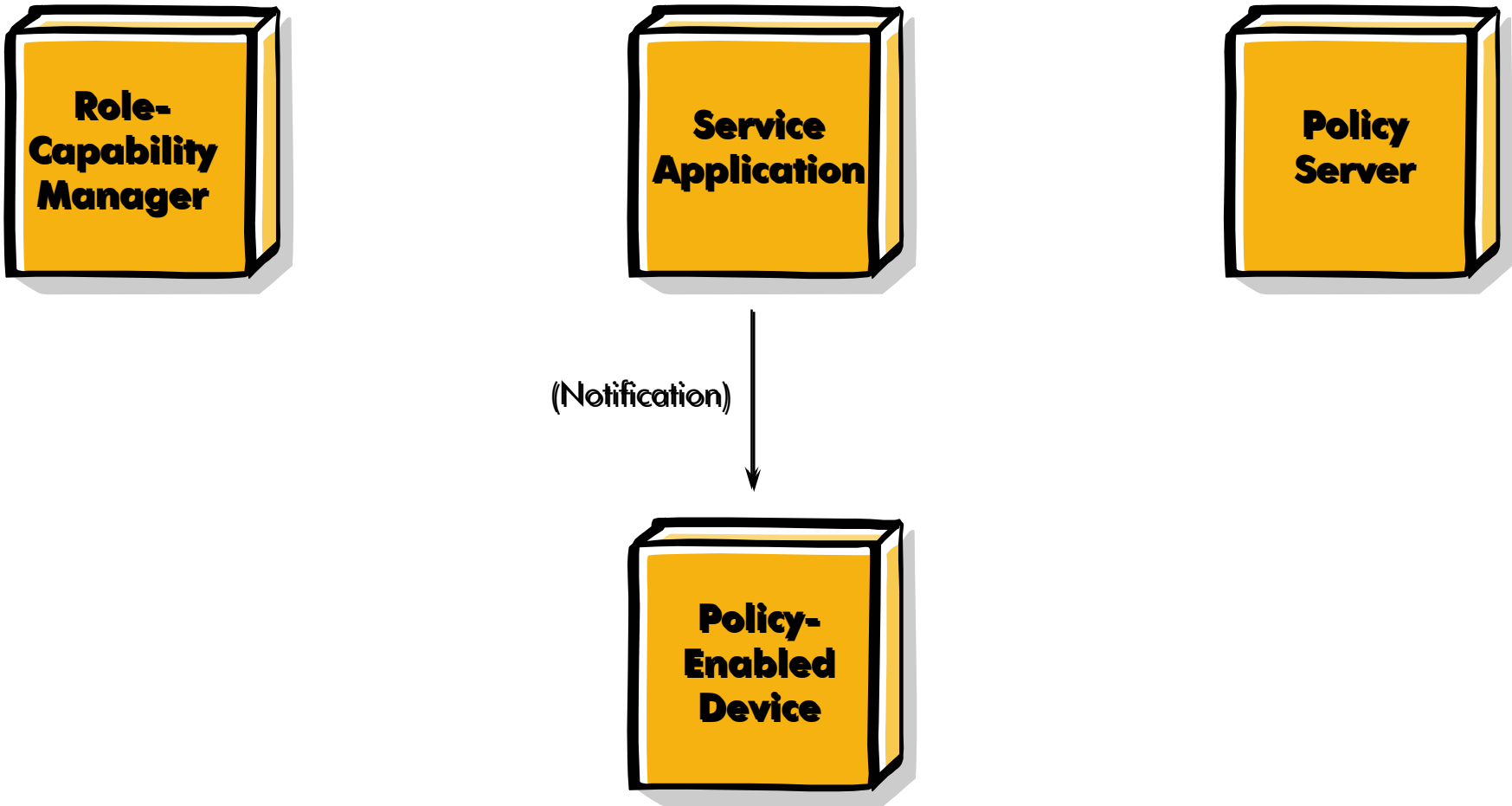


Policy Control Model: Service provisioning



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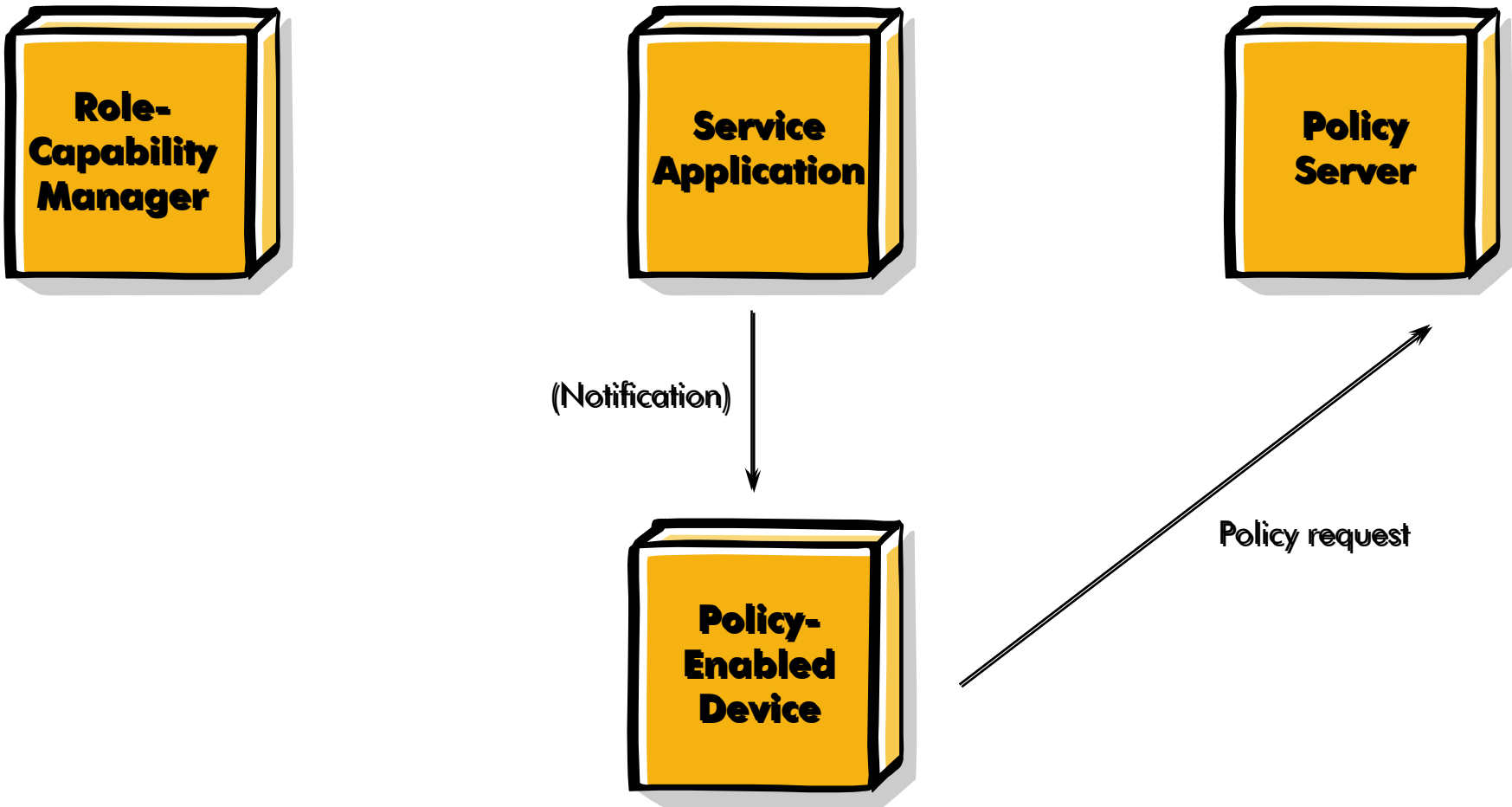

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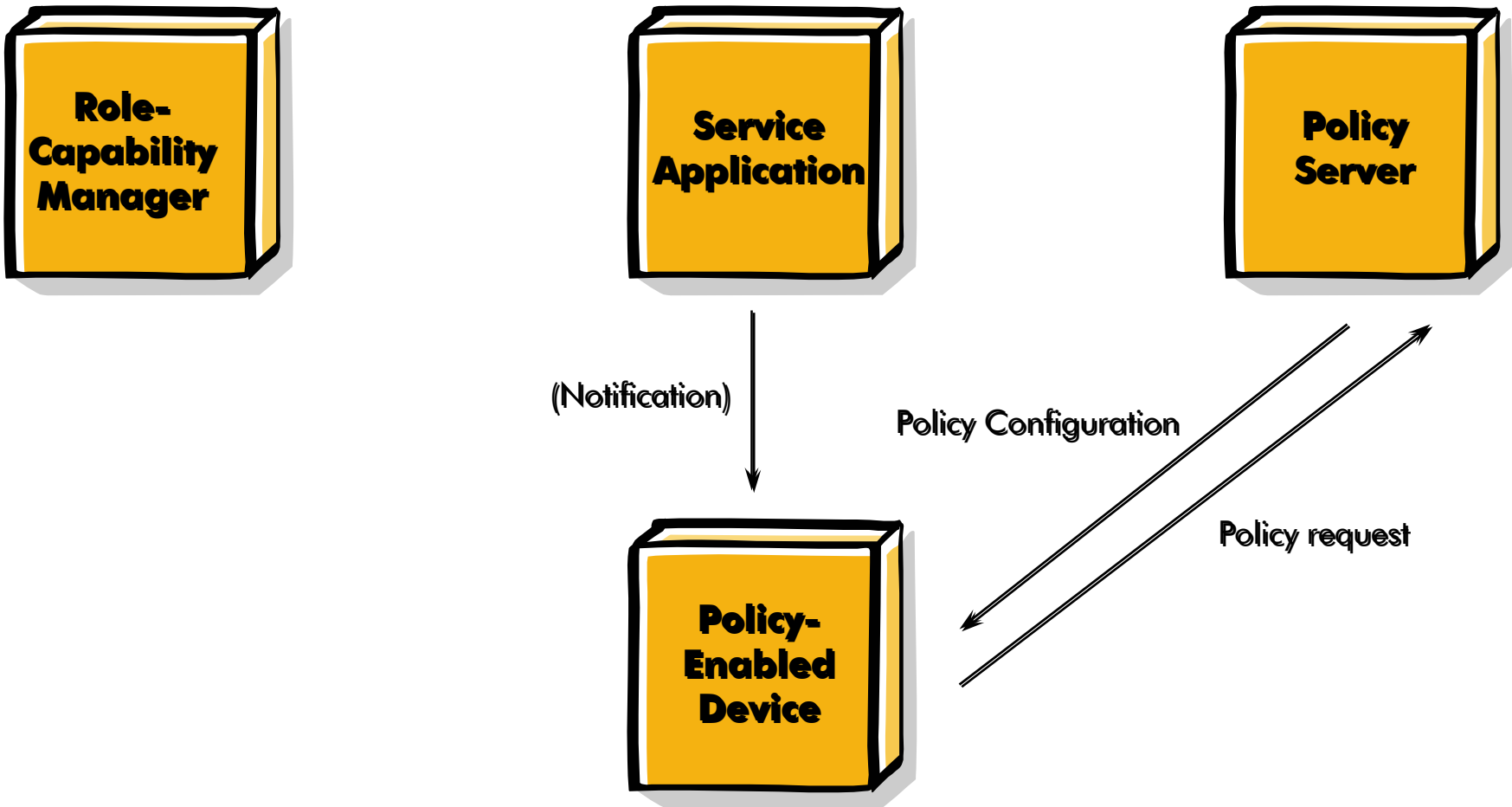
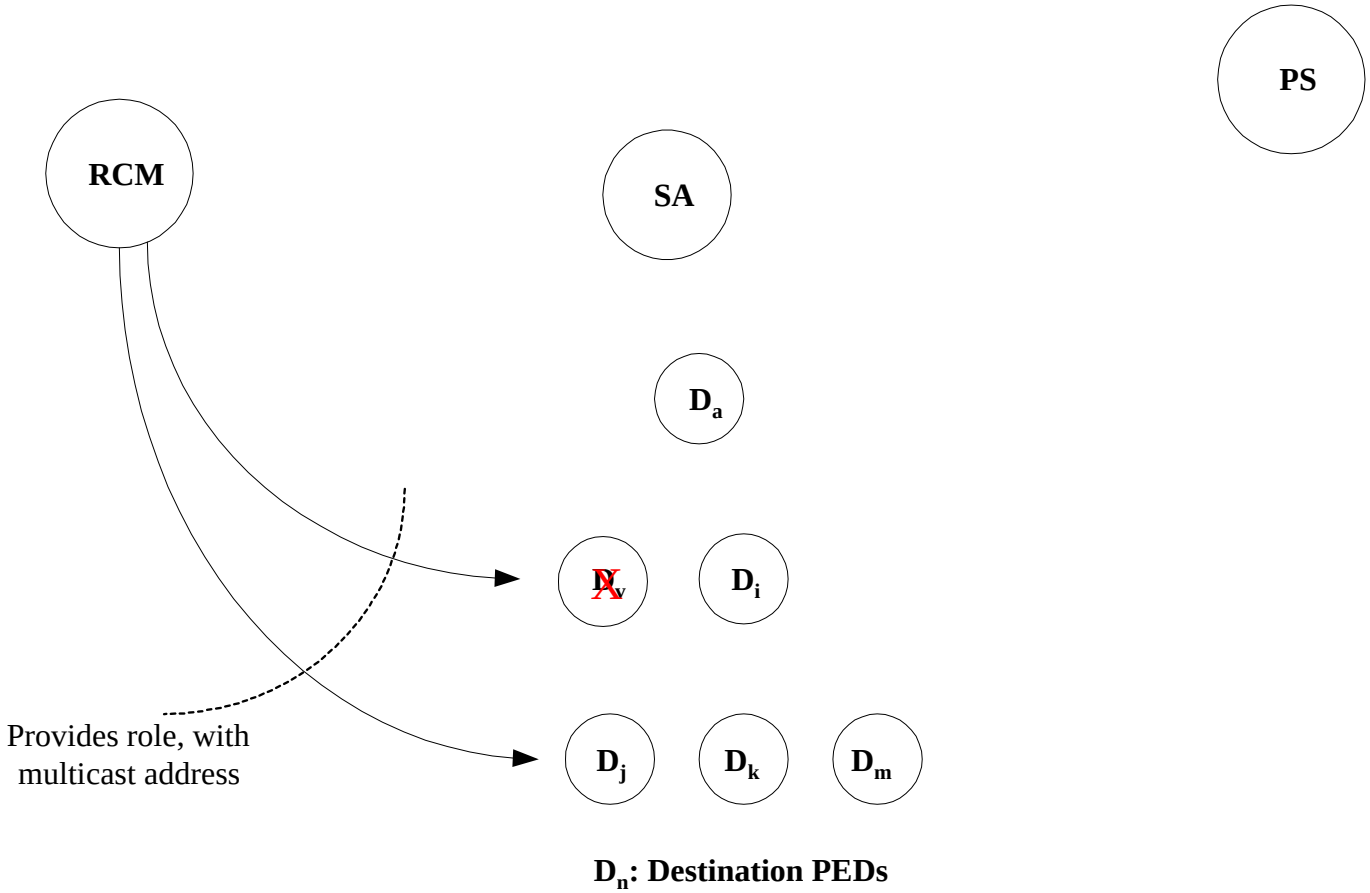


Self-organization of PEDs: An example



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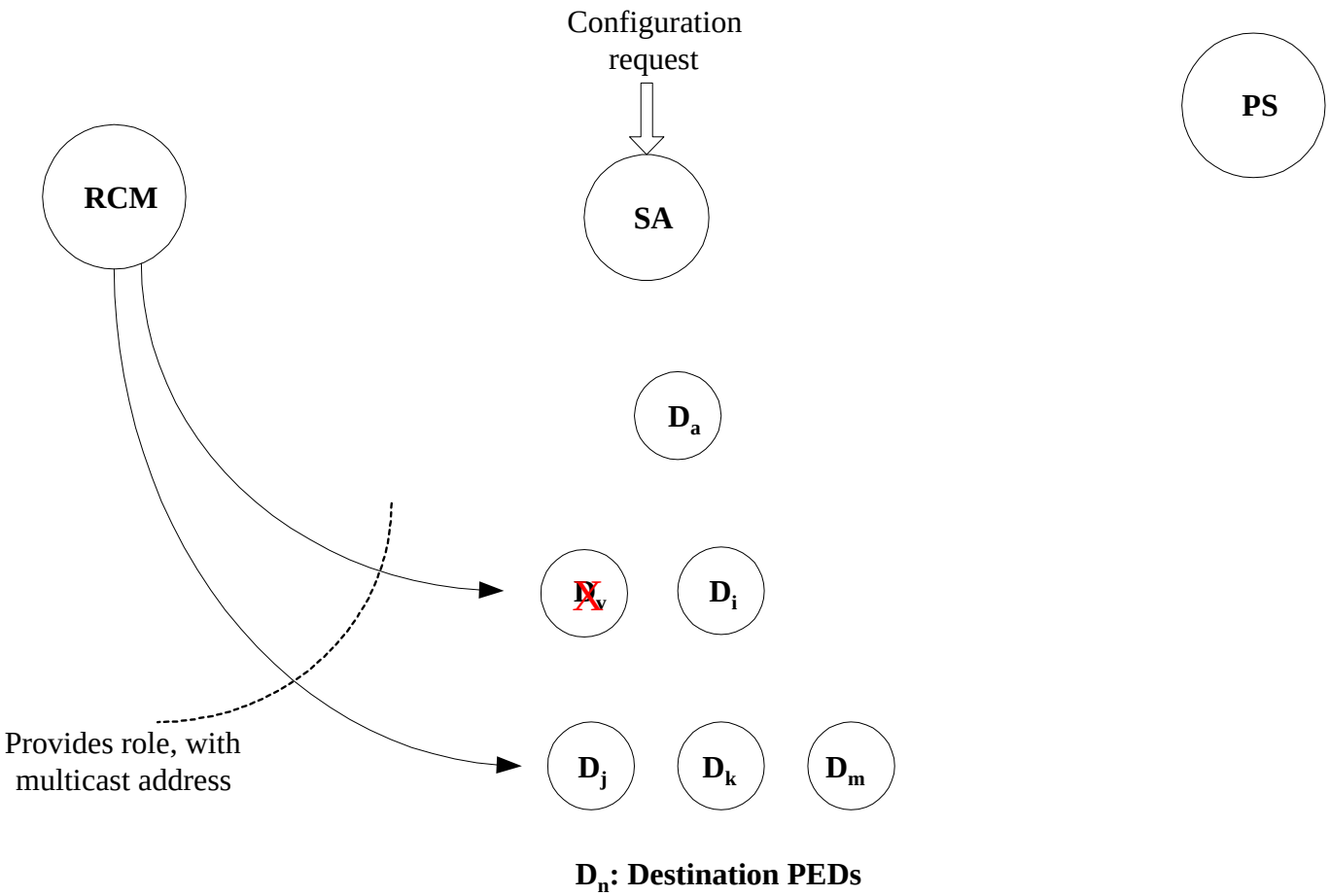

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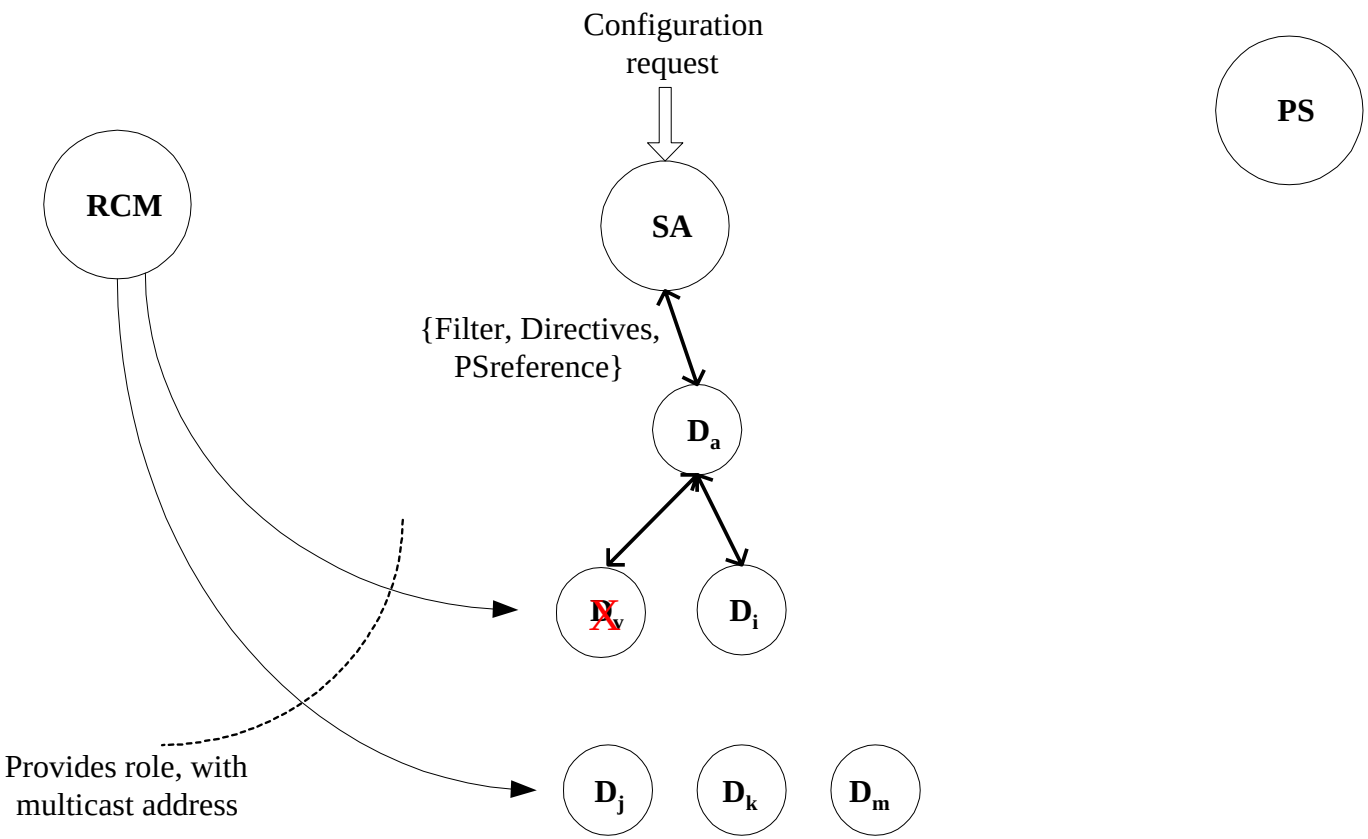

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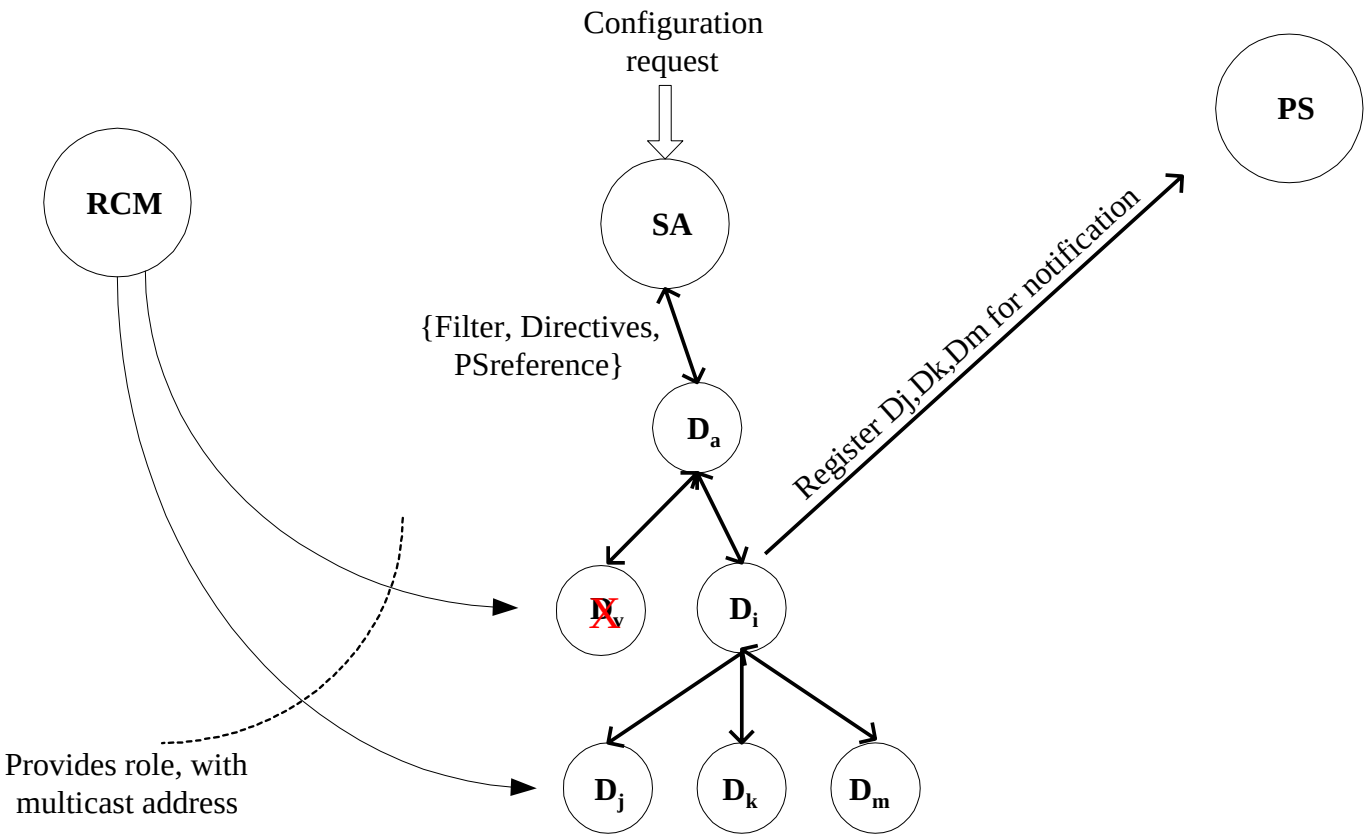

D_n: Destination PEDs

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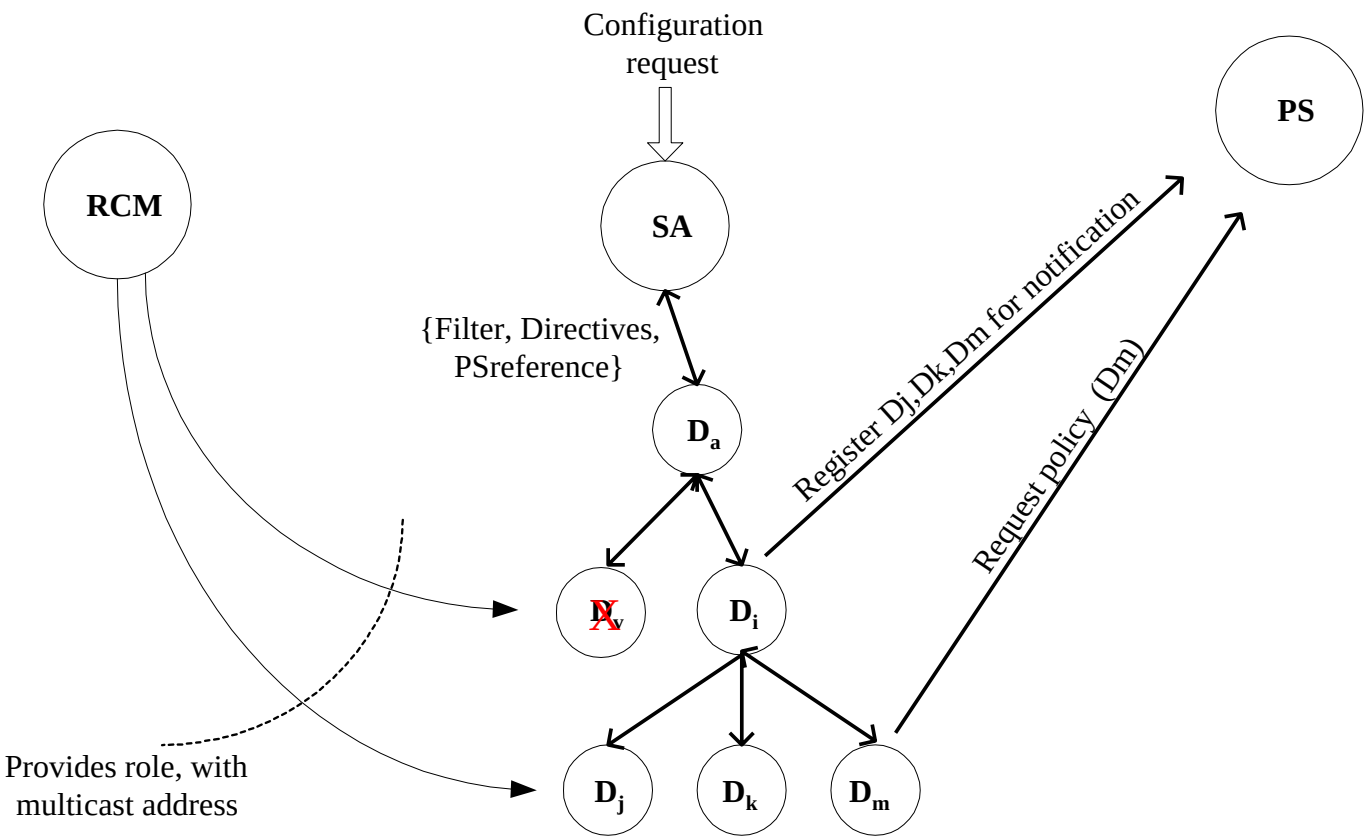

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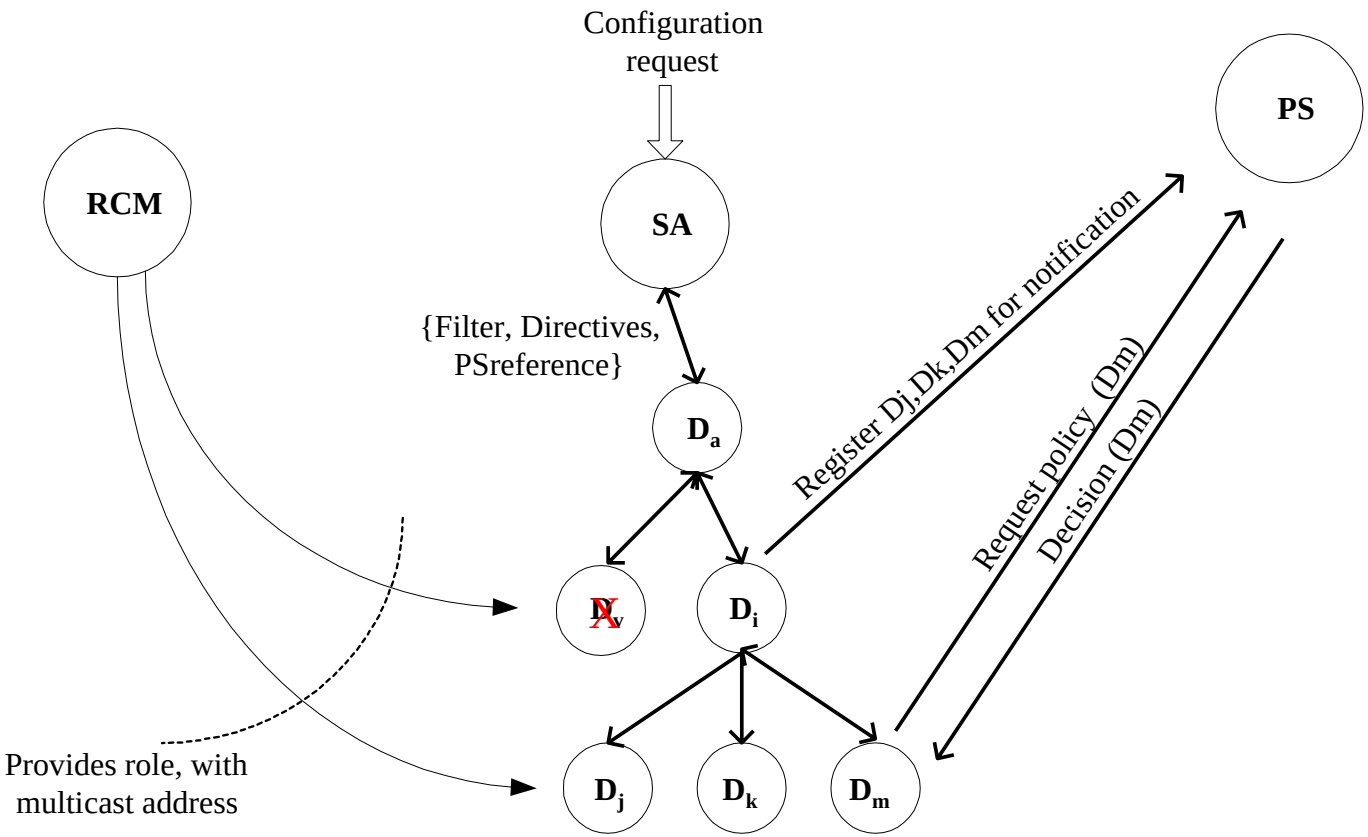

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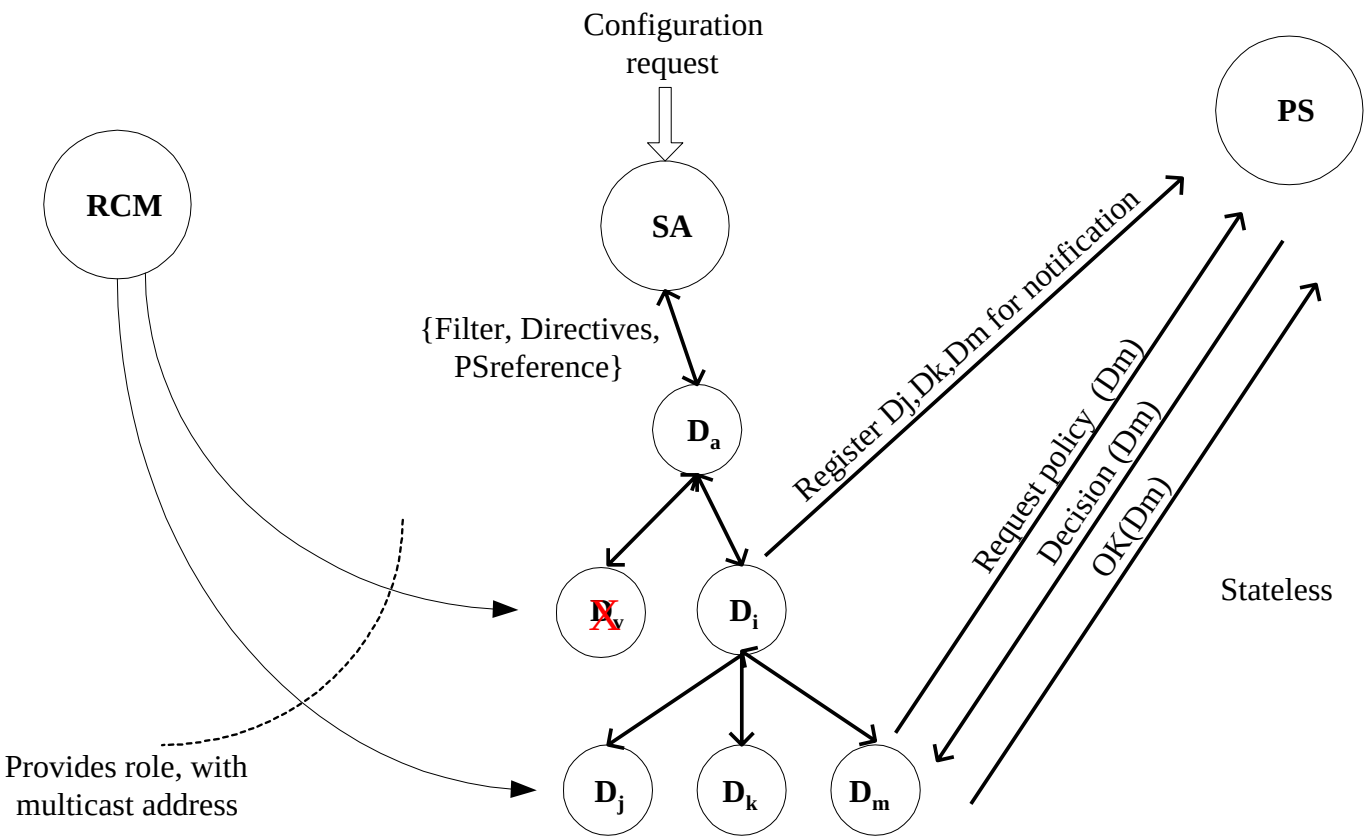

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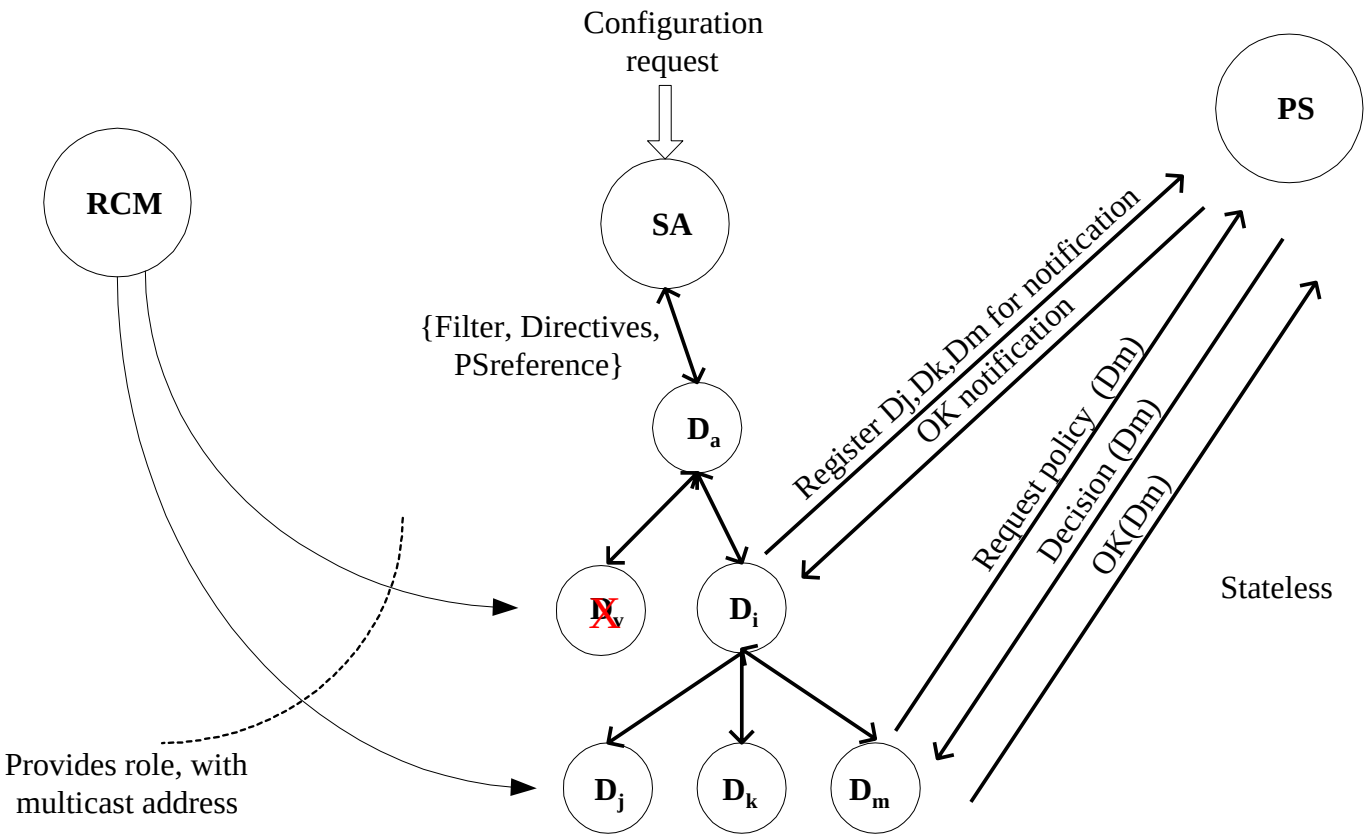
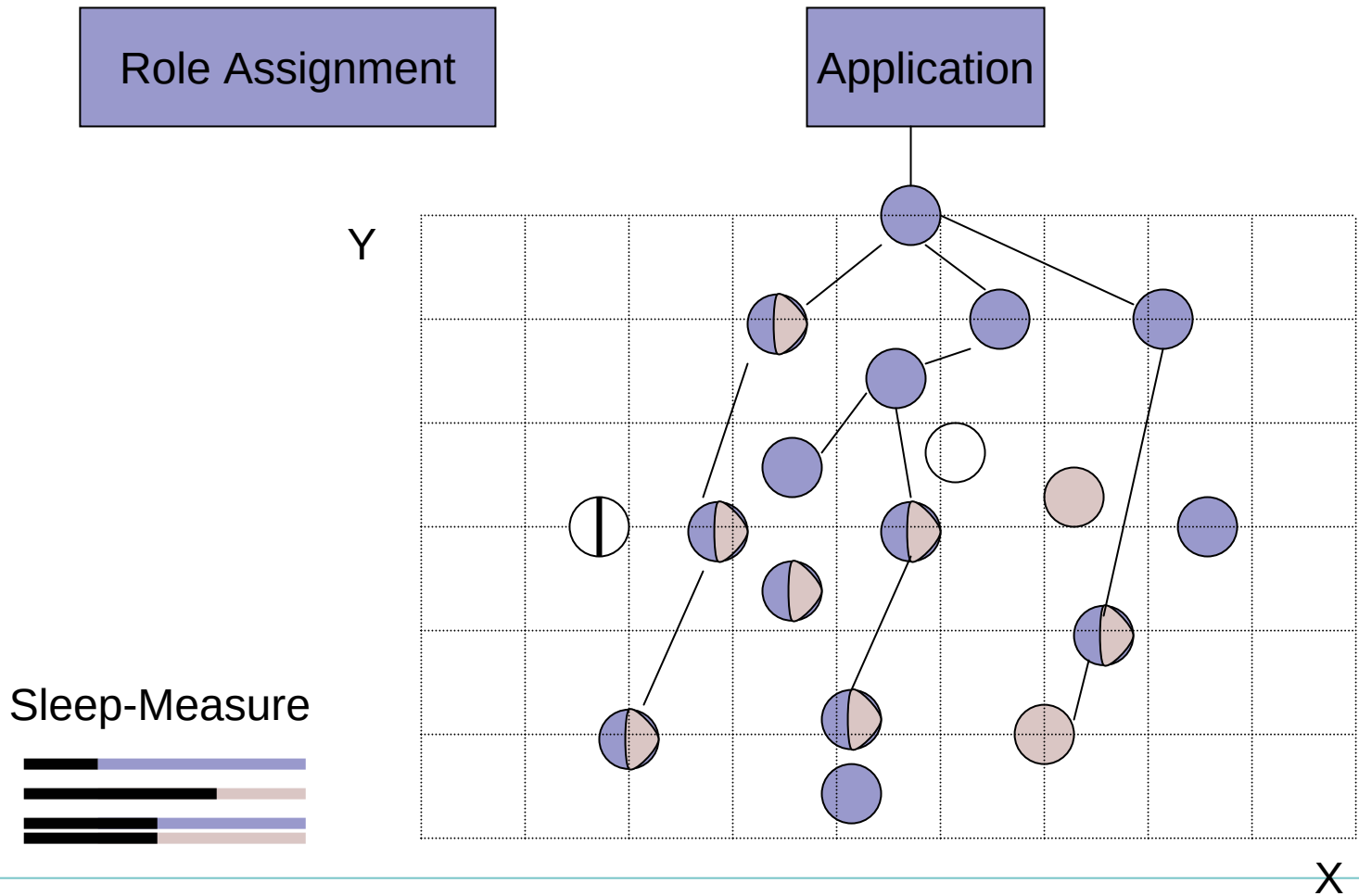


Illustration: Sensor Networks



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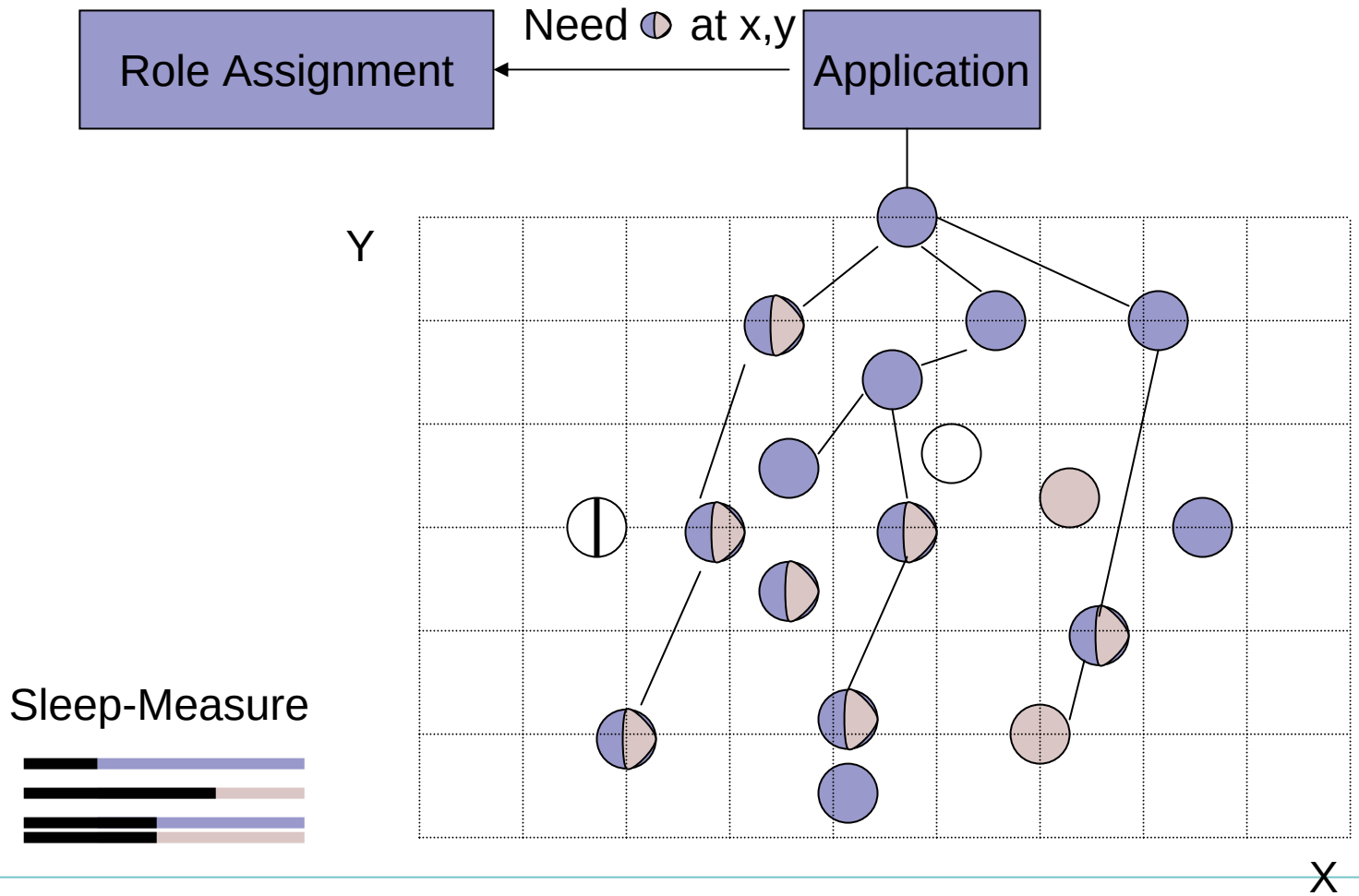

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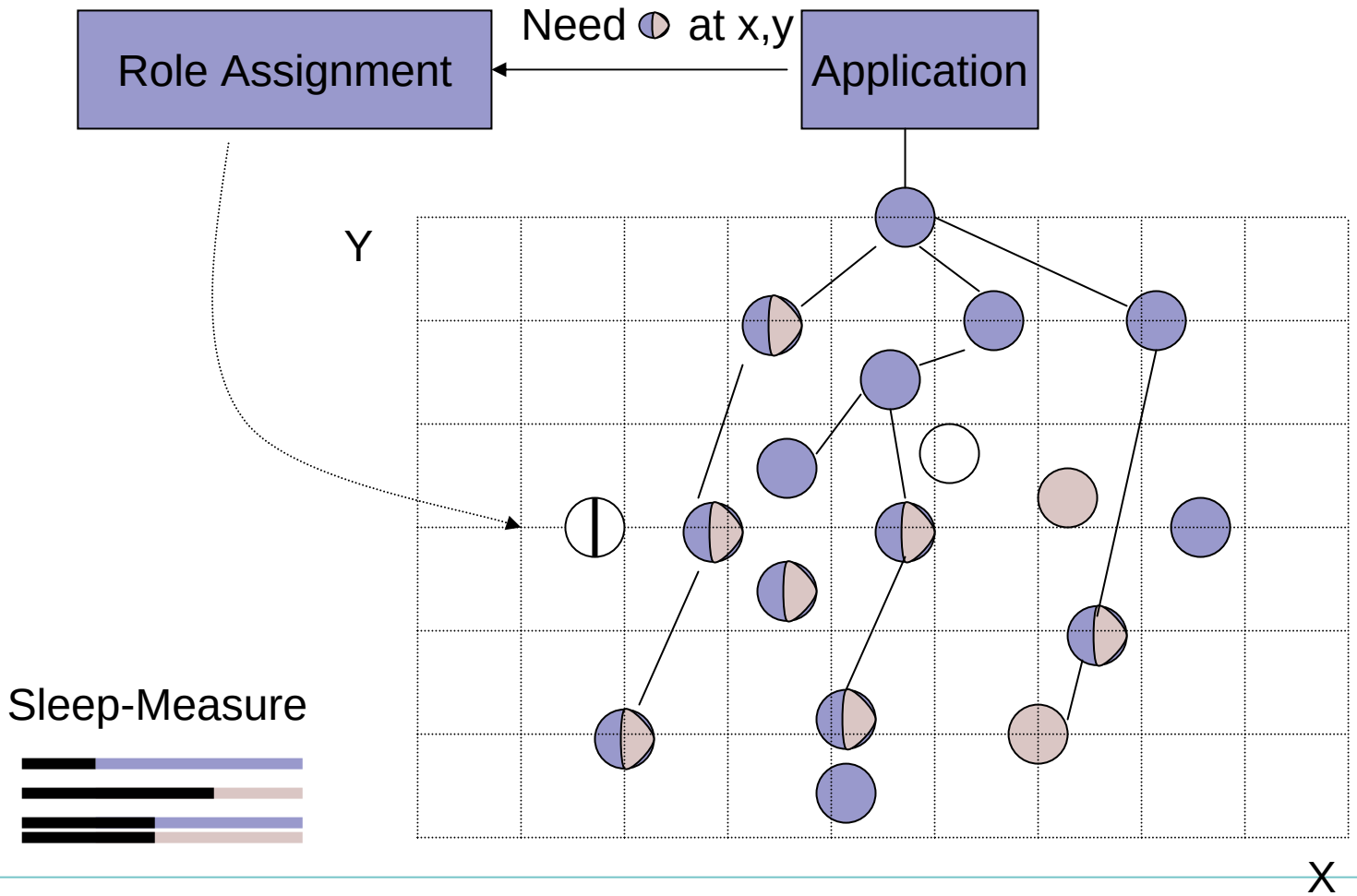

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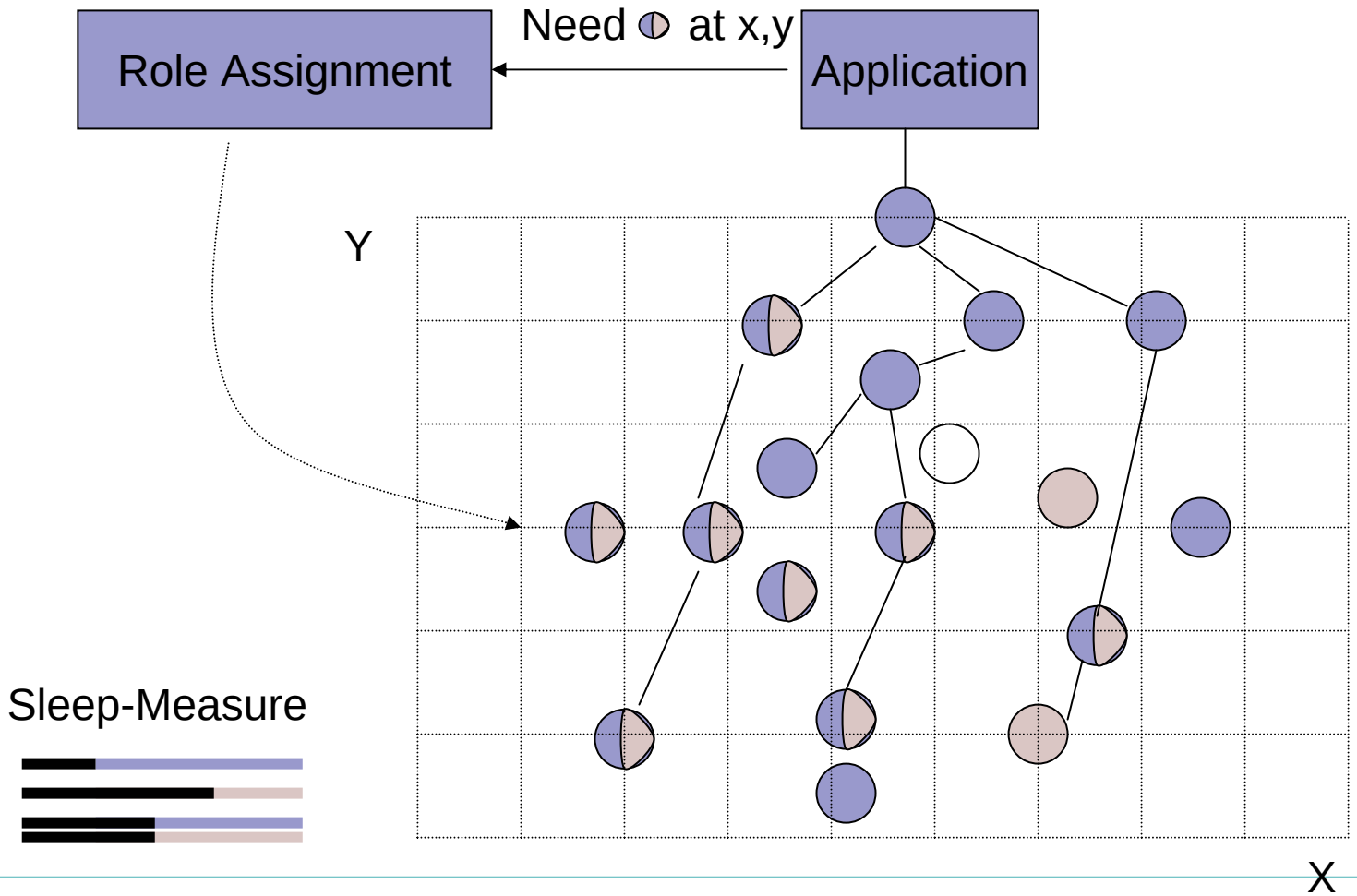

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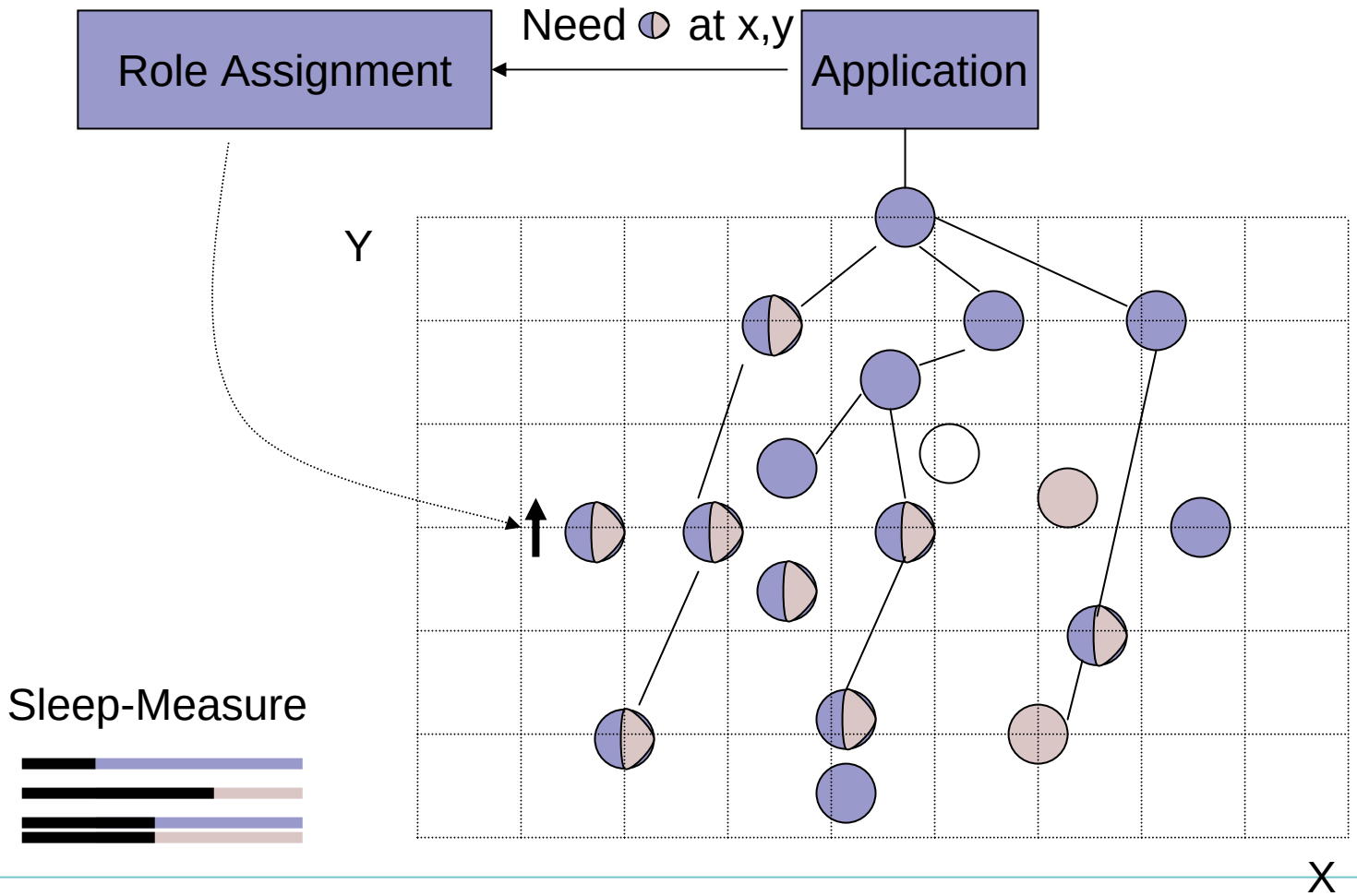

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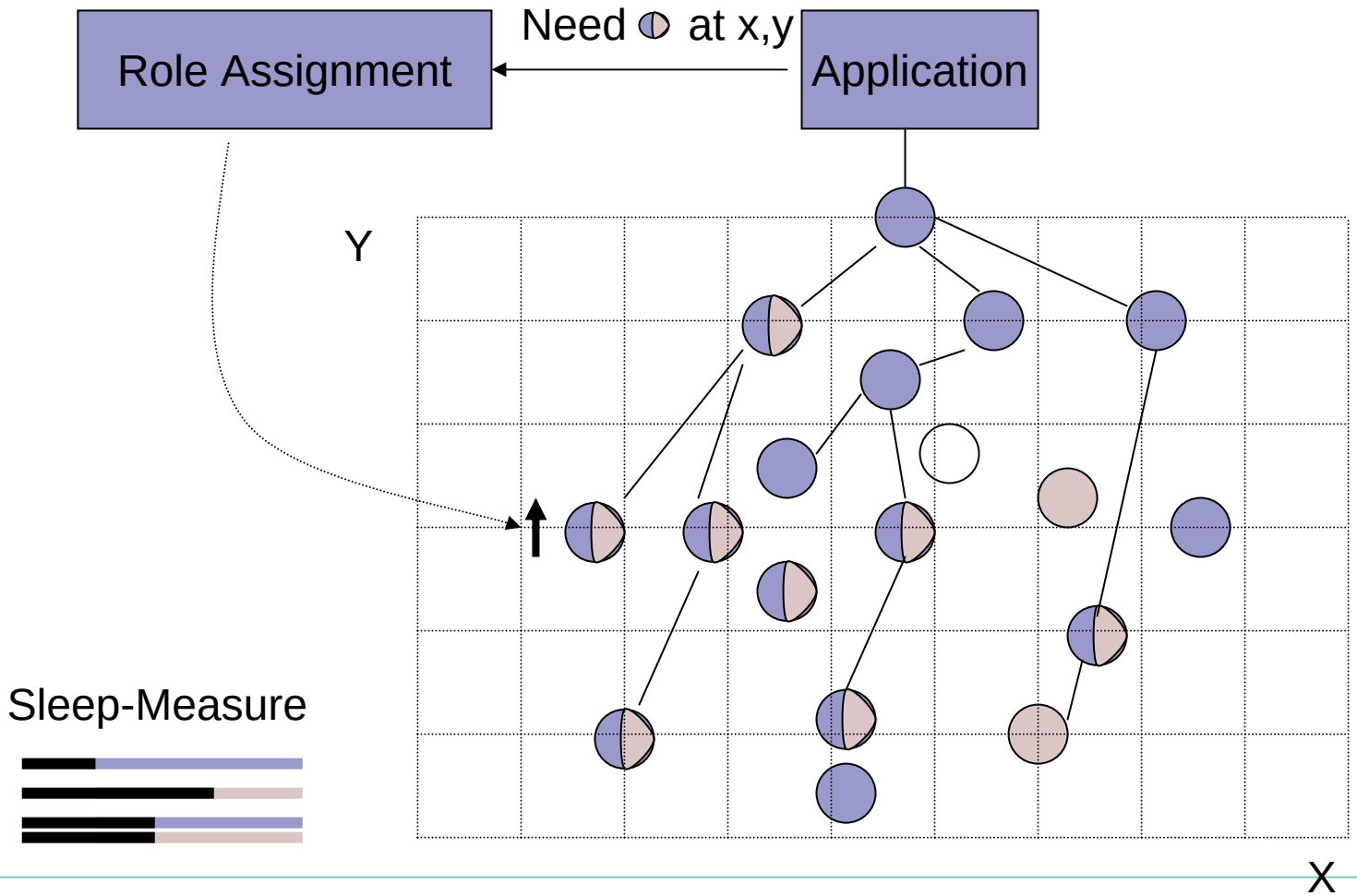

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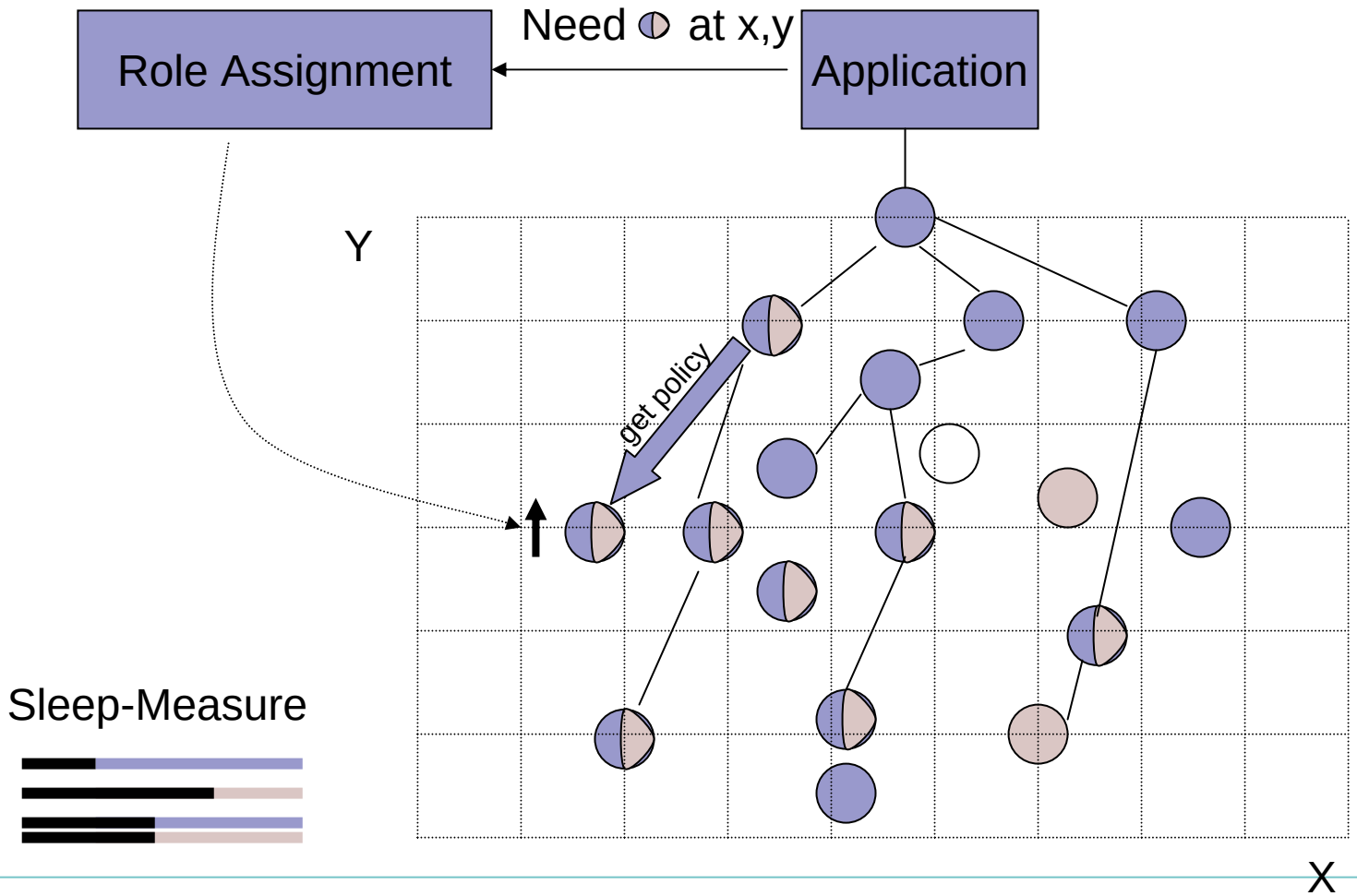

Sleep-Measure

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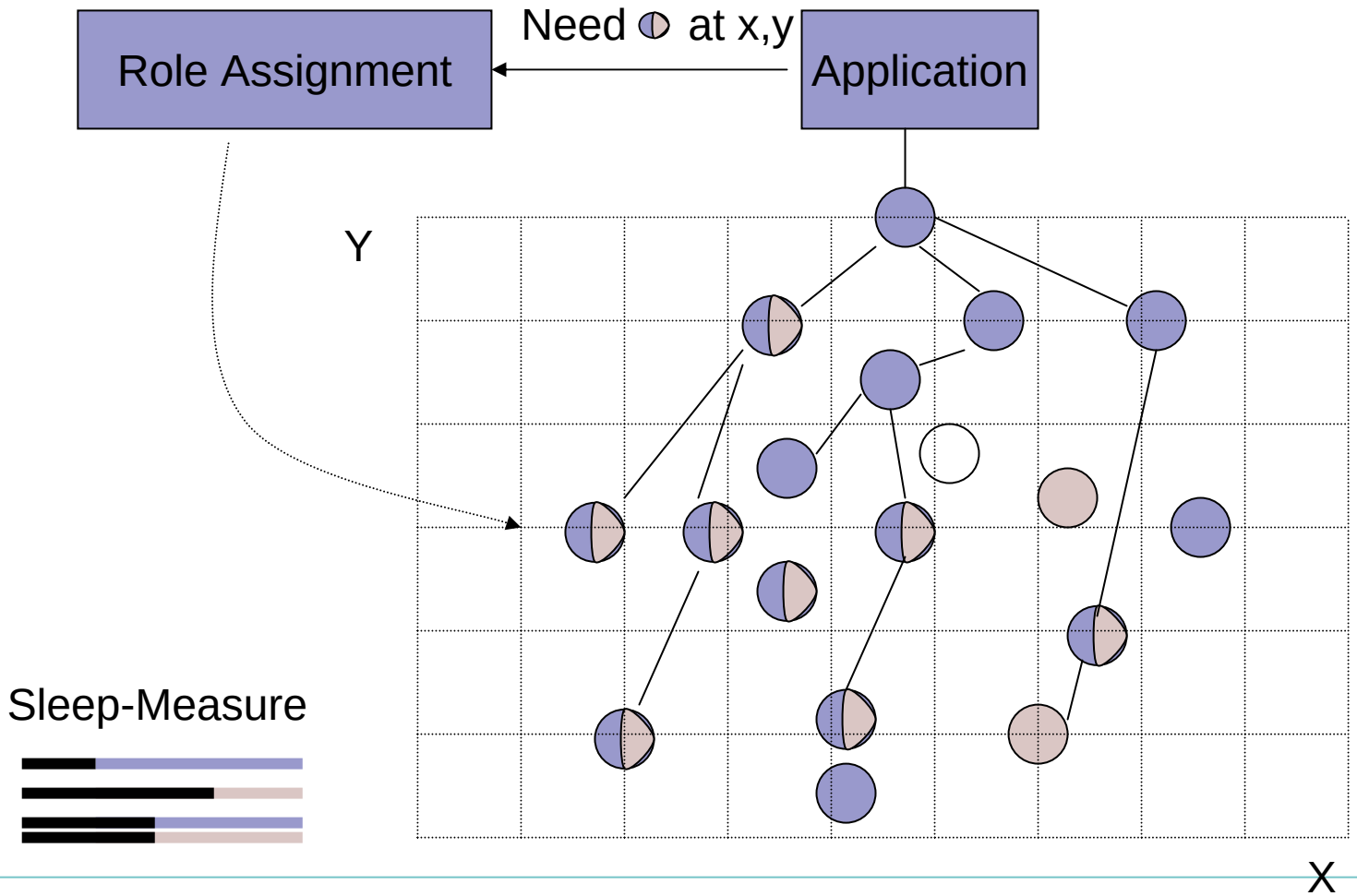

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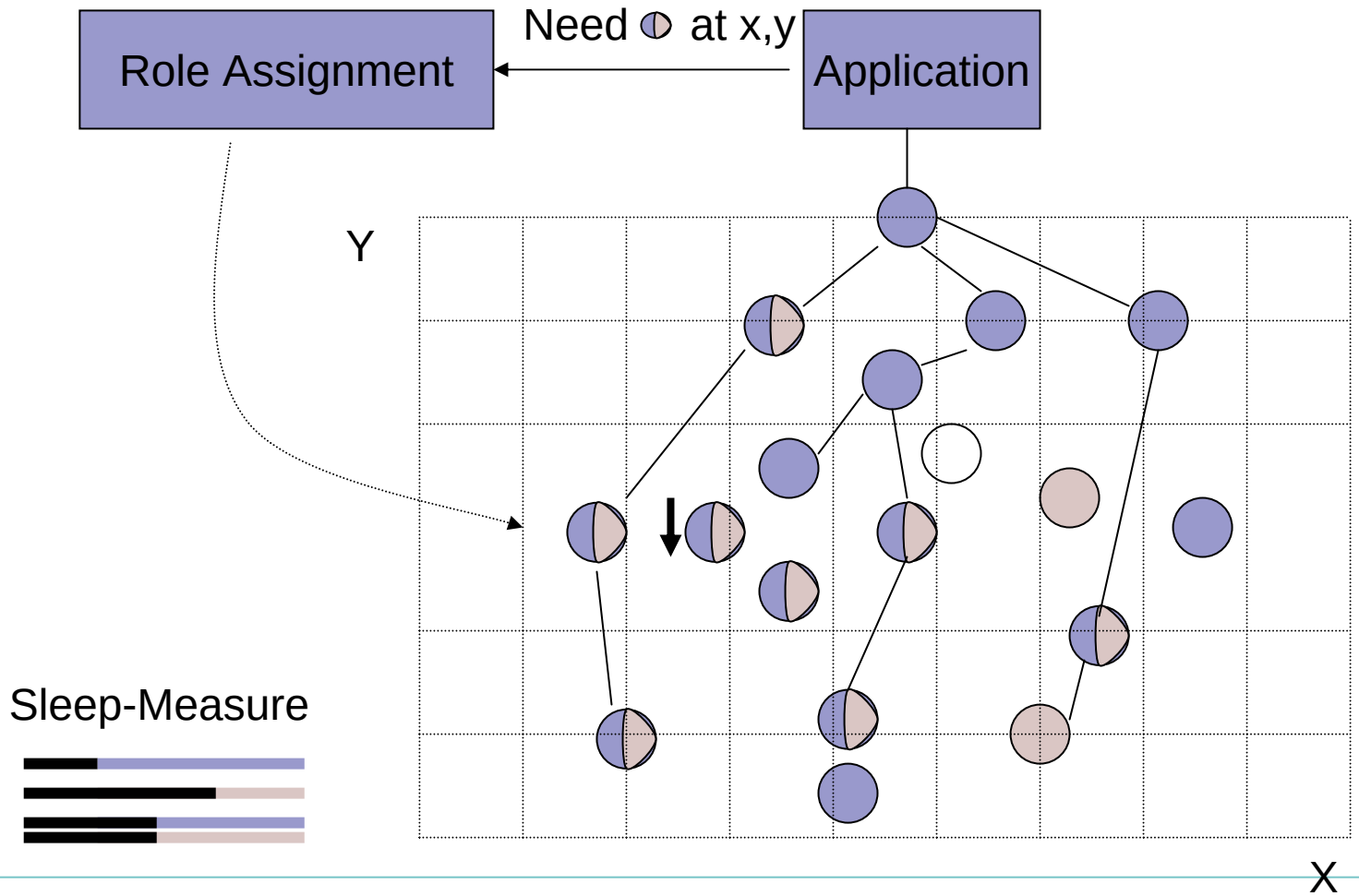

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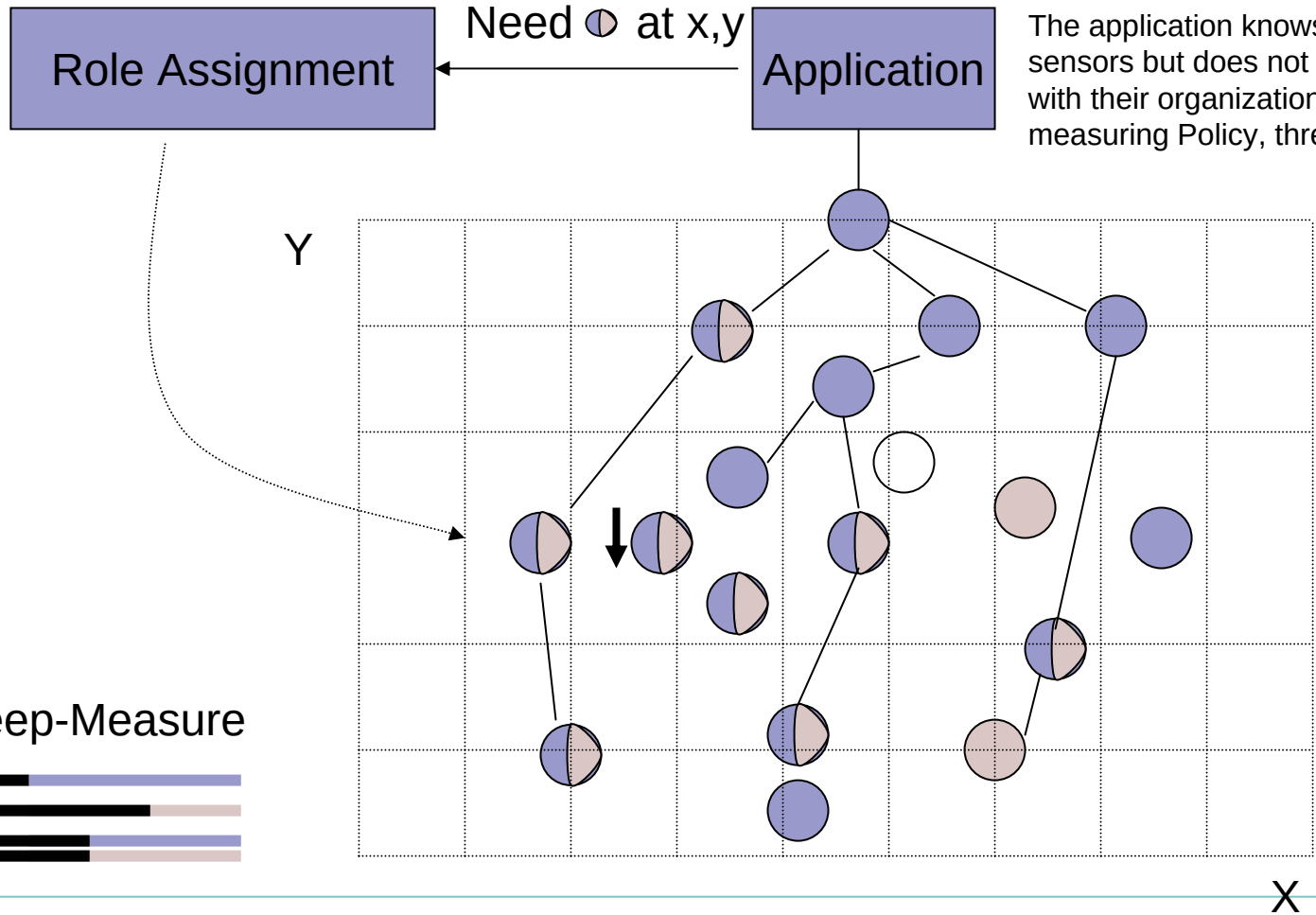

The application knows the position of the sensors but does not need to be concerned with their organization when changing measuring Policy, thresholds, etc.

Summary

- Policy Control Model
  - Decoupling of functionality in the management plane
  - Simplification of service management
  - Flexibility of distributing/combining the functions
- Semantics of roles
  - Service awareness in the NEs
- Self-organizational behaviors in the network
  - Stateless pull

Future Work

- Application of self-organizing concepts in NEs
- Role-based dynamic resource discovery
- Trust model between PCM entities
- Policy conflict resolution
- Protocols and standardization

Thank you!!

Questions?

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