

ENGINEERING ONLINE

Lecture Notes

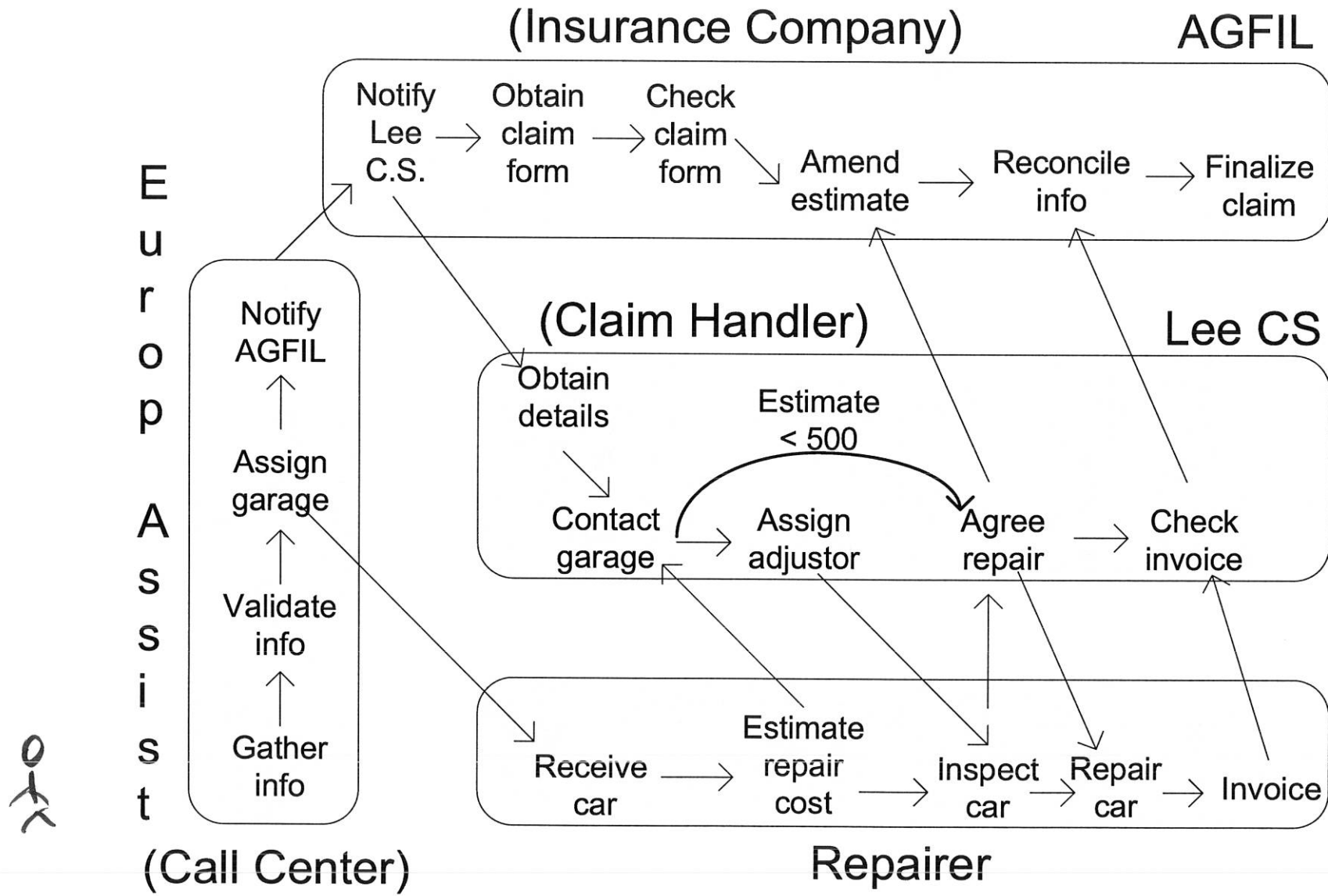
Course Number: CSC 513

Instructor: Dr. Singh

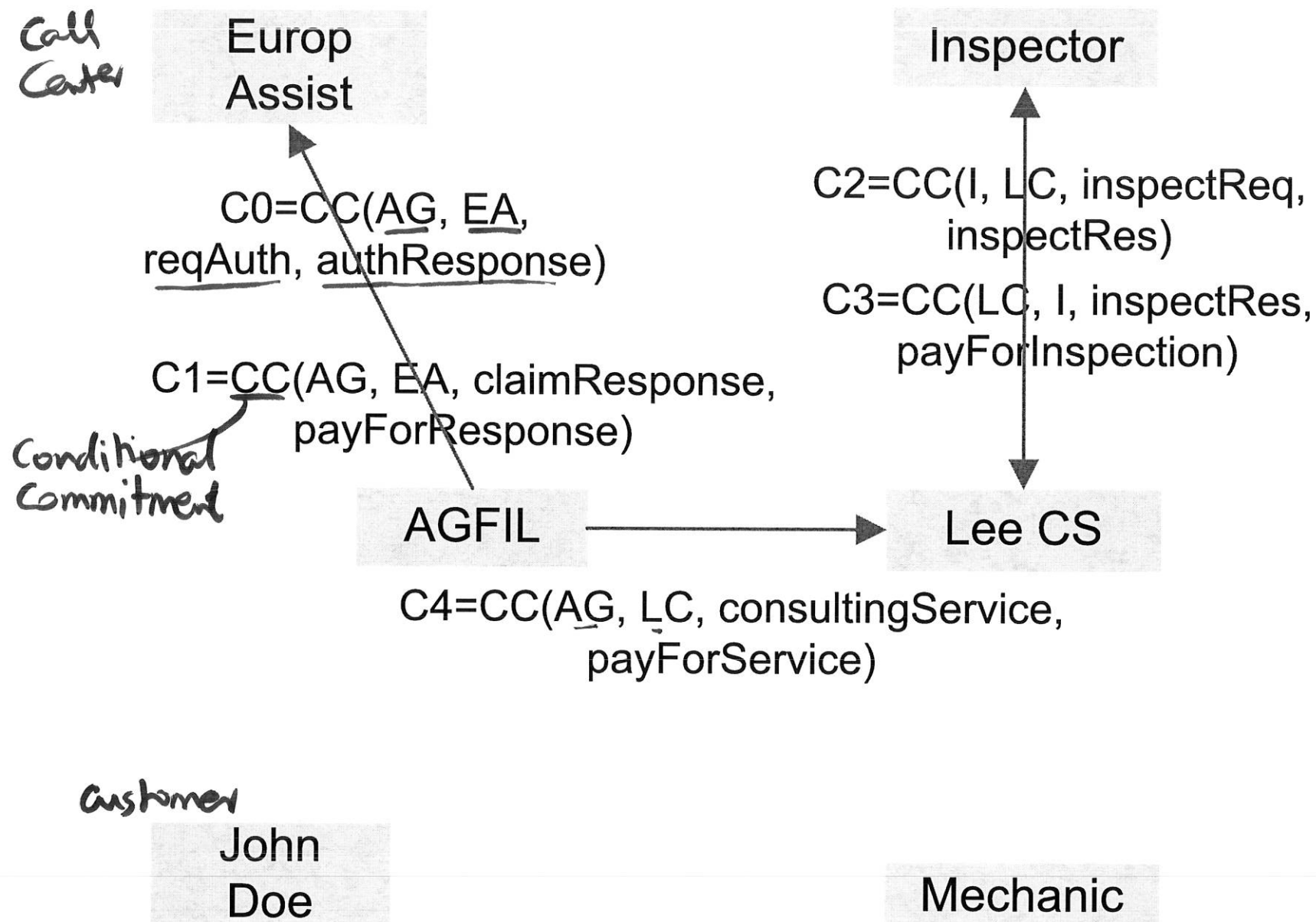
Lecture Number: 13

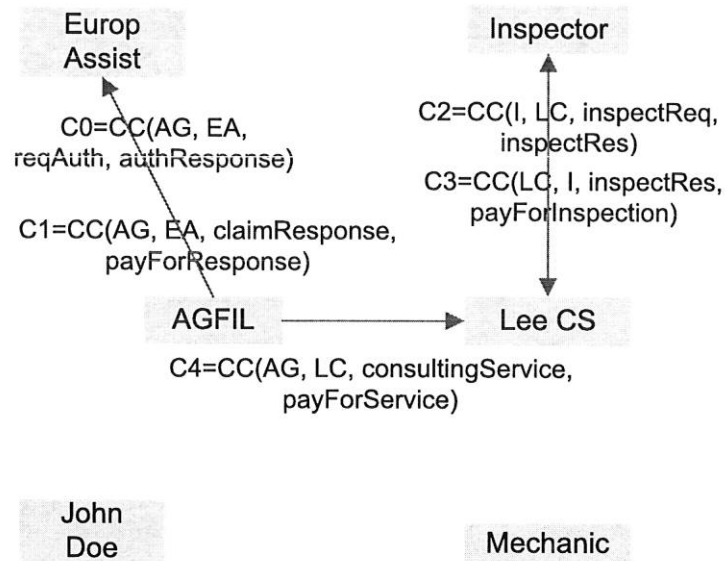


A Real-Life Service Engagement (Repeated)

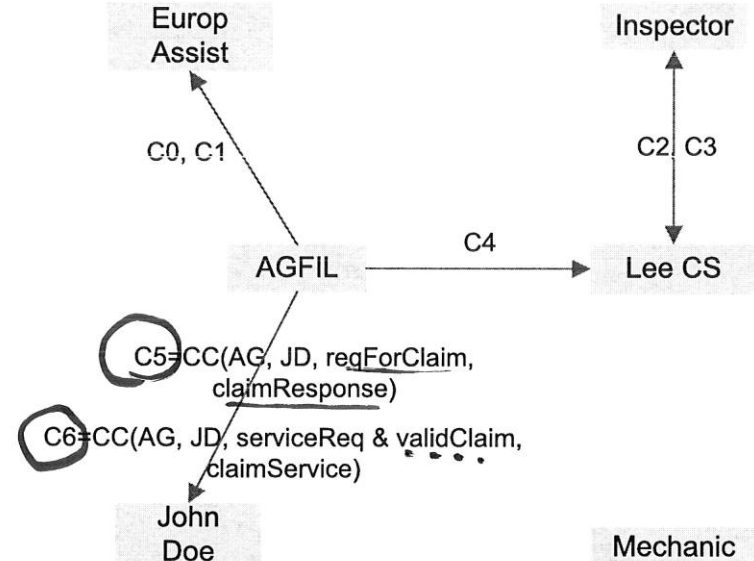


Example Contractual Relationships (at Outset)

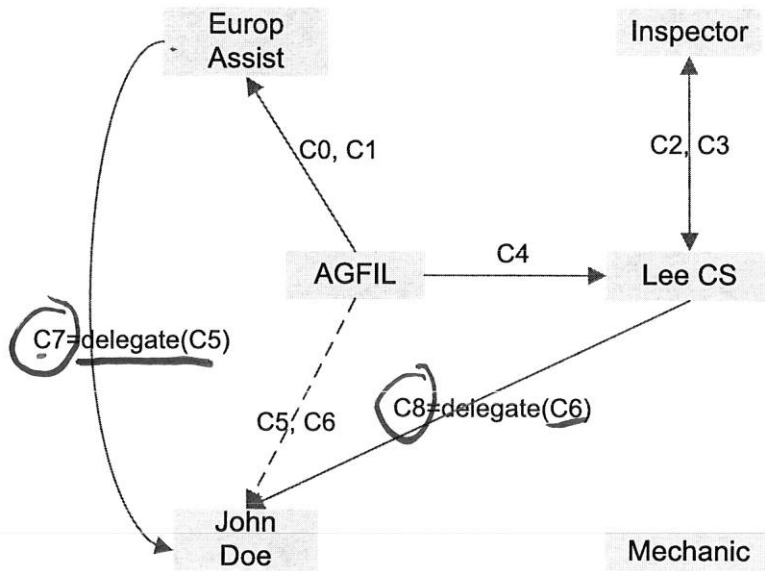




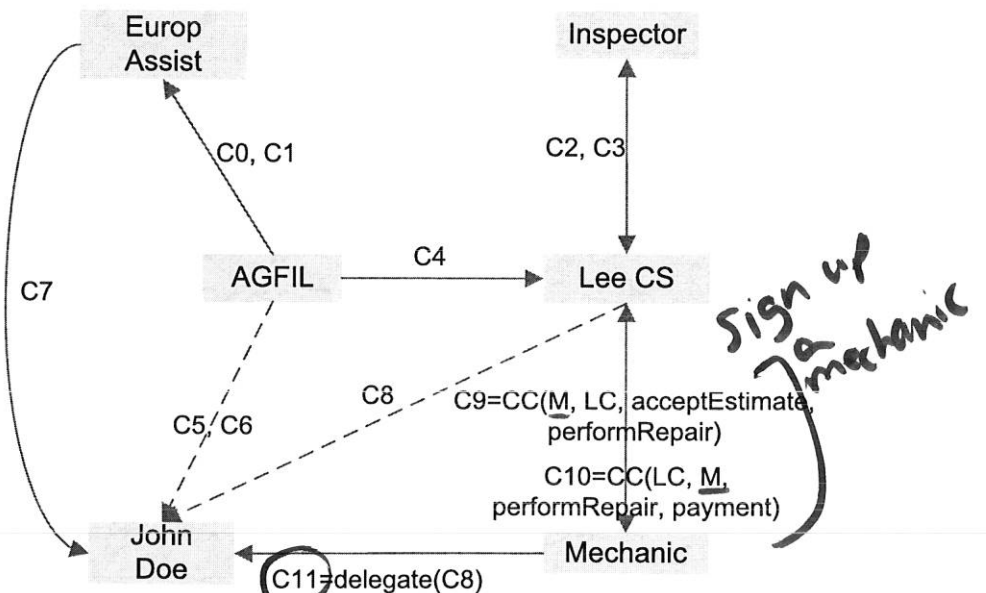
(a)



(b)



(c)



(d)

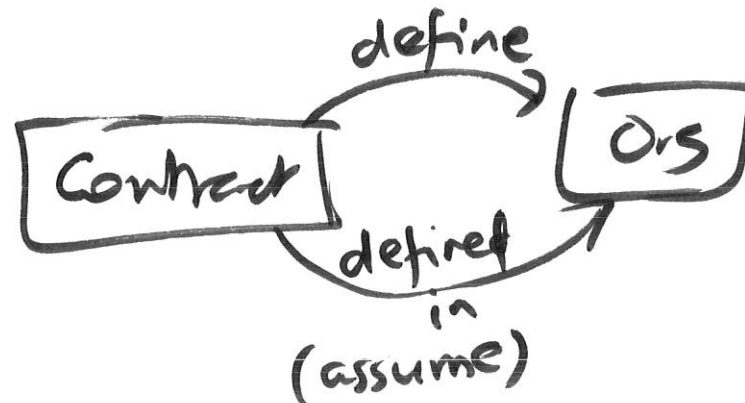
Achieving Governance: Agents and Orgs

Put collaboration center stage

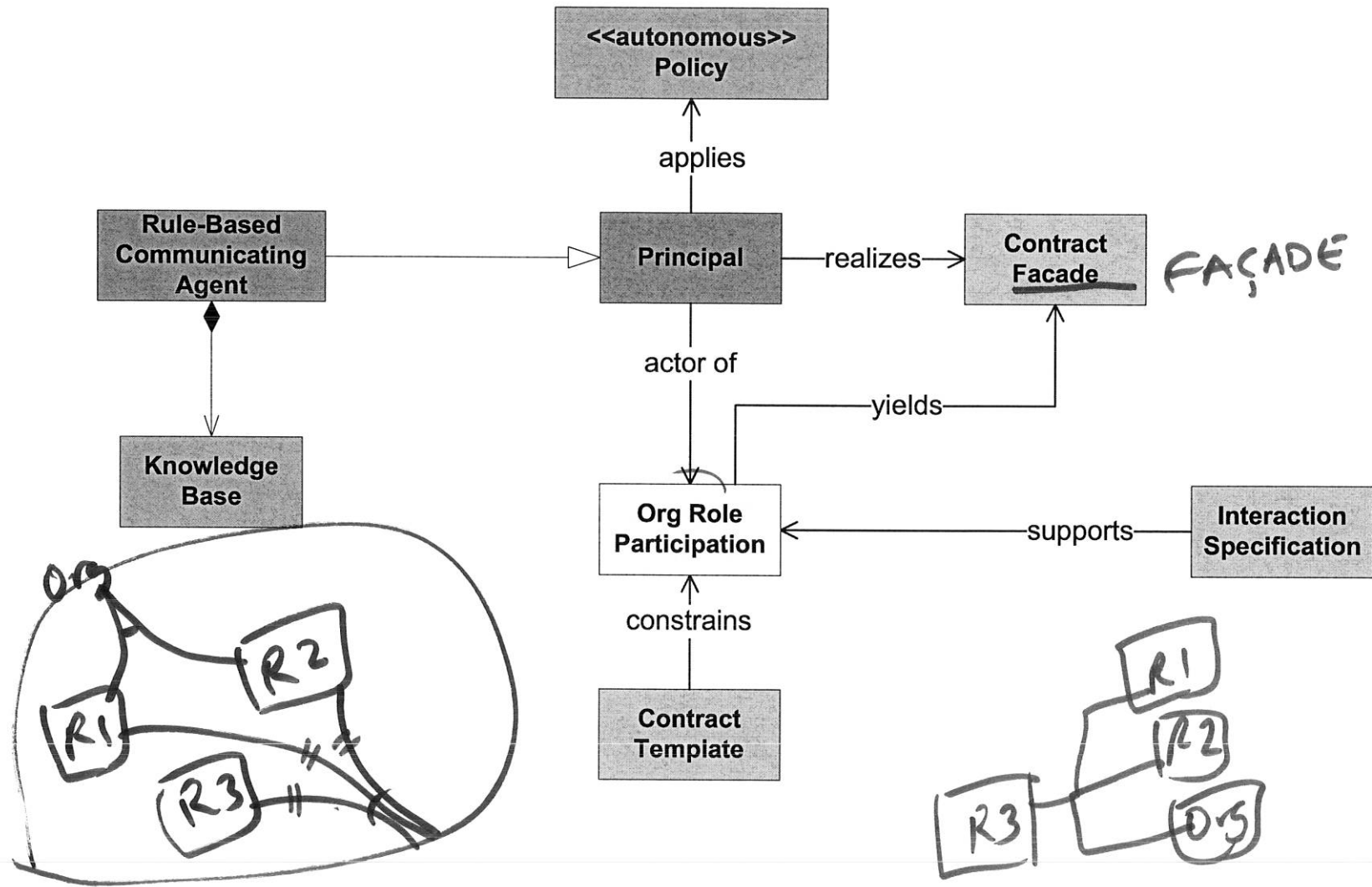
- ▶ Agents represent the stakeholders: people and organizations
 - ▶ Provide a locus for interaction
- ▶ Orgs are like institutions: have an identity and life time distinct from their members; also modeled as agents
 - ▶ Examples: NCSU, UNC System, ...
 - ▶ Provide a locus for roles and authorizations (and other norms)
 - ▶ Enforce behavioral constraints on members
 - ▶ Their main hold over their members is the threat of expulsion

Duality of Contracts and Orgs

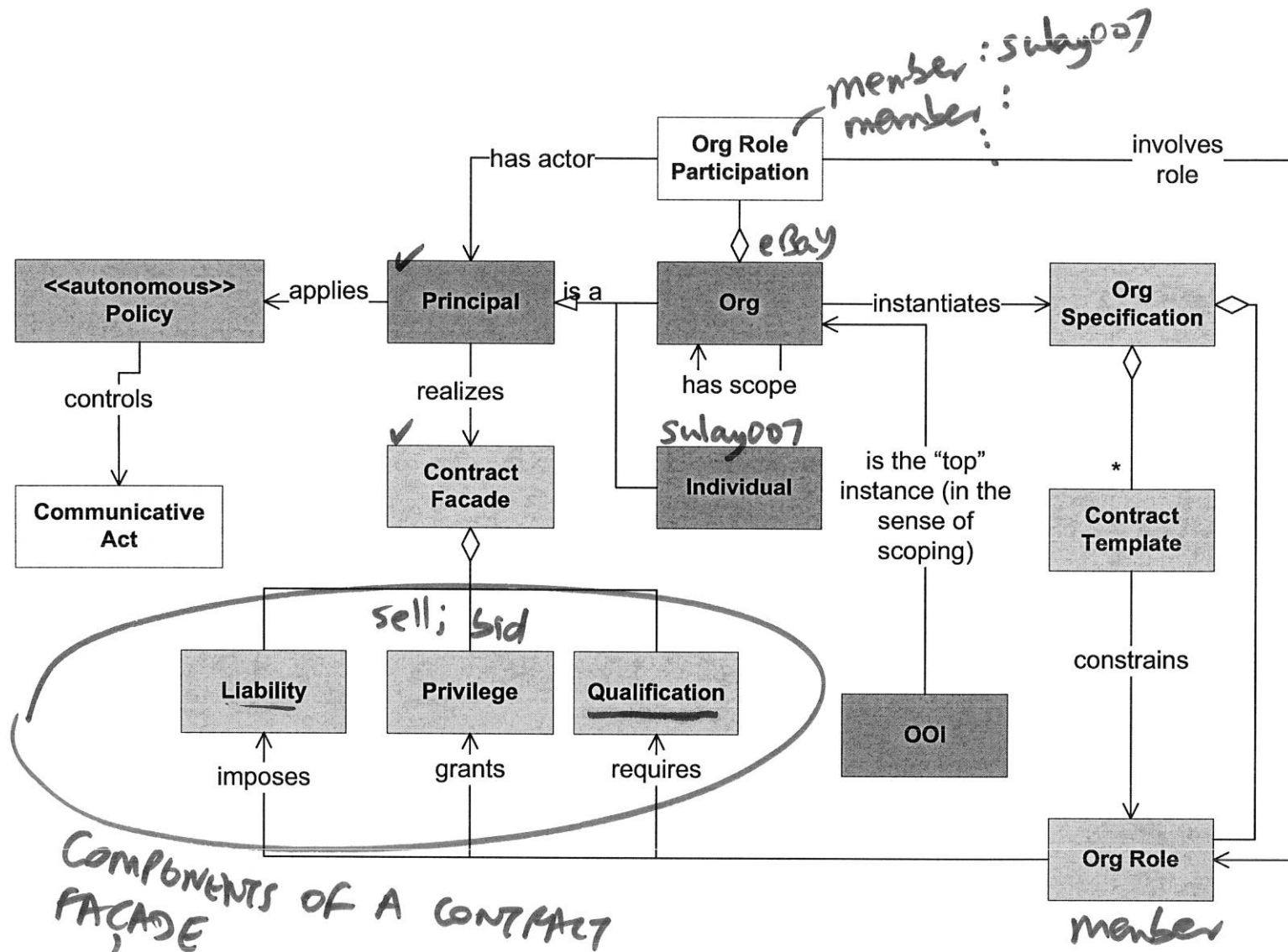
- ▶ A set of contracts define an Org
 - ▶ Roles, with their qualifications, privileges, liabilities
- ▶ An Org provides the context for defining contracts



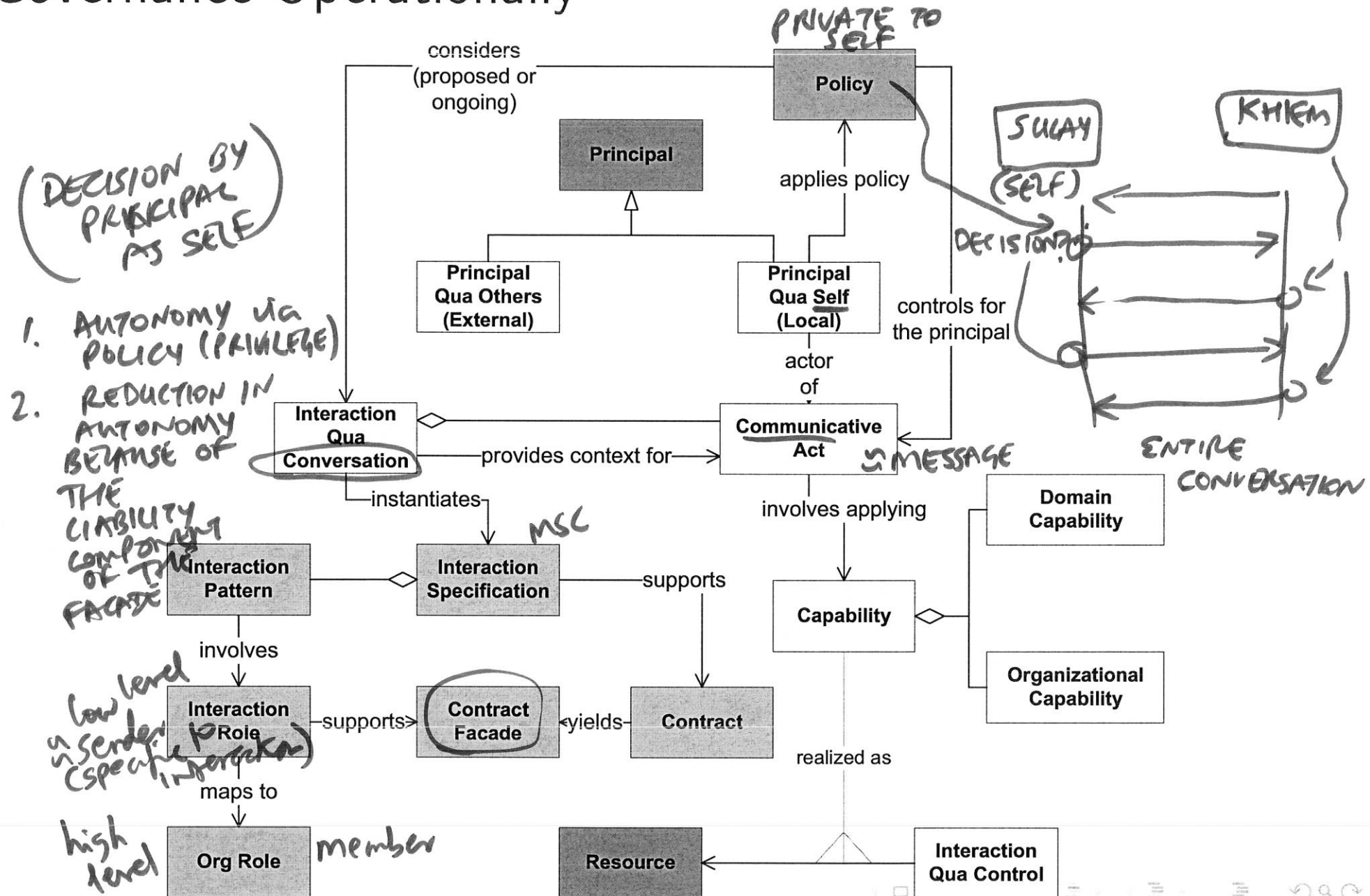
Governance Overview

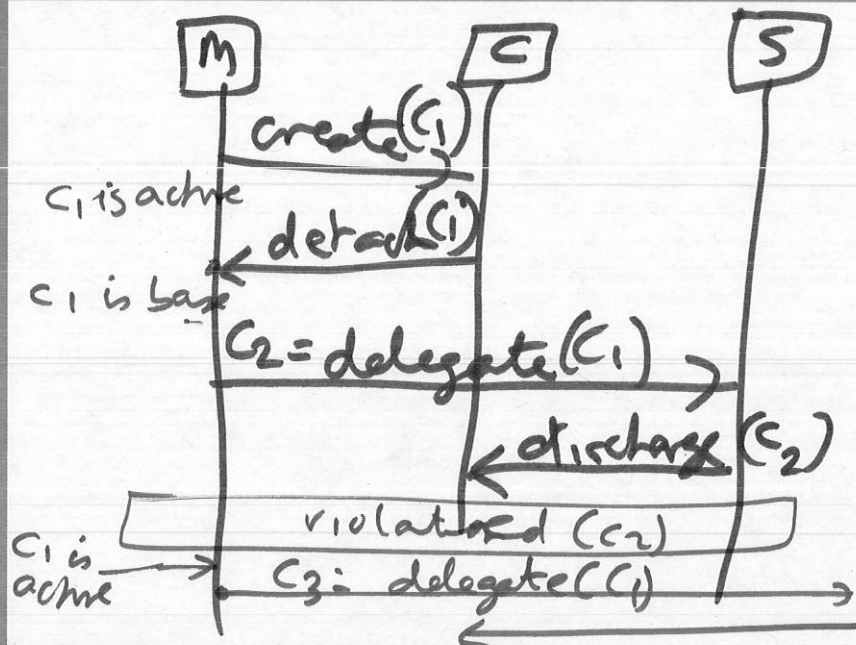


Governance Conceptually

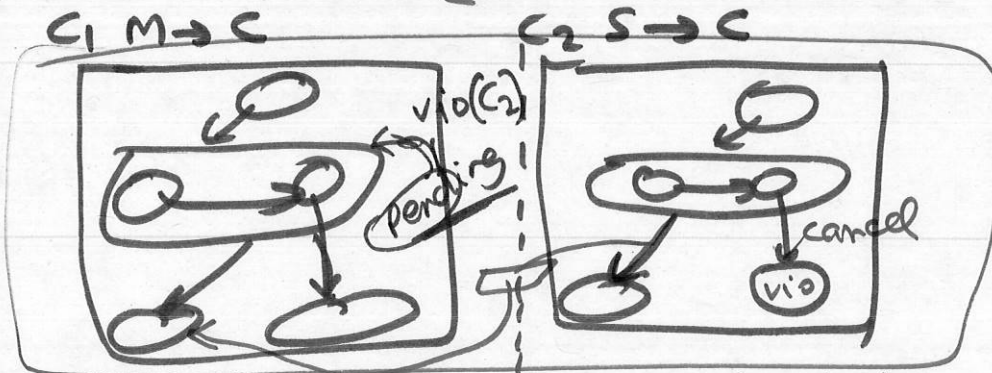
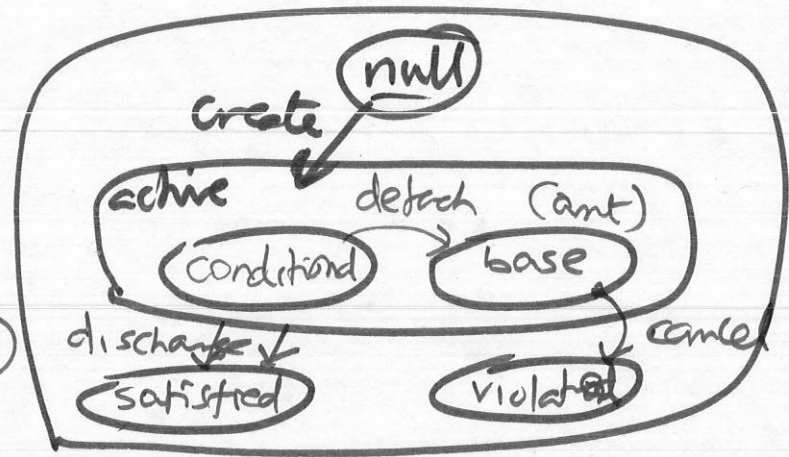


Governance Operationally





(Cons)



RELATE ABOVE GIVEN
 $C_2 = \text{delegate}(C_1)$

Parallel states in the same diagram

$\text{delegate}(C_1) \Rightarrow \text{create}(C_2)$

$\Rightarrow \text{null}(C_1)$

OR $\Rightarrow \text{pending}(C_1)$

$\text{sat}(C_2) \Rightarrow \text{sat}(C_1)$

? $\text{vio}(C_2) \Rightarrow \text{vio}(C_1)$

(1) need a way to revive C_1

(2) no going back to C_1

(1) Can revive

$\text{sat}(C_2) \Rightarrow \text{sat}(C_1)$

$\text{vio}(C_2) \Rightarrow \text{active}(C_1)$

(2) Can't revive

forget C_1 upon delegate

$\text{delegate}(C_1) \Rightarrow \text{null}(C_1)$



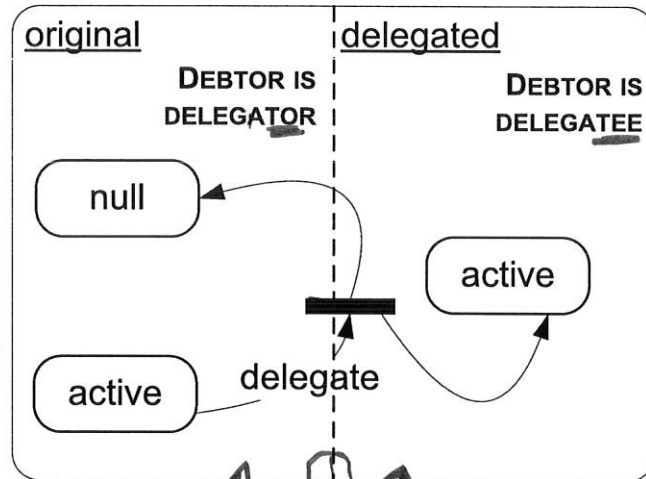
Patterns for Delegate

ONLY SHOWING
RELEVANT STATES

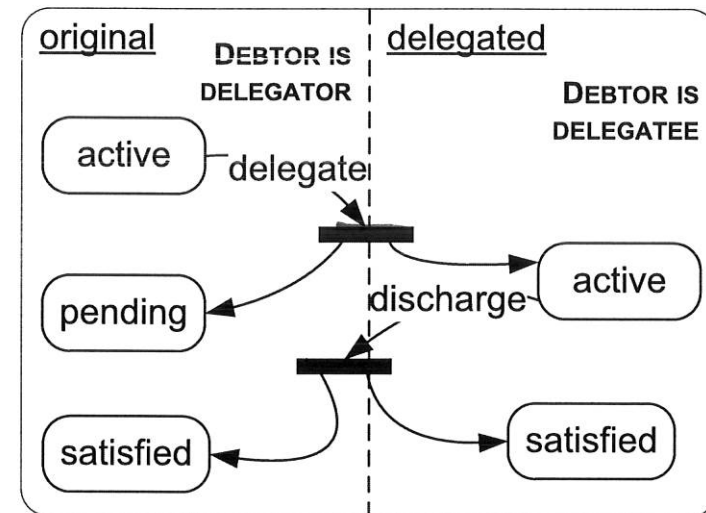


signifies
concurrent
transitions

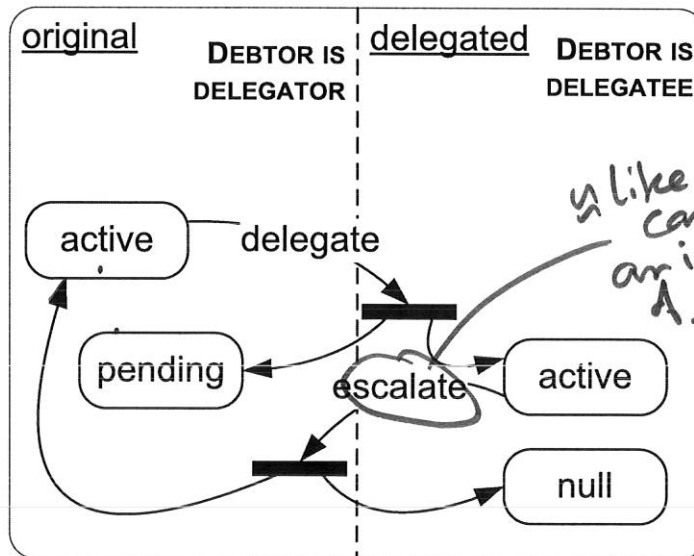
Parallel states



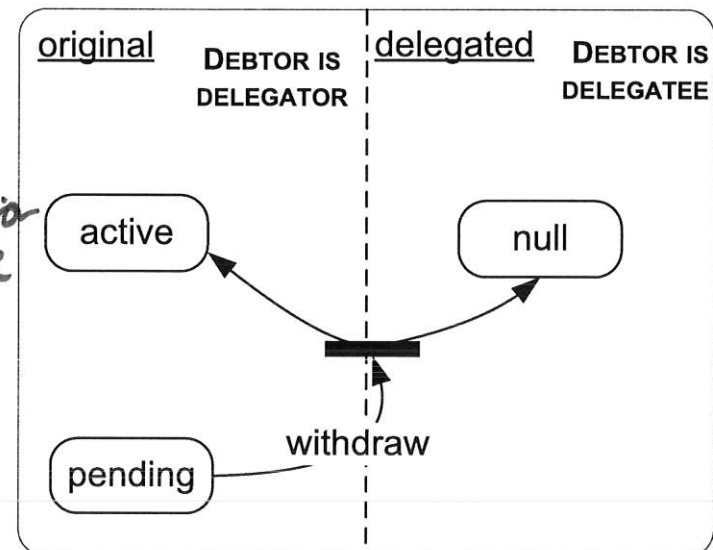
(a) Transfer responsibility



(b) Retain responsibility



(c) Escalate



(d) Withdraw delegation