

Business Process Management: Concepts, Languages, Architectures

Second Edition

Mathias Weske

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Mathias Weske

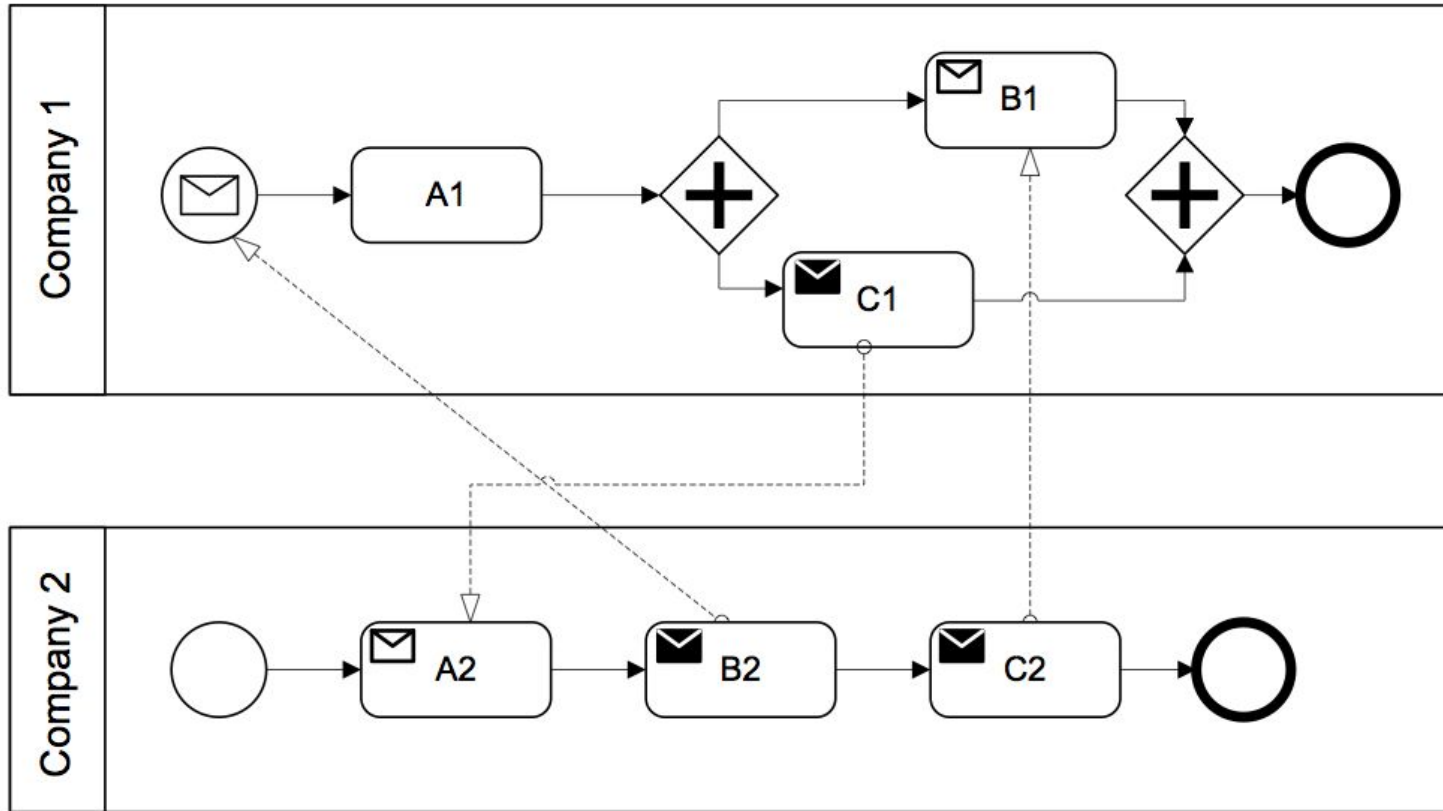
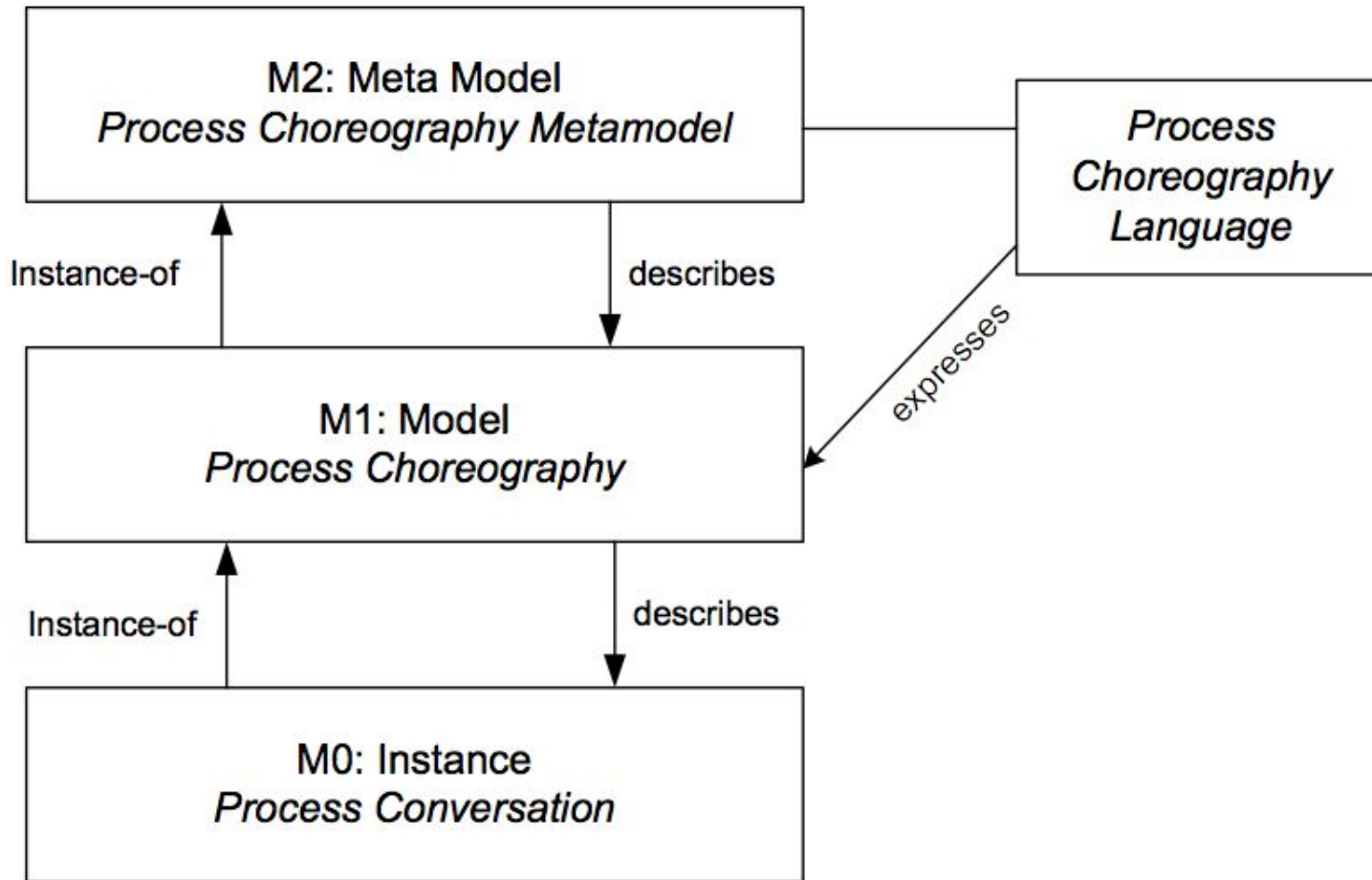


Fig. 5.1. Deadlock of interacting process orchestrations



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Fig. 5.2. MOF levels of process choreographies

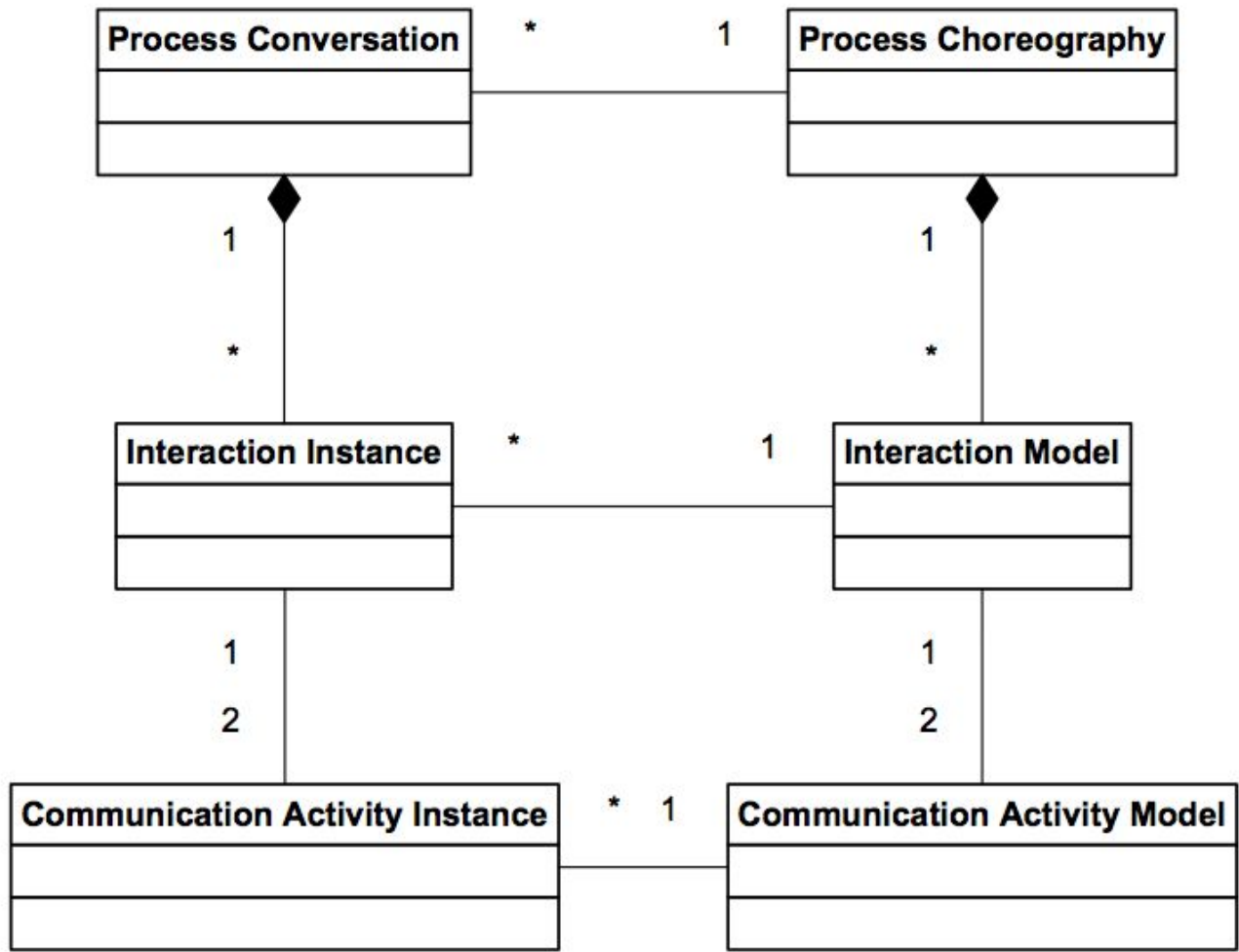
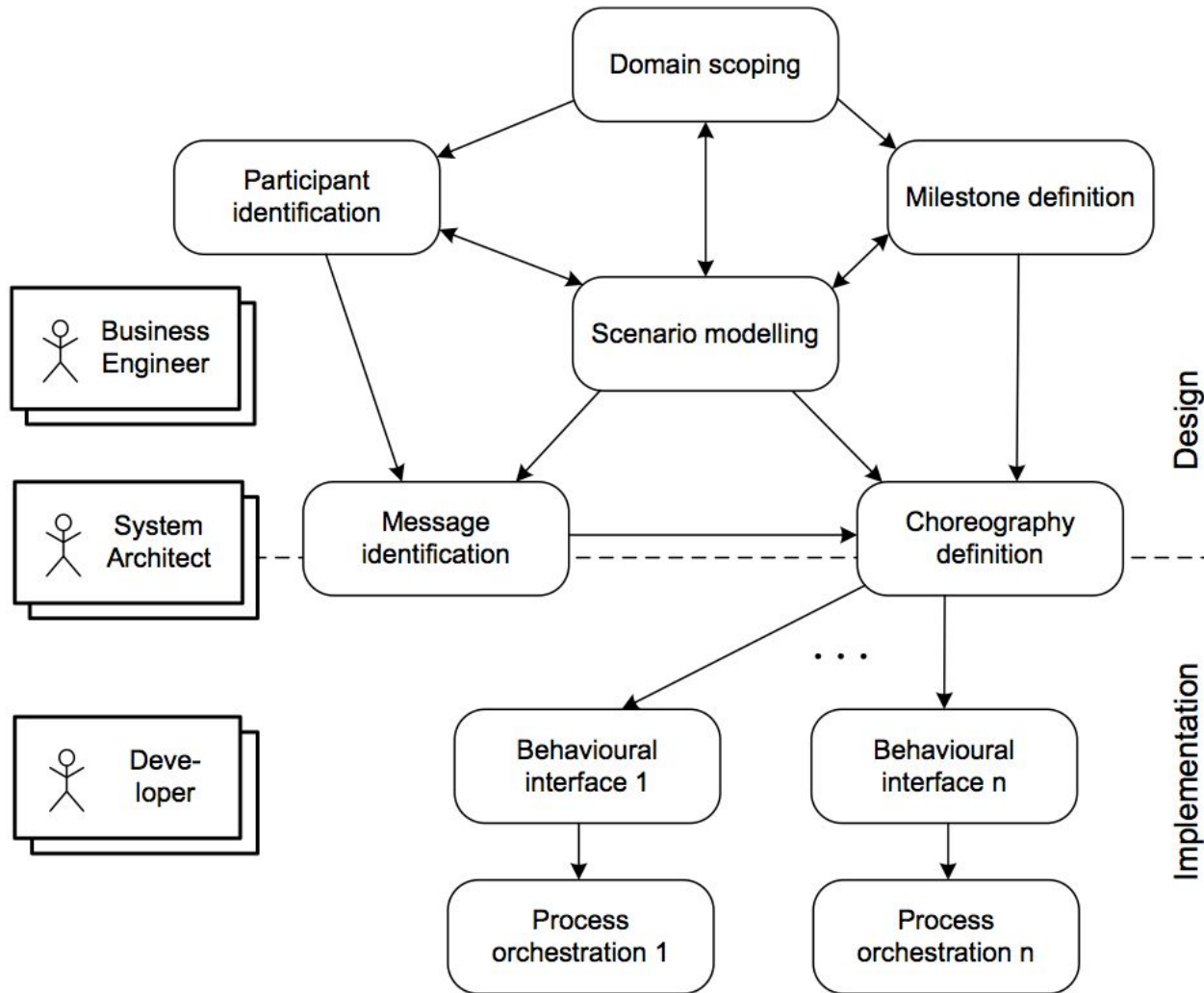


Fig. 5.3. Process choreography conceptual model

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Fig. 5.4. Phases during choreography design and implementation

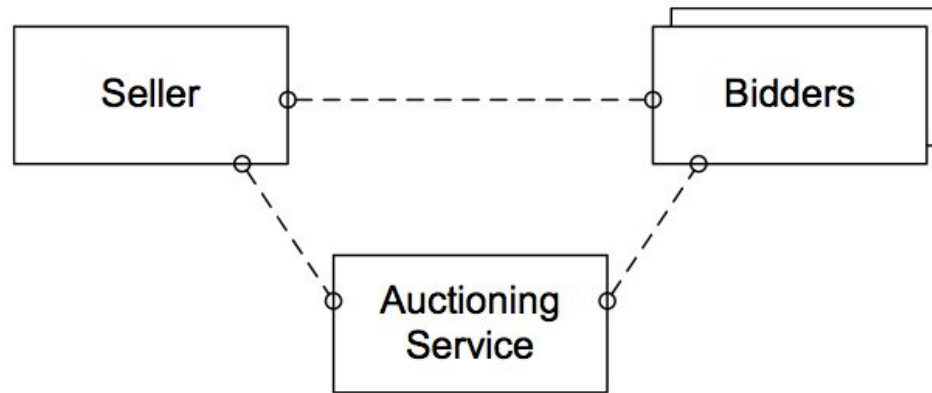


Fig. 5.5. High-level structural model of participants in bidding scenario

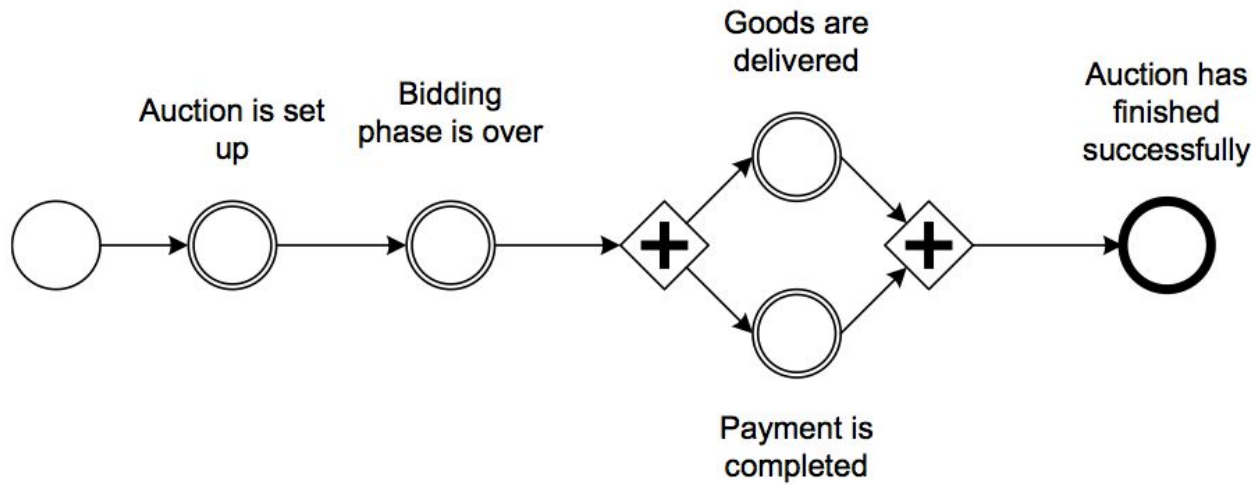
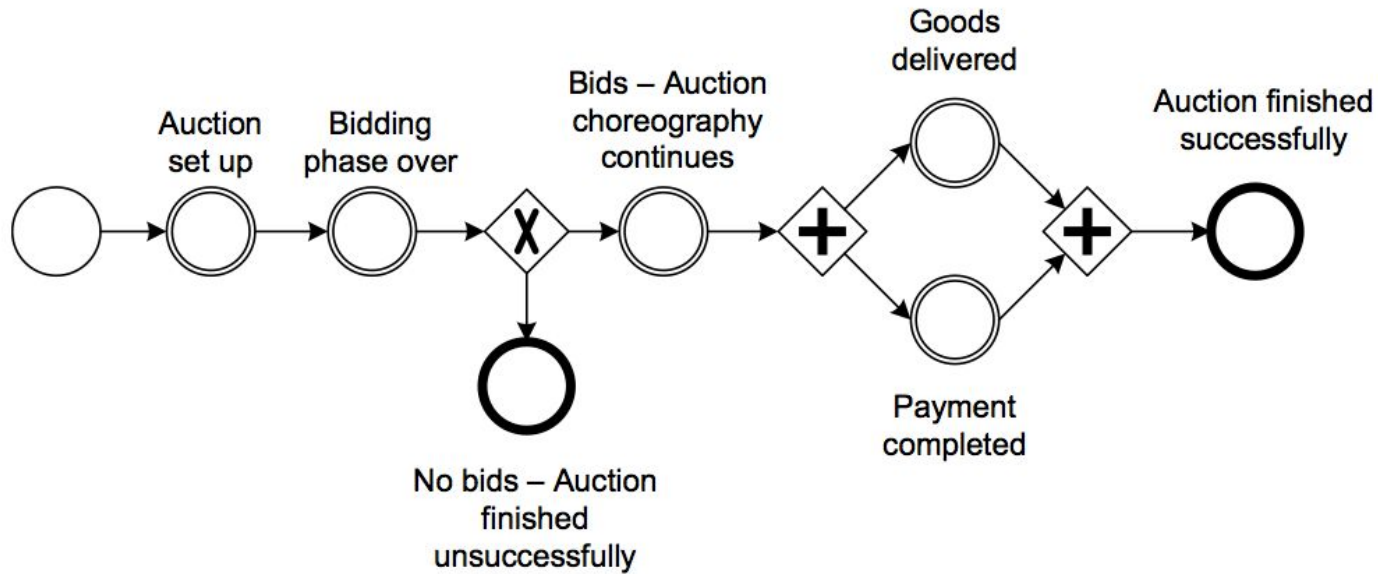
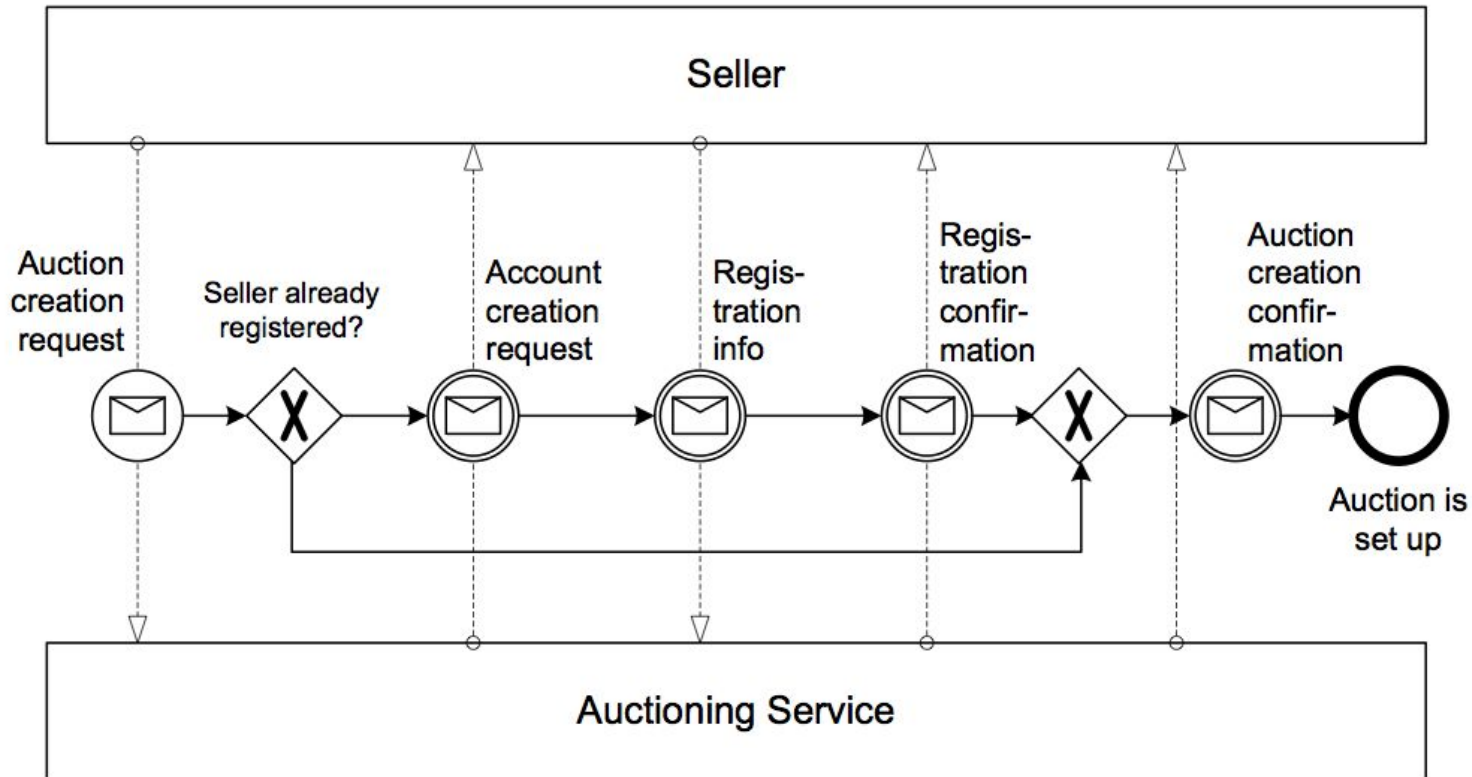


Fig. 5.6. High-level behavioural model for bidding scenario, represented by milestones



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Fig. 5.7. High-level behavioural model for bidding scenario, with different outcomes



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Fig. 5.8. Collaboration scenario: reaching milestones through interactions

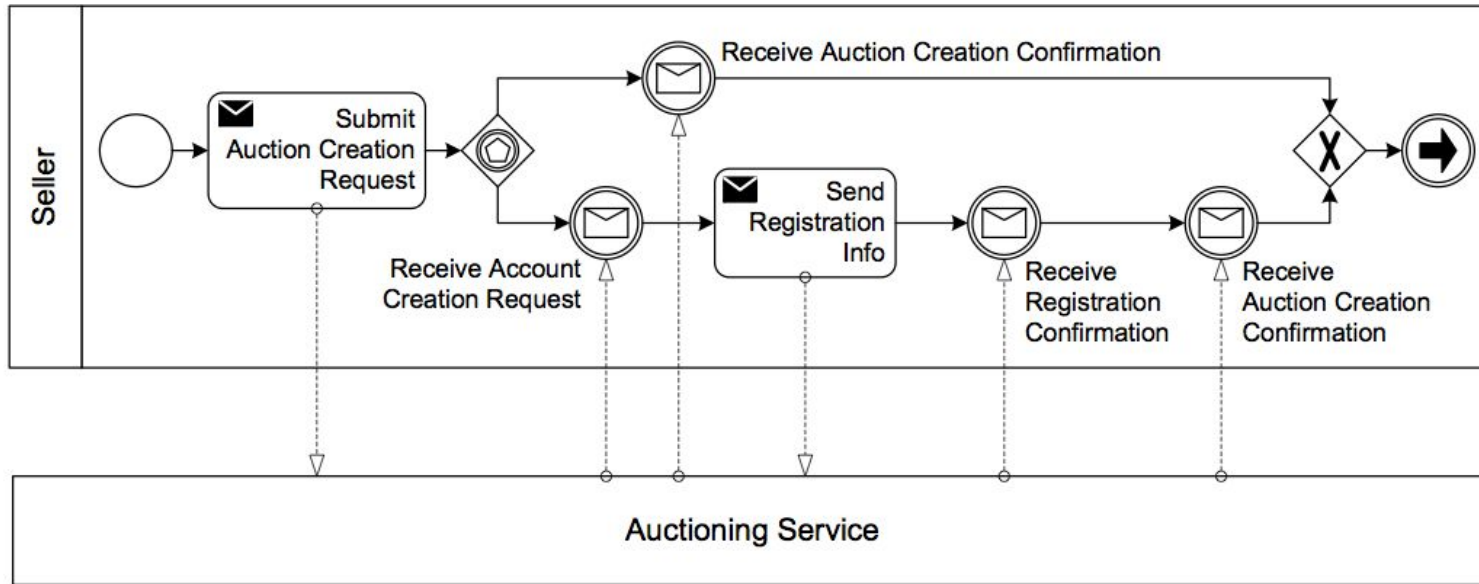
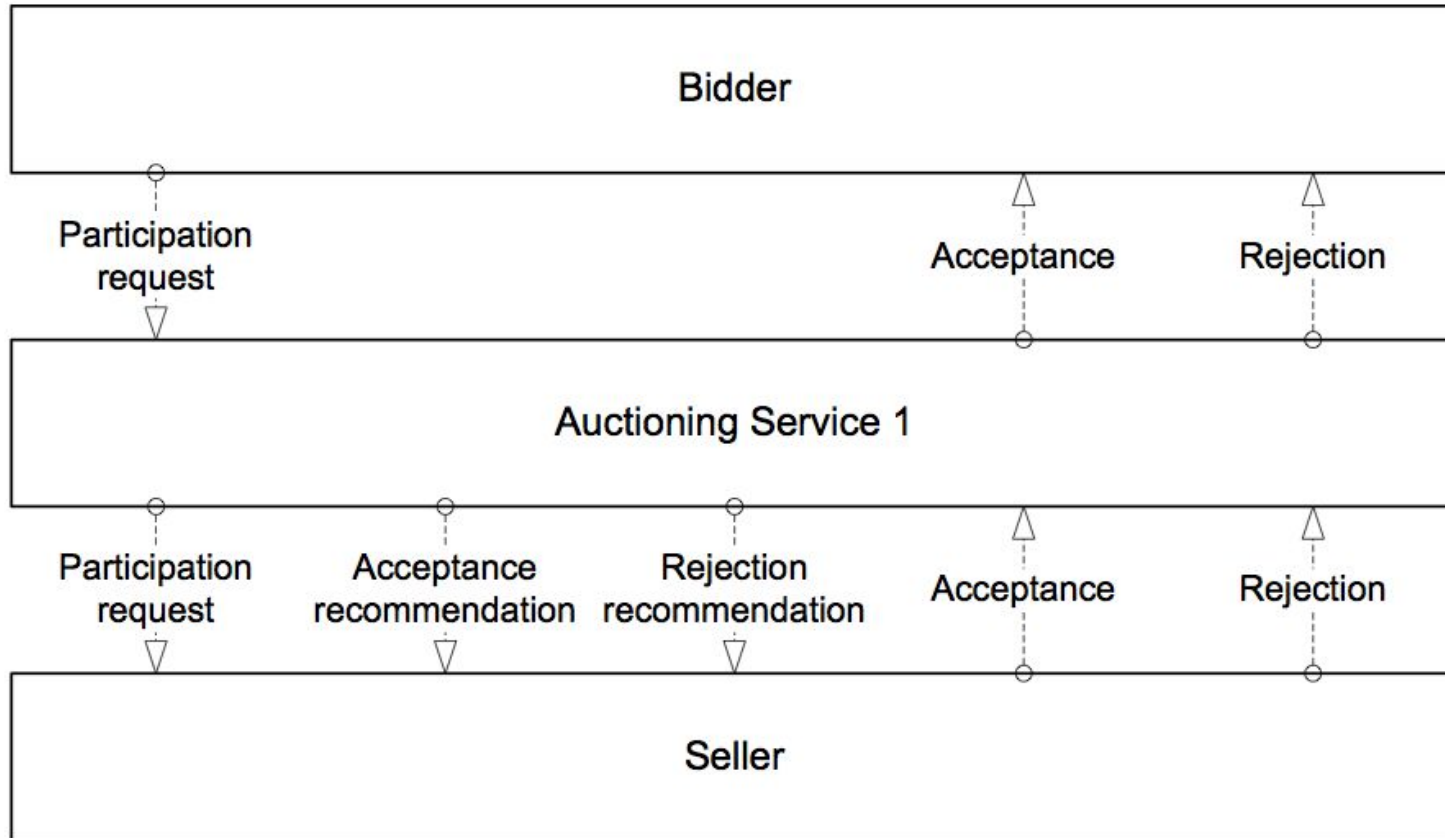
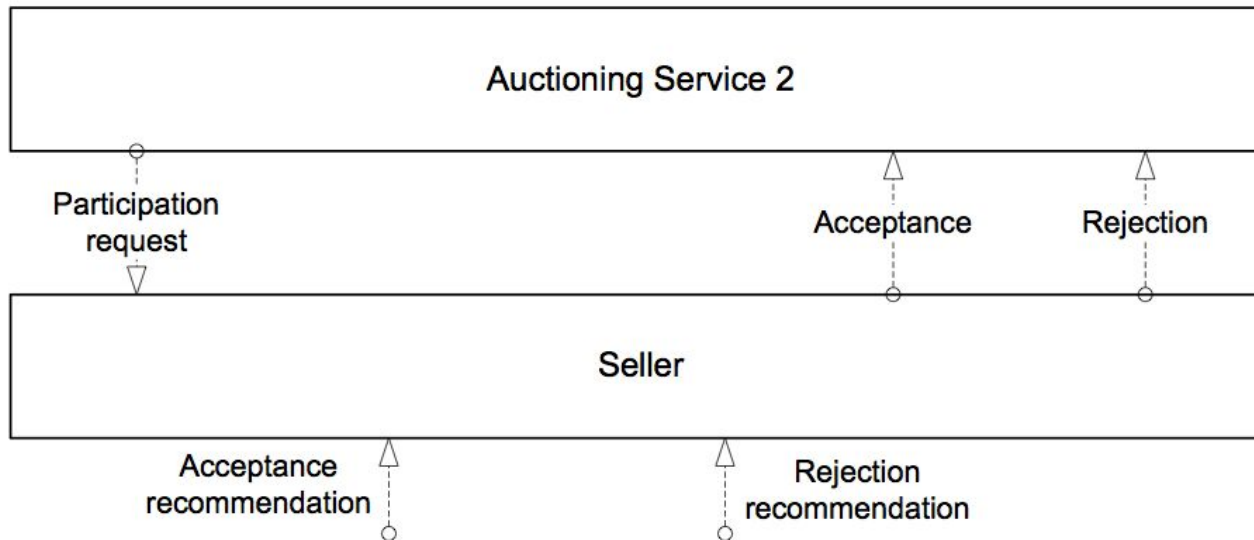


Fig. 5.9. Behavioural interface for seller



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Fig. 5.10. Interactions of participants in auctioning scenario



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Fig. 5.11. Alternative auctioning service results in weak structural compatibility

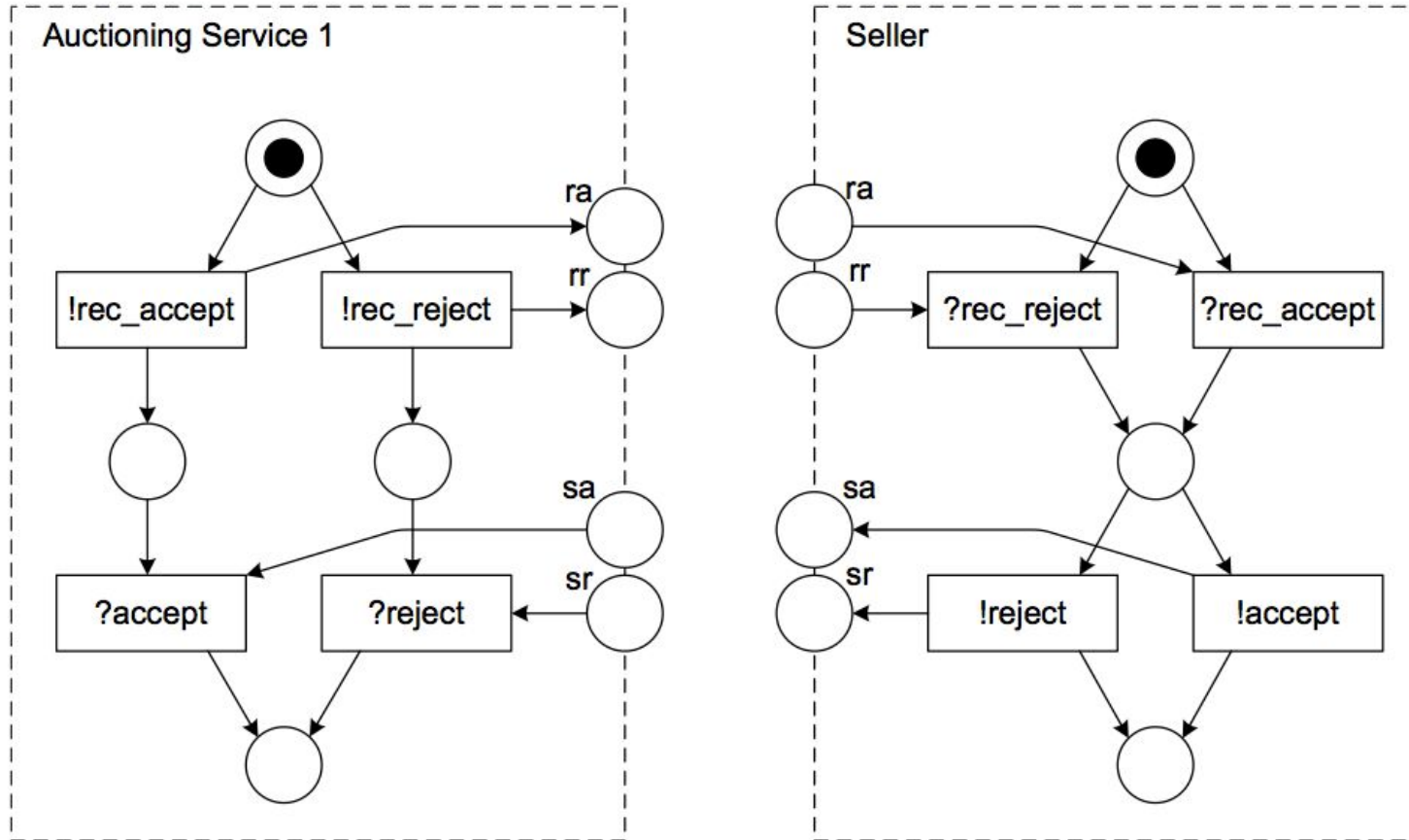
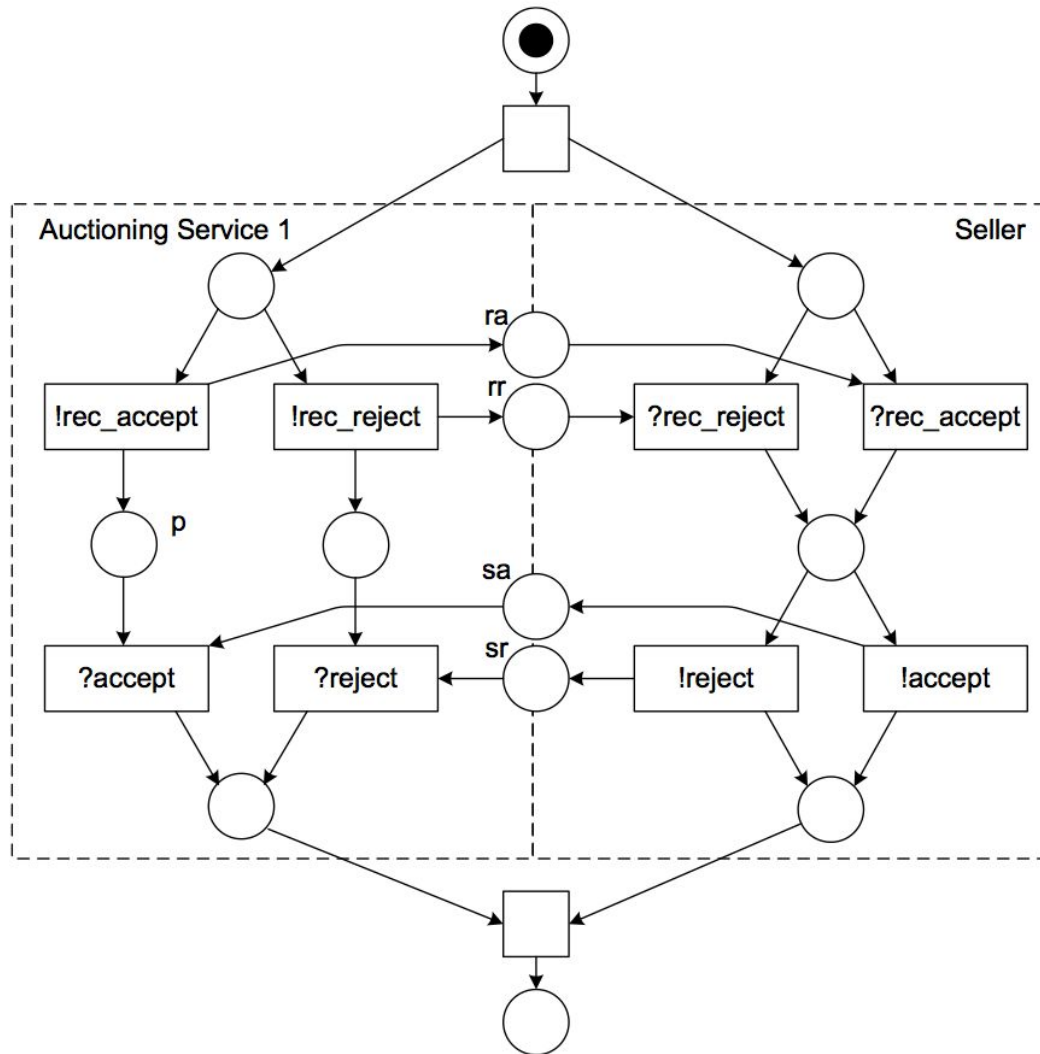
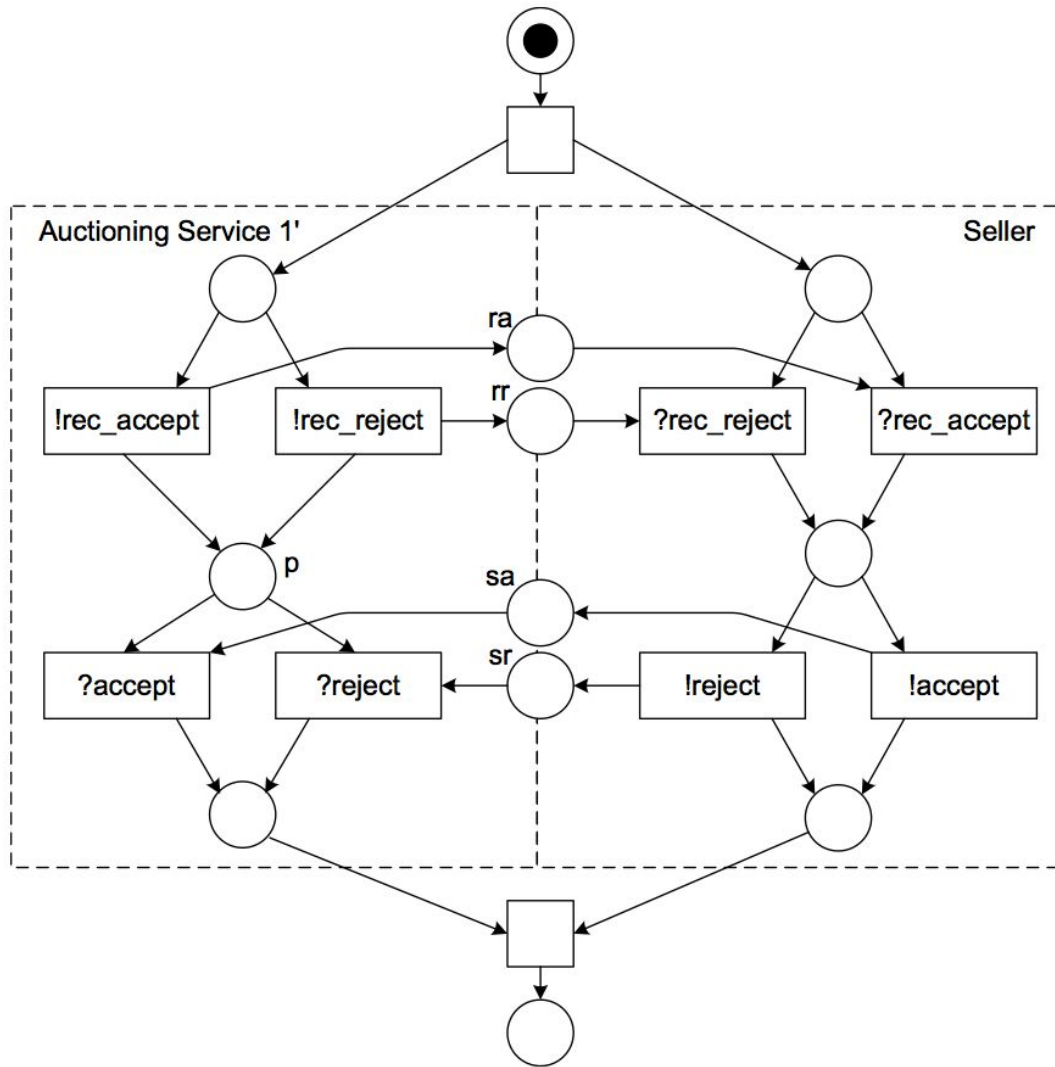


Fig. 5.12. Workflow modules as basis for checking compatibility



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Fig. 5.13. Workflow net as composition of workflow modules



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Fig. 5.14. Workflow modules that are compatible

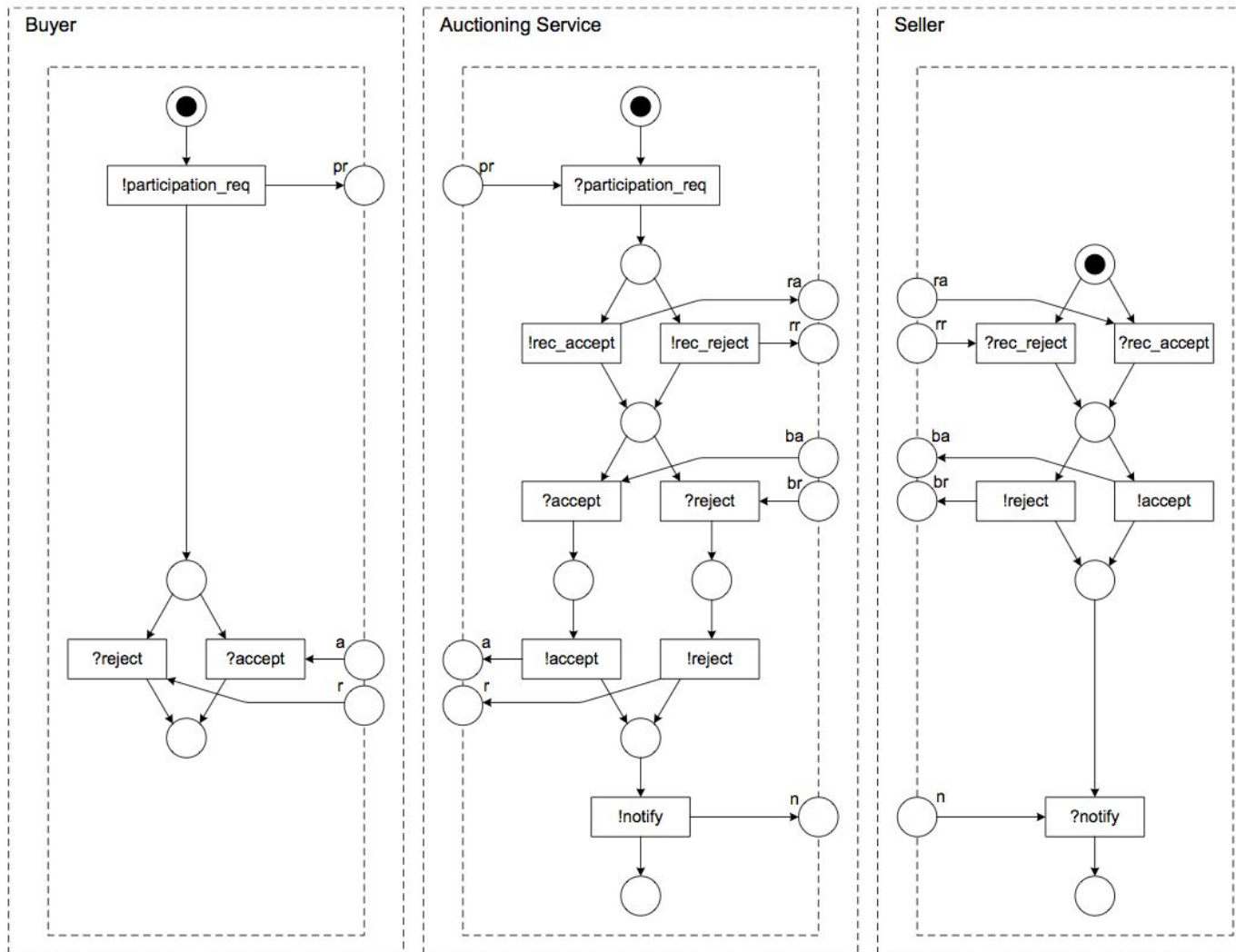
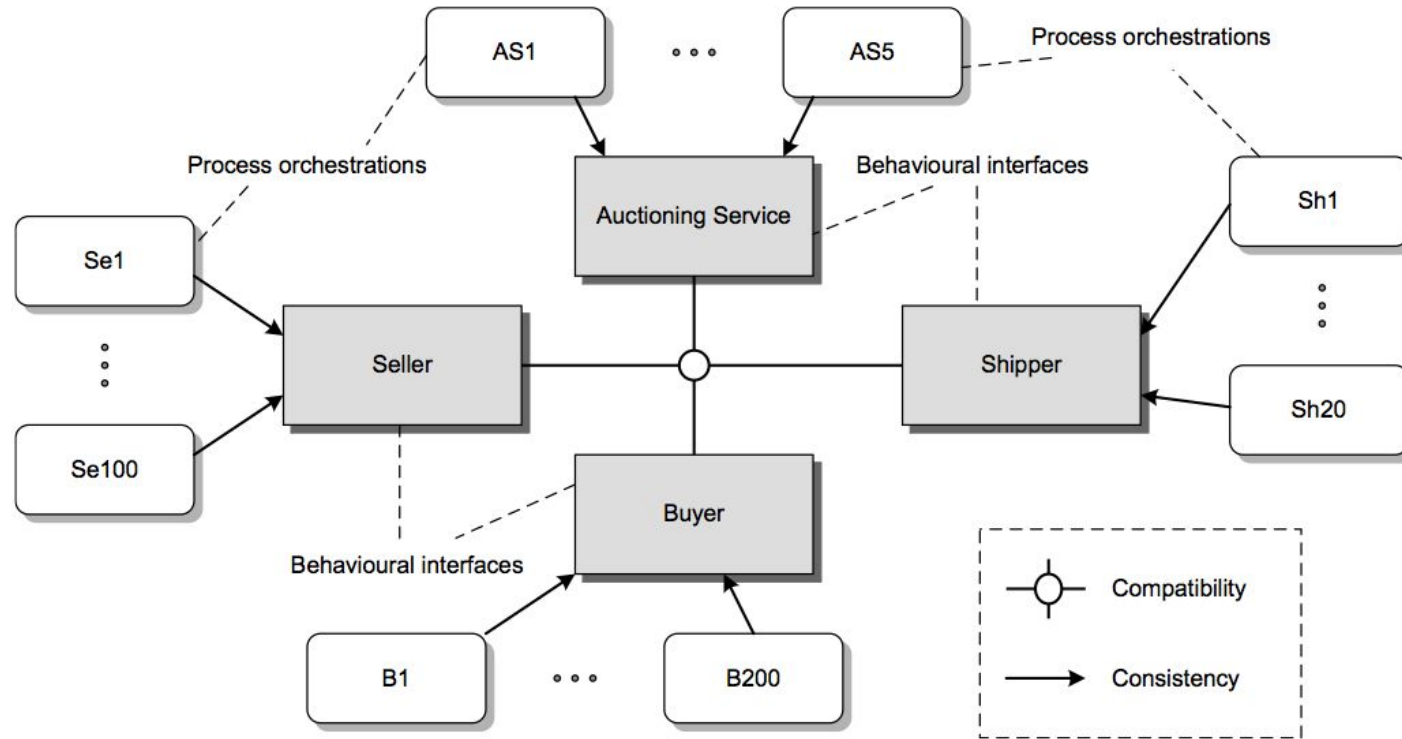


Fig. 5.15. Behavioural interfaces: getting a participation permission

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Fig. 5.16. Participants roles with compatibility and consistency relations in a reverse auctioning scenario

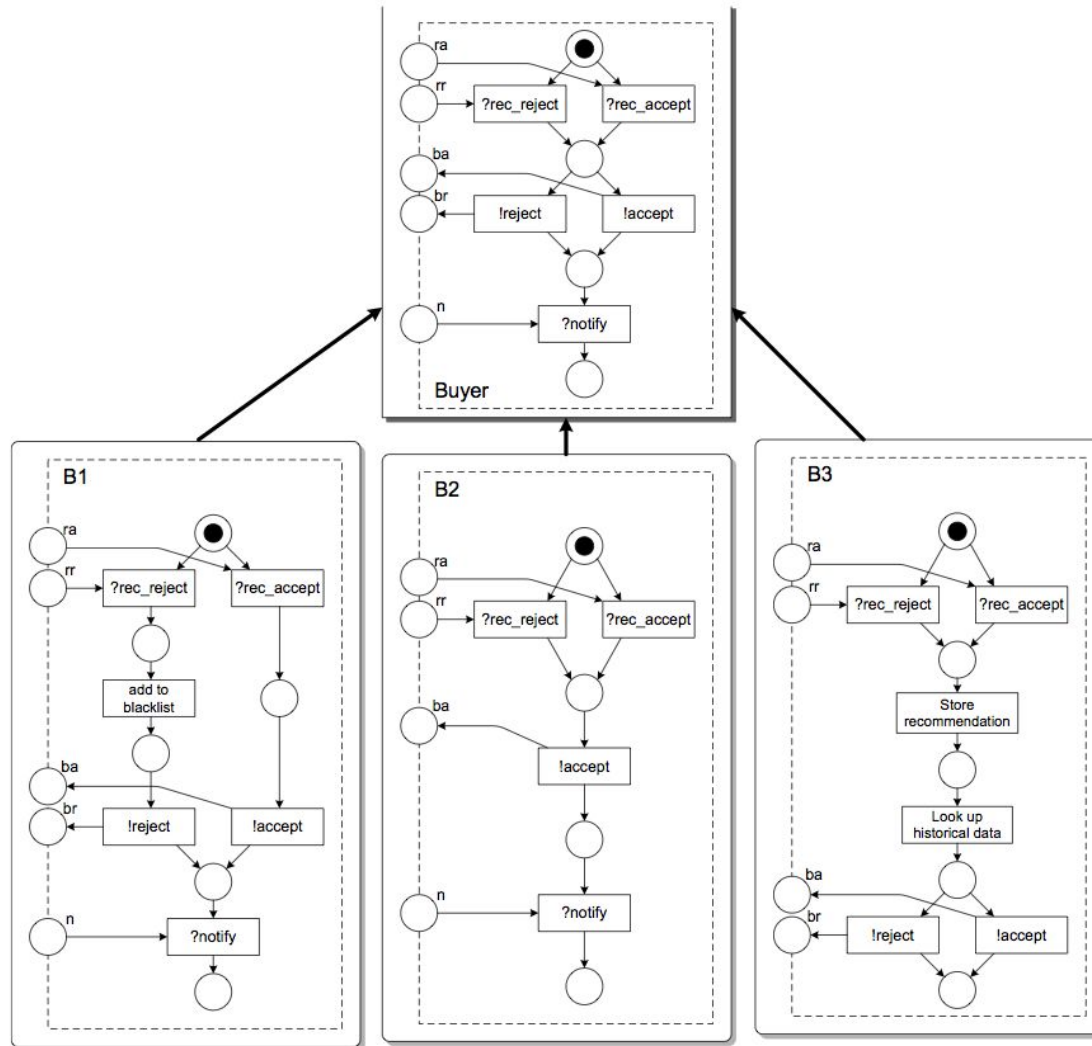


Fig. 5.17. Alternative implementations for buyer role

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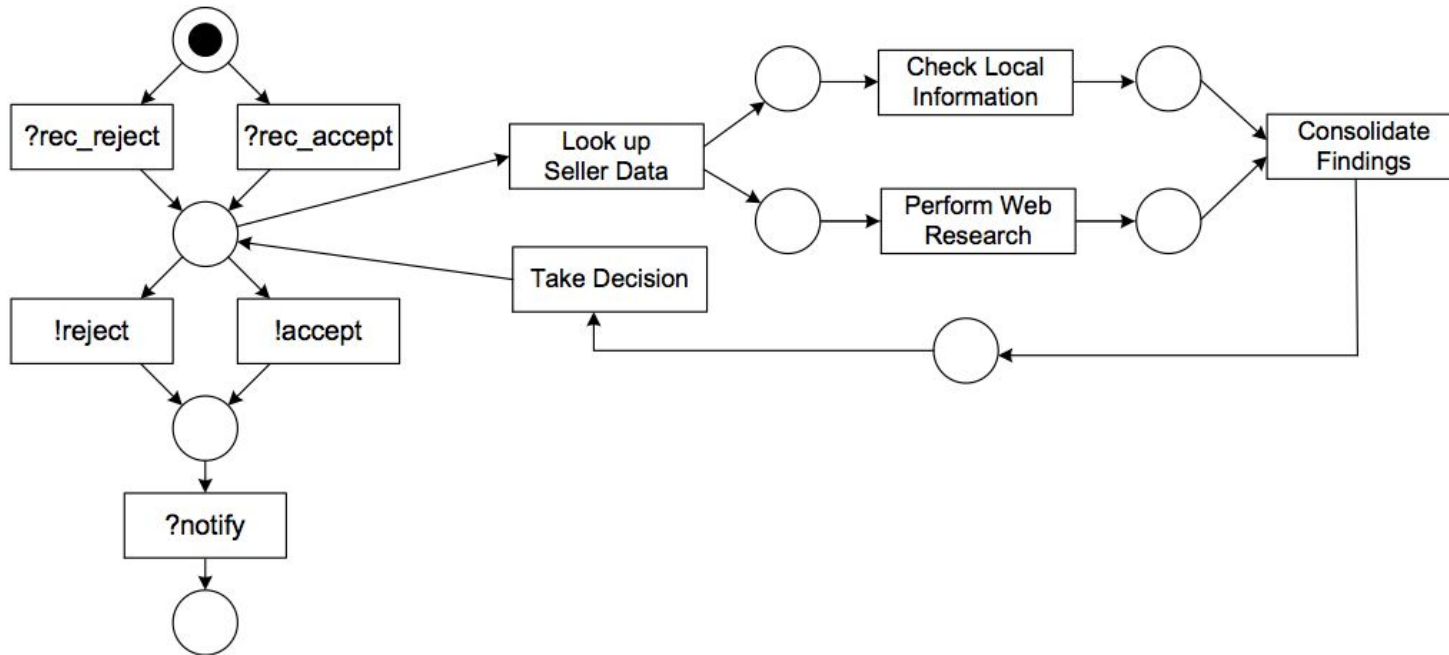
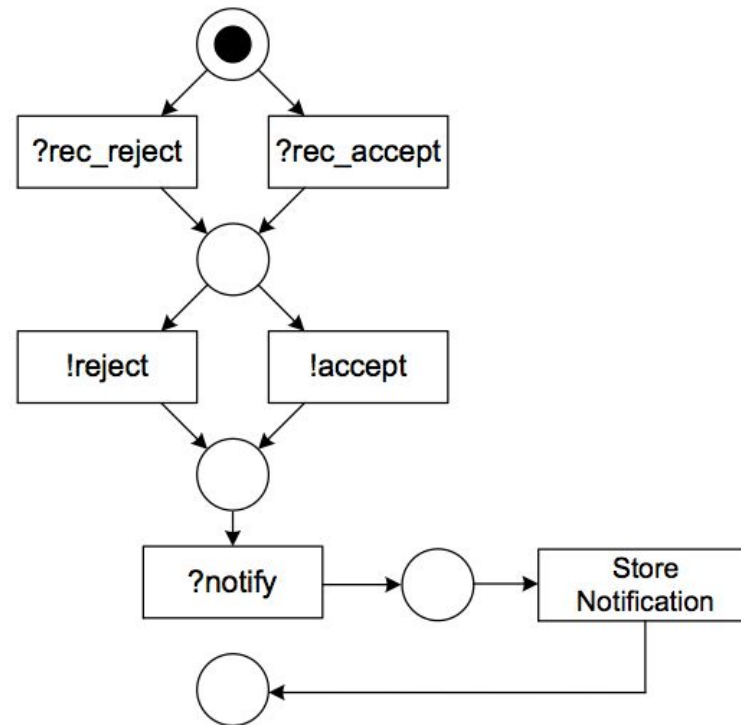


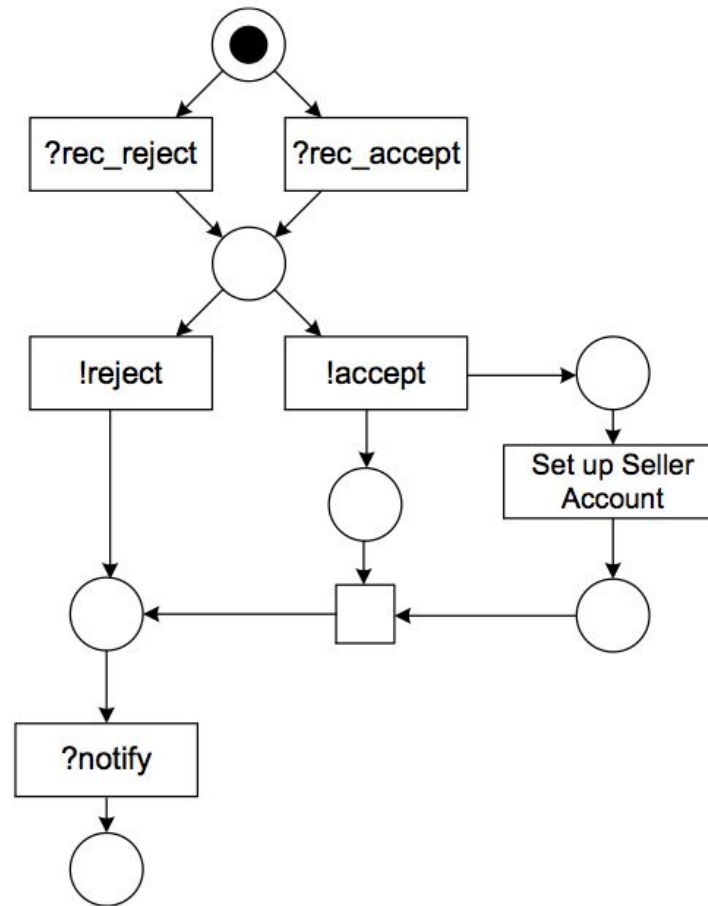
Fig. 5.18. Loop transformation operation of the public-to-private approach

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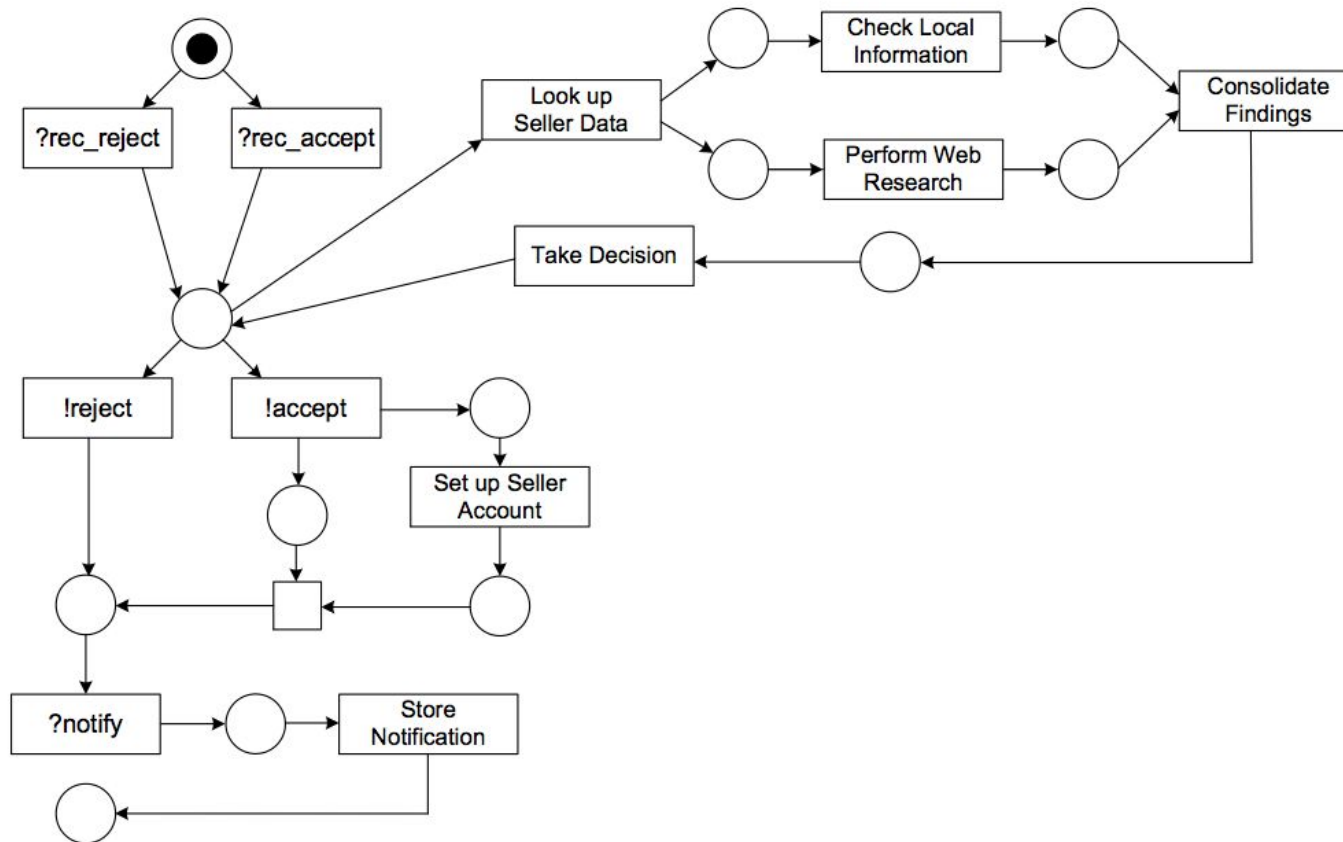
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Fig. 5.19. *Detour* transformation operation of the public-to-private approach



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Fig. 5.20. *Concur* transformation operation of the public-to-private approach



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Fig. 5.21. Private process that—according to the public-to-private approach—is consistent with the public process of the buyer

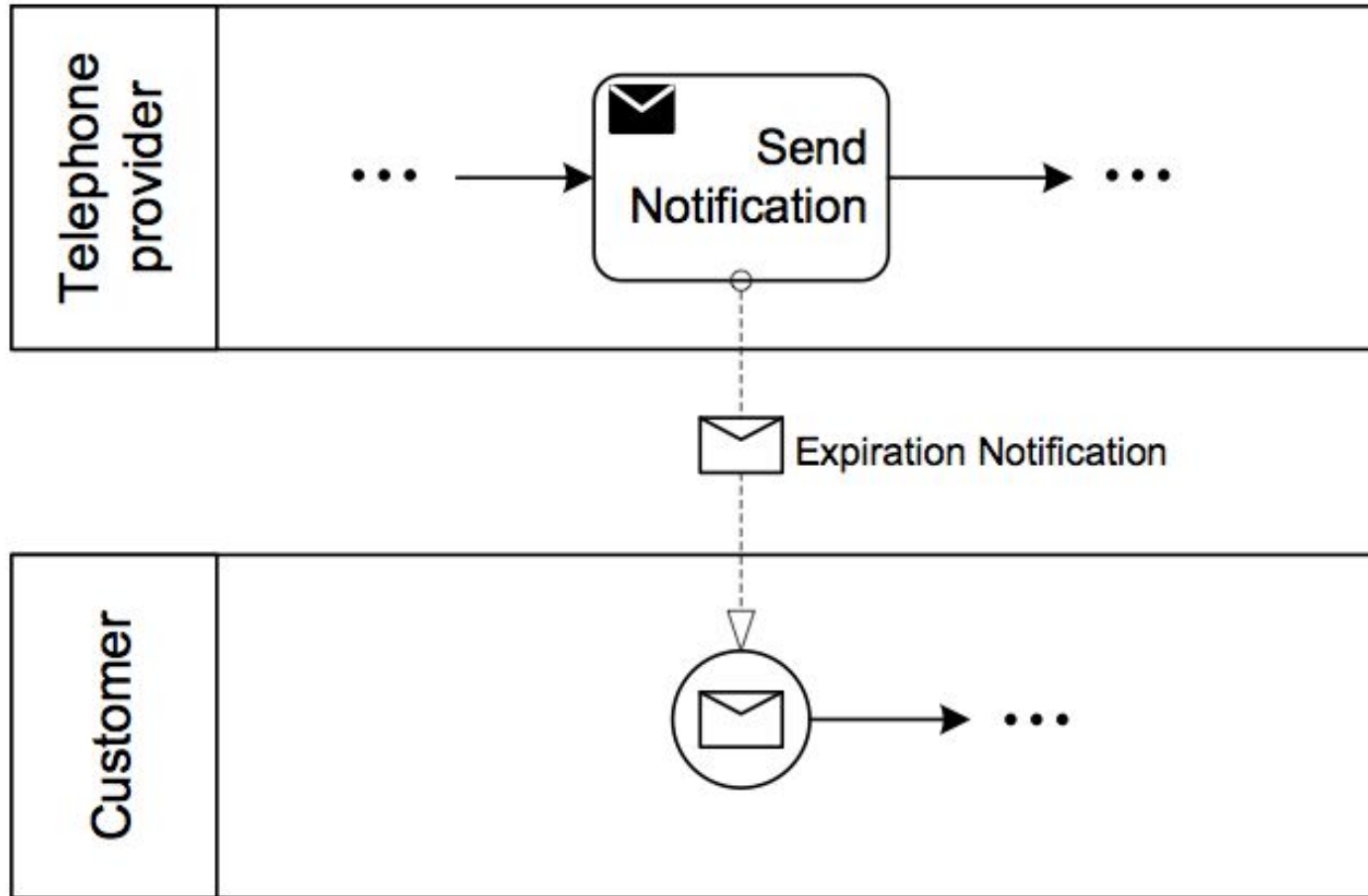


Fig. 5.22. Send pattern

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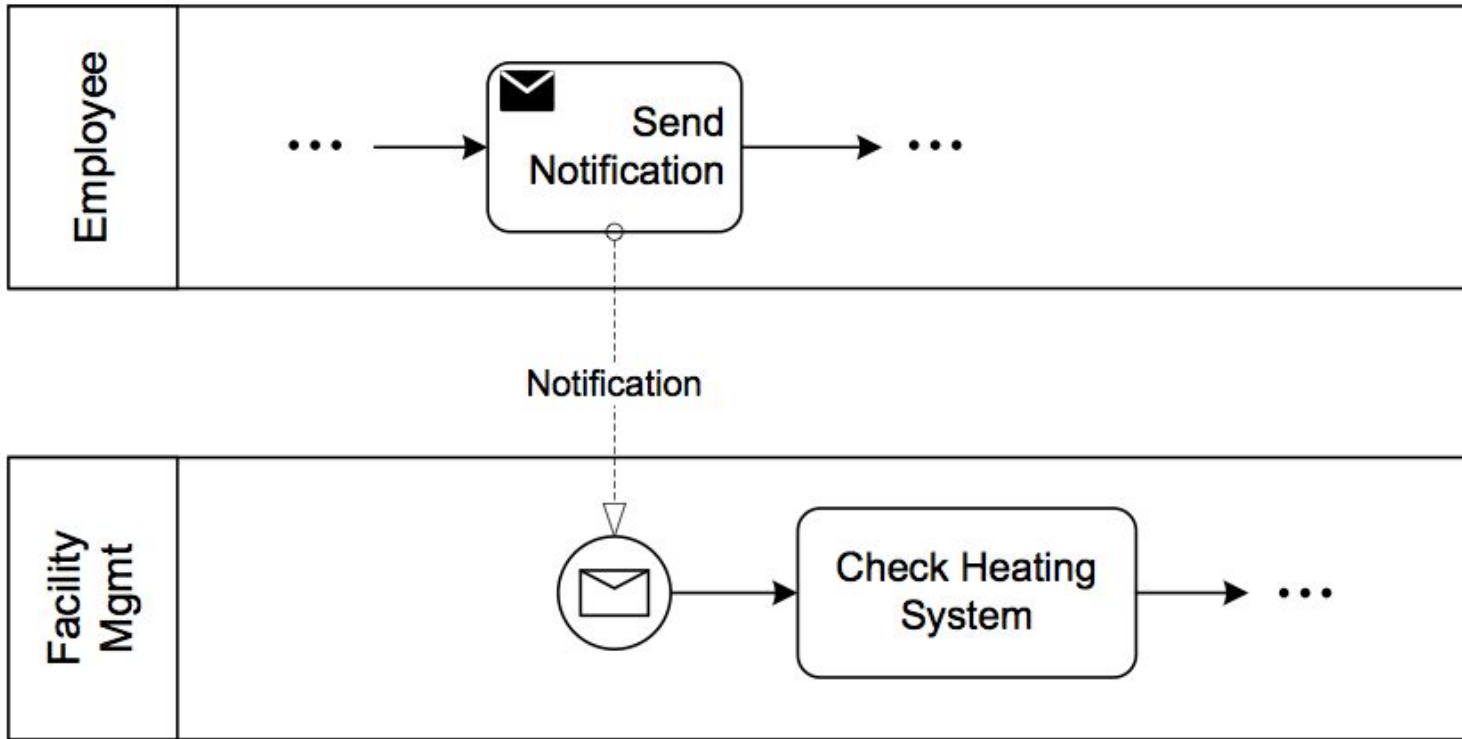


Fig. 5.23. Receive pattern

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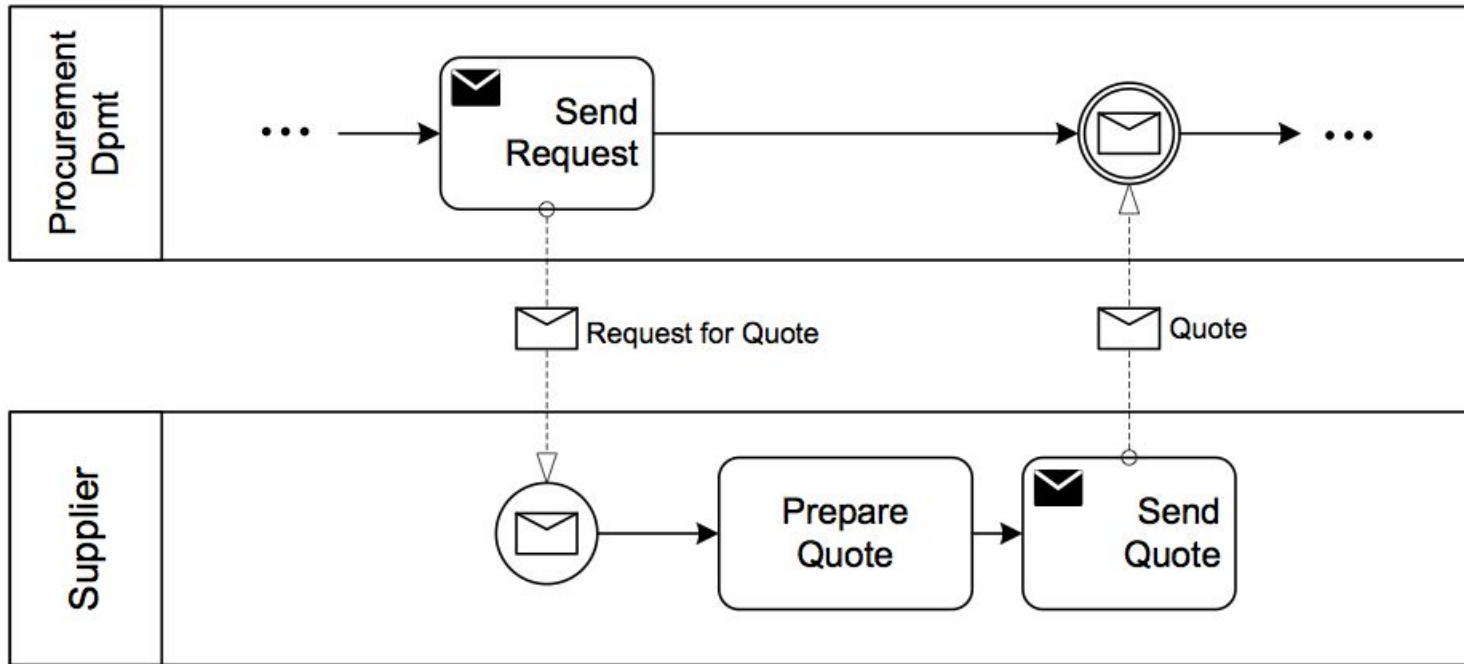
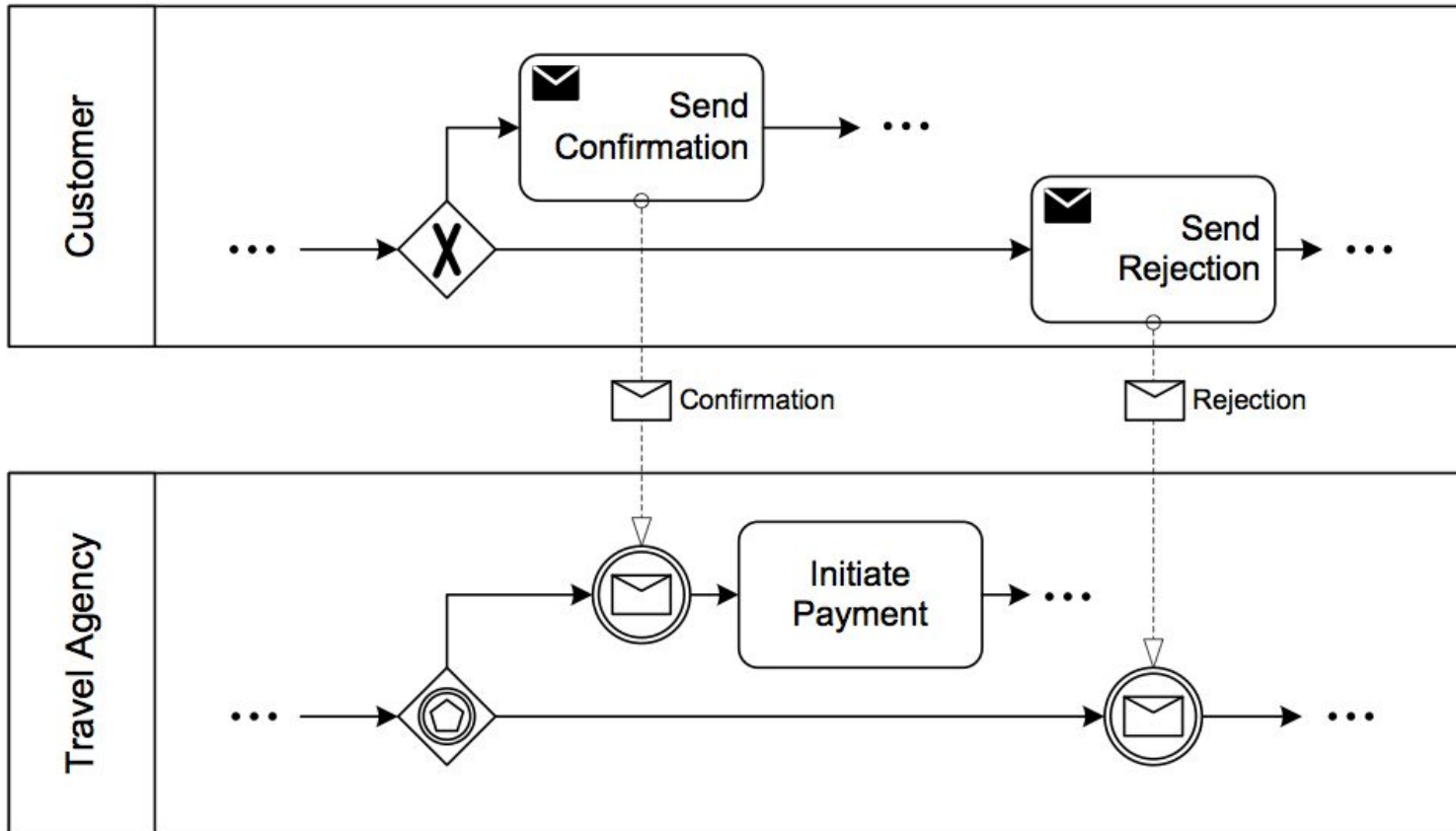


Fig. 5.24. Send/receive pattern

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Fig. 5.25. Racing incoming messages pattern

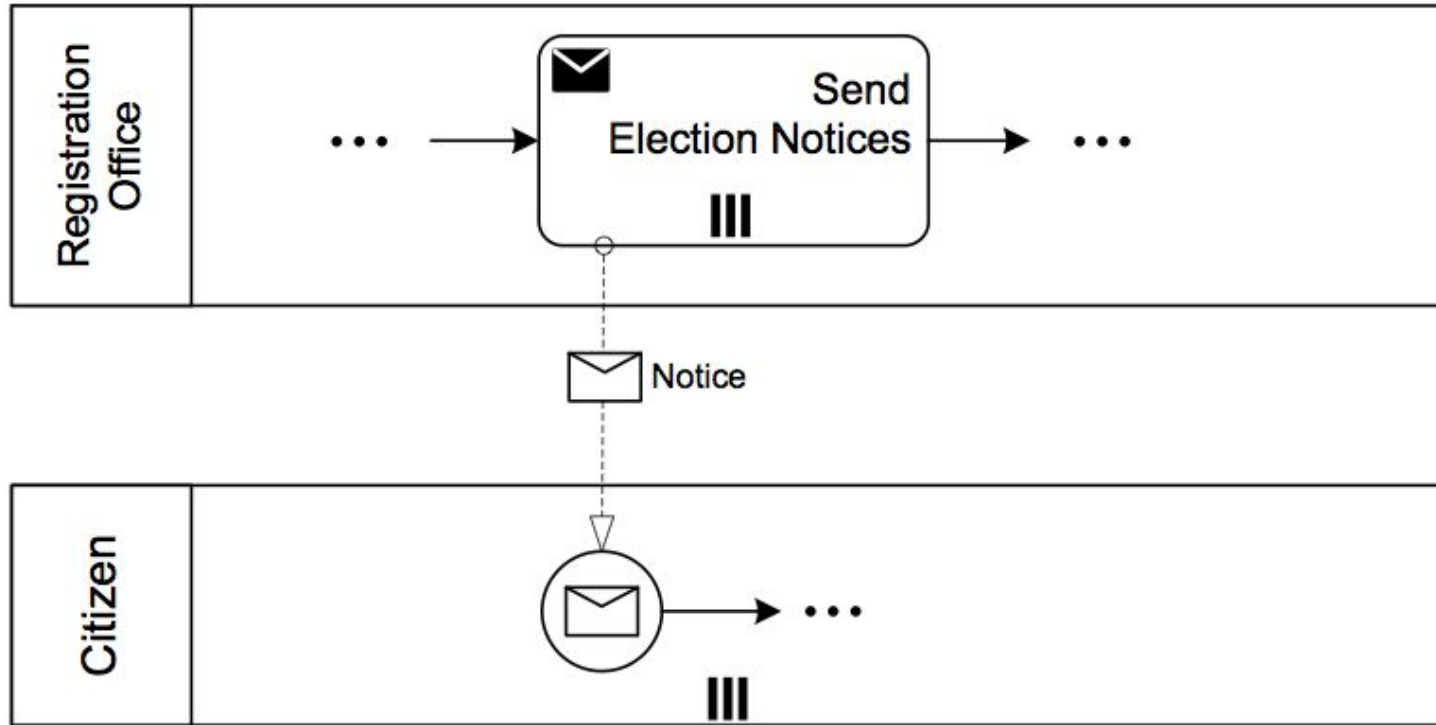
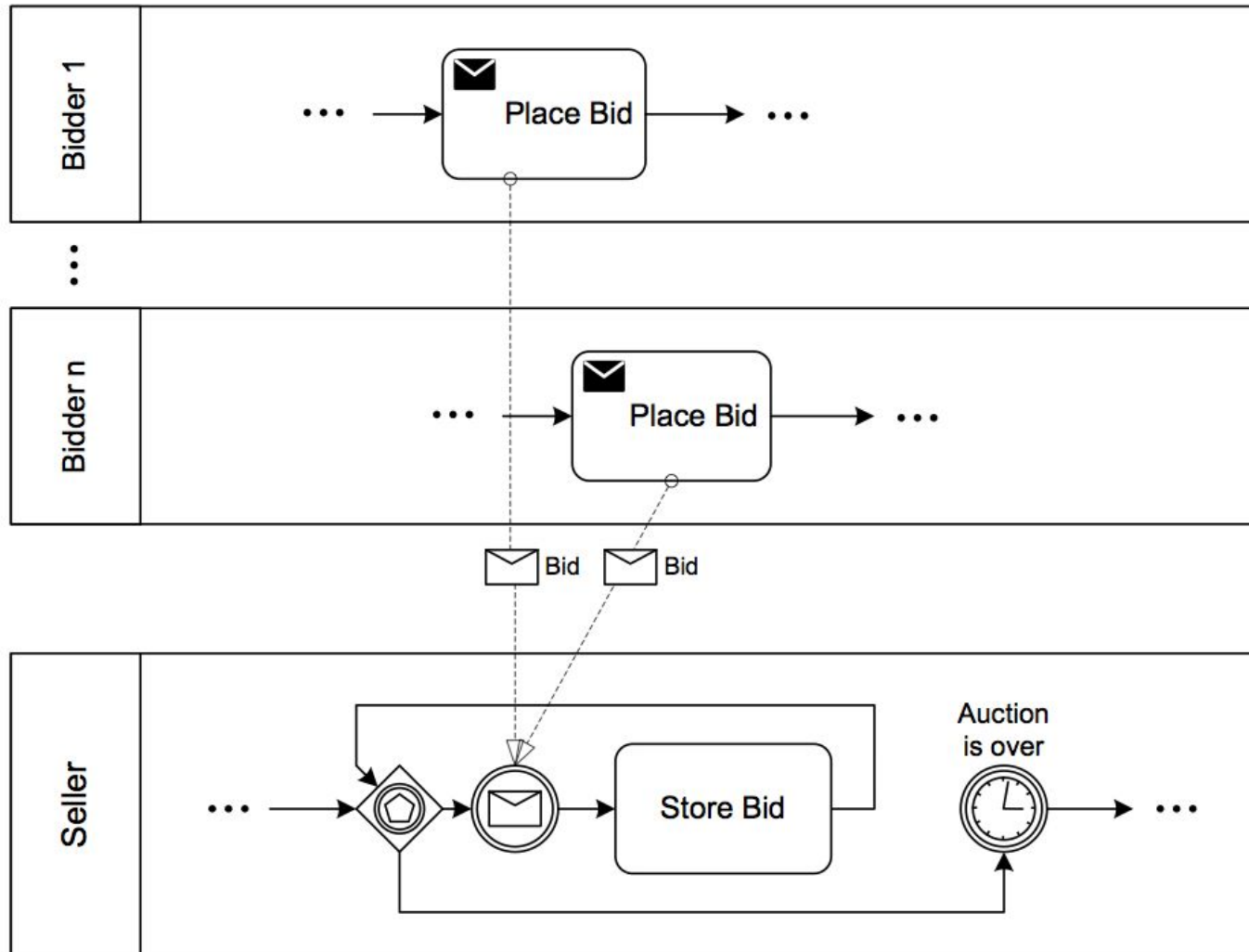


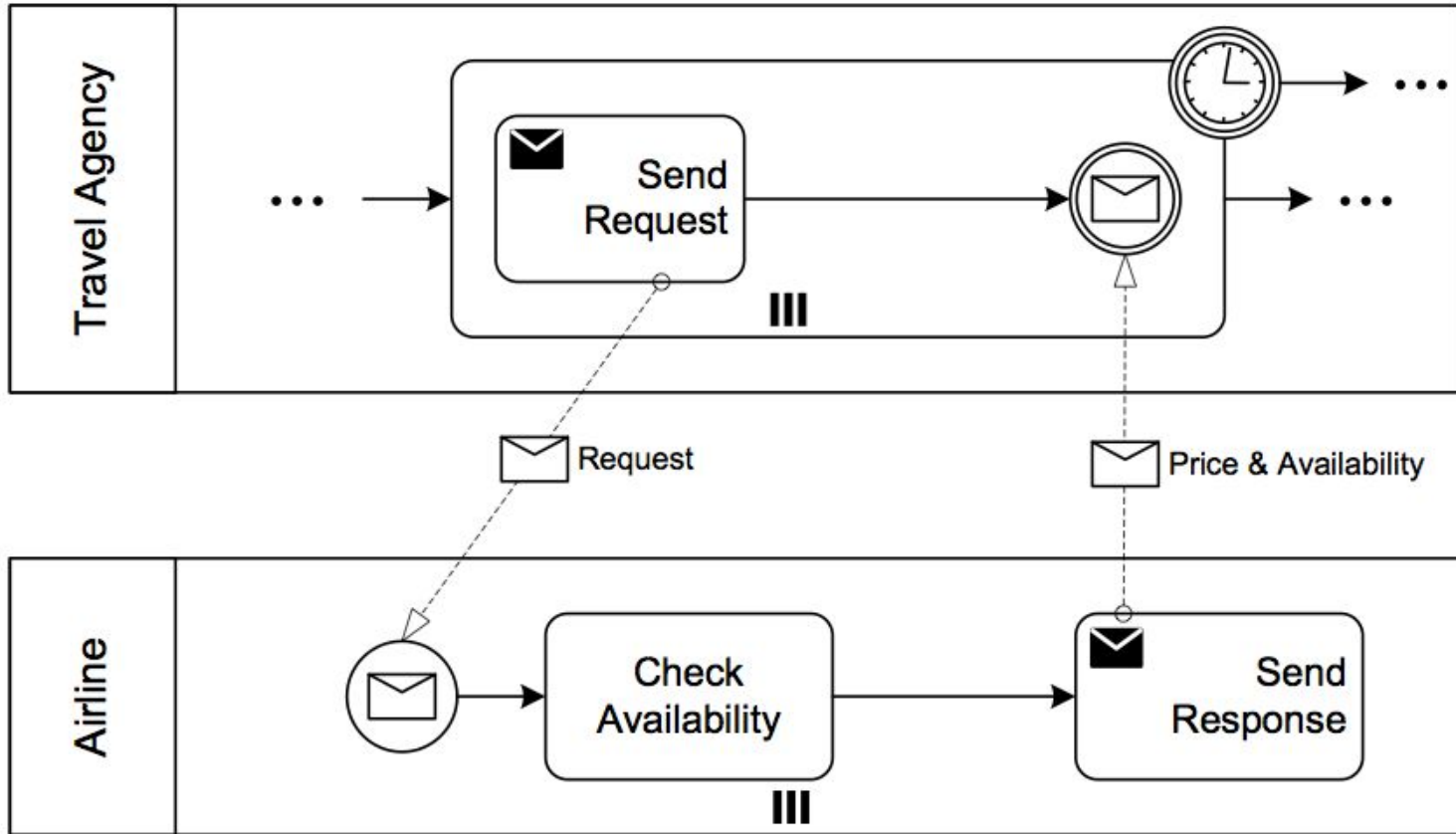
Fig. 5.26. One-to-many send pattern

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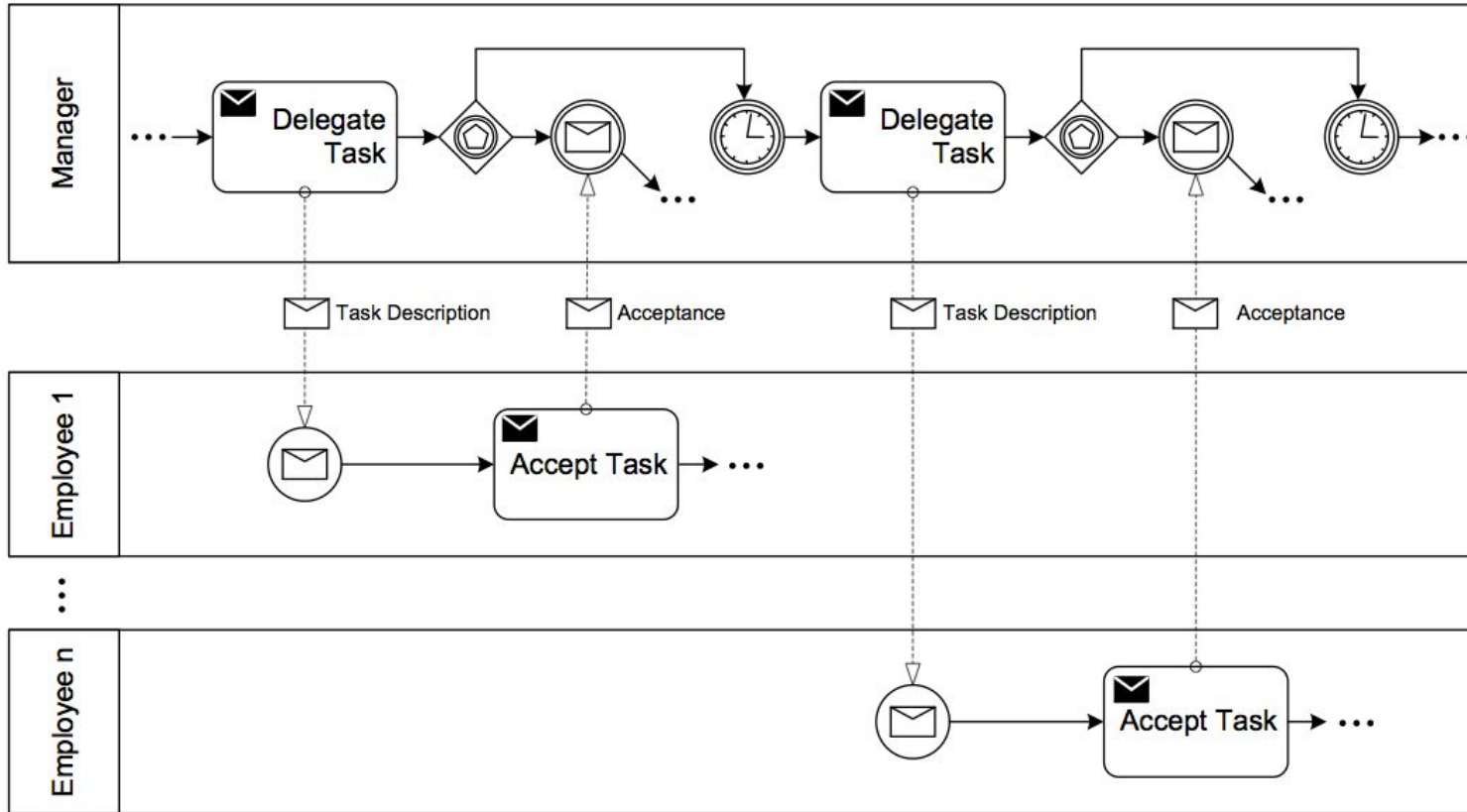
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Fig. 5.27. One-from-many receive pattern



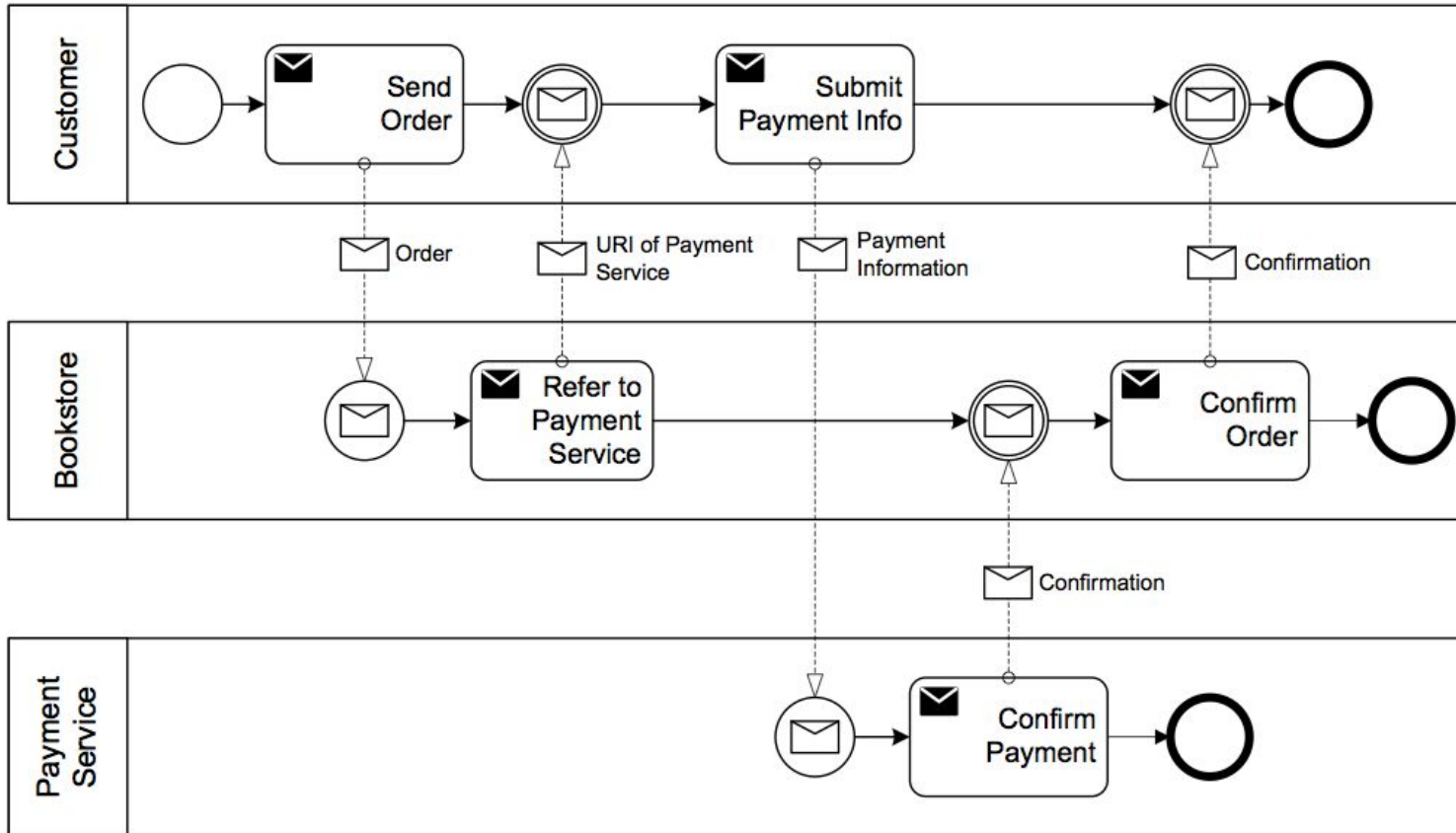
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Fig. 5.28. One-to-many send/receive pattern



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Fig. 5.29. Contingent requests pattern



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Fig. 5.30. Example involving request with referral pattern

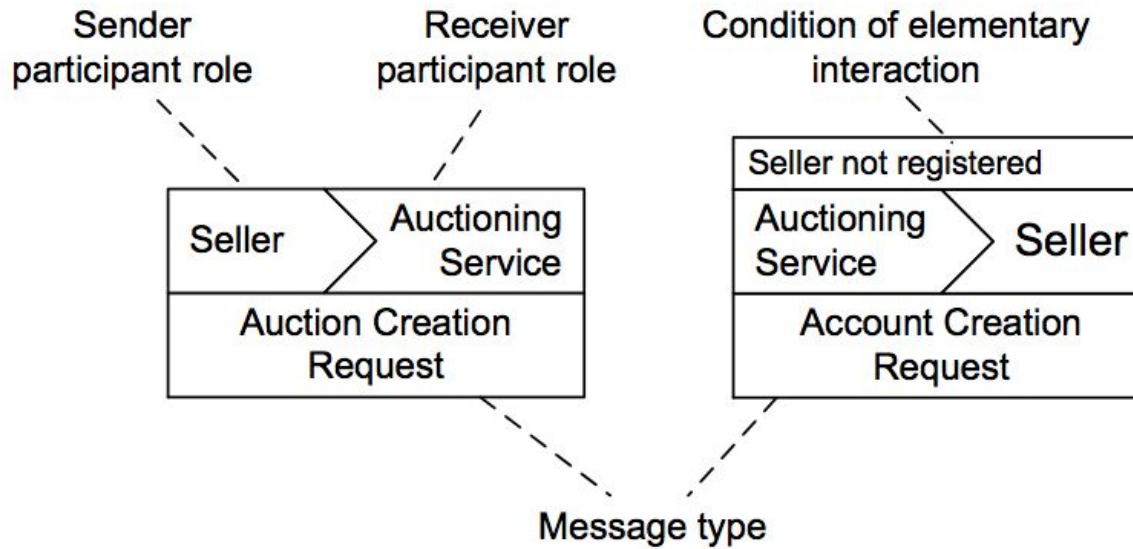
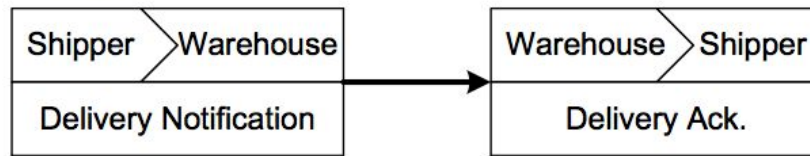
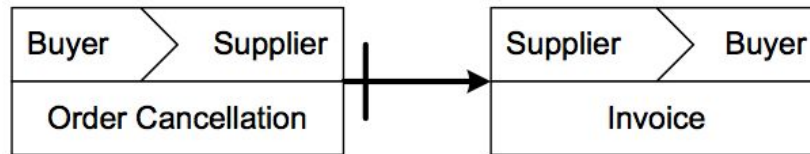


Fig. 5.31. Elementary interaction and conditional elementary interaction

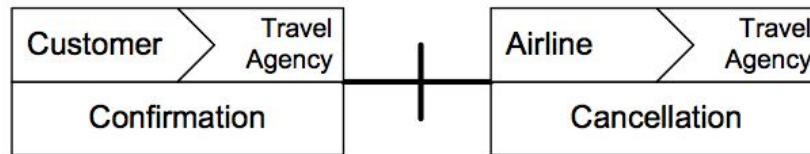
Precedes



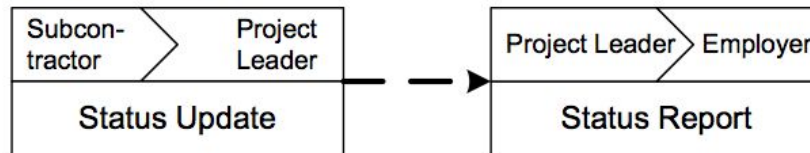
Inhibits



Vice-versa-Inhibits



WeakPrecedes



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Fig. 5.32. Basic control flow structures relating interactions

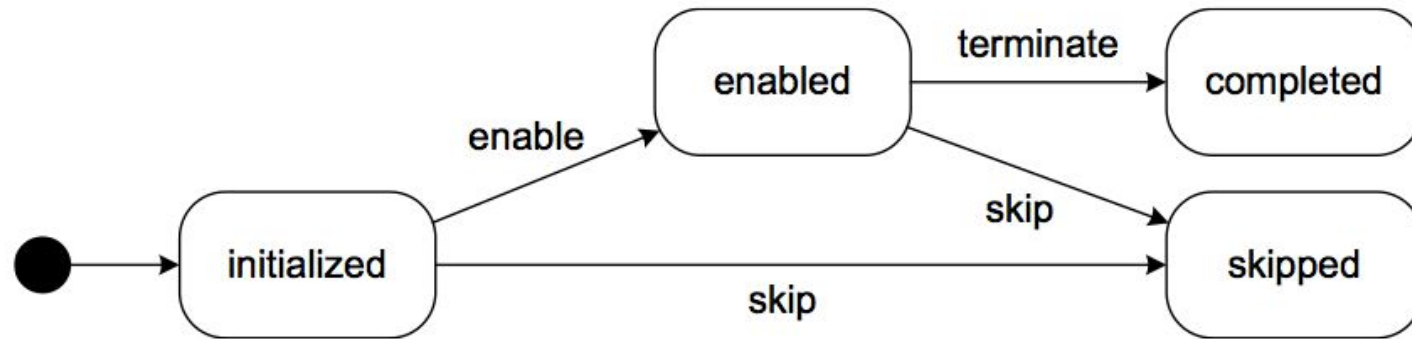


Fig. 5.33. Interaction instance lifecycle

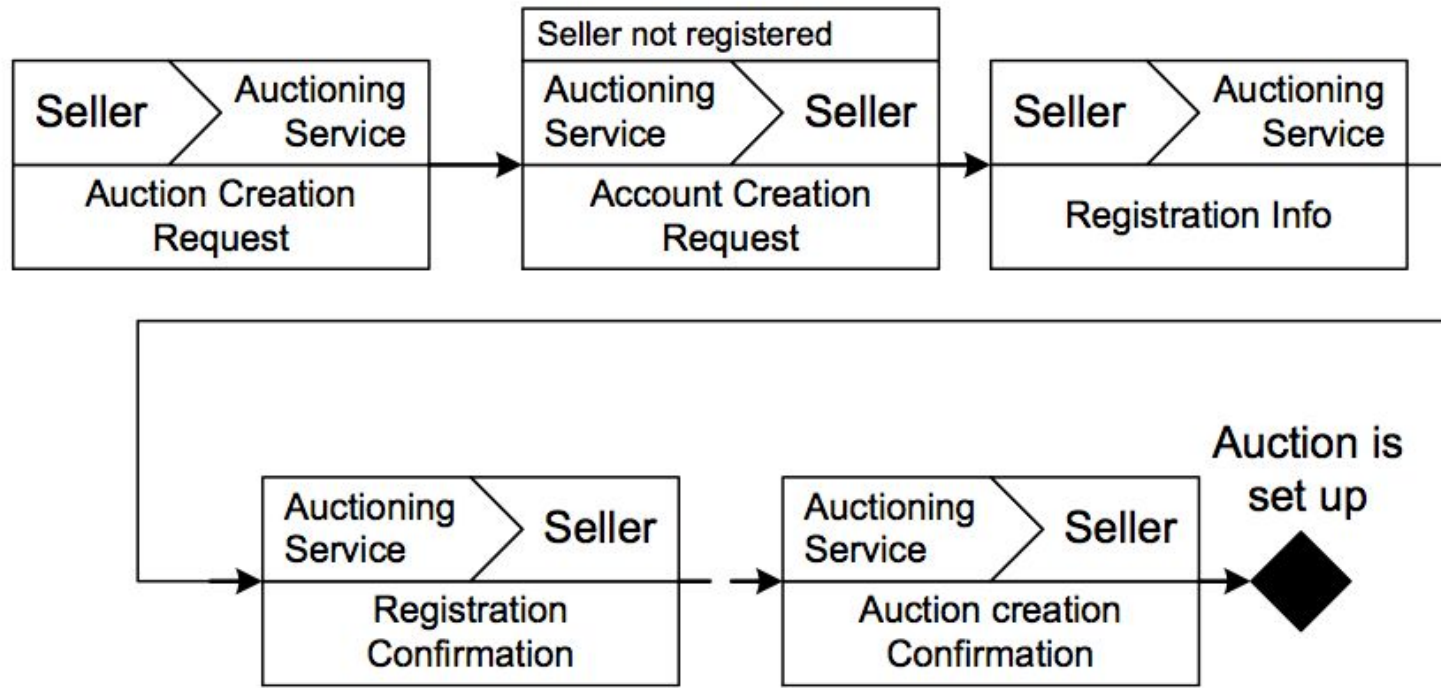
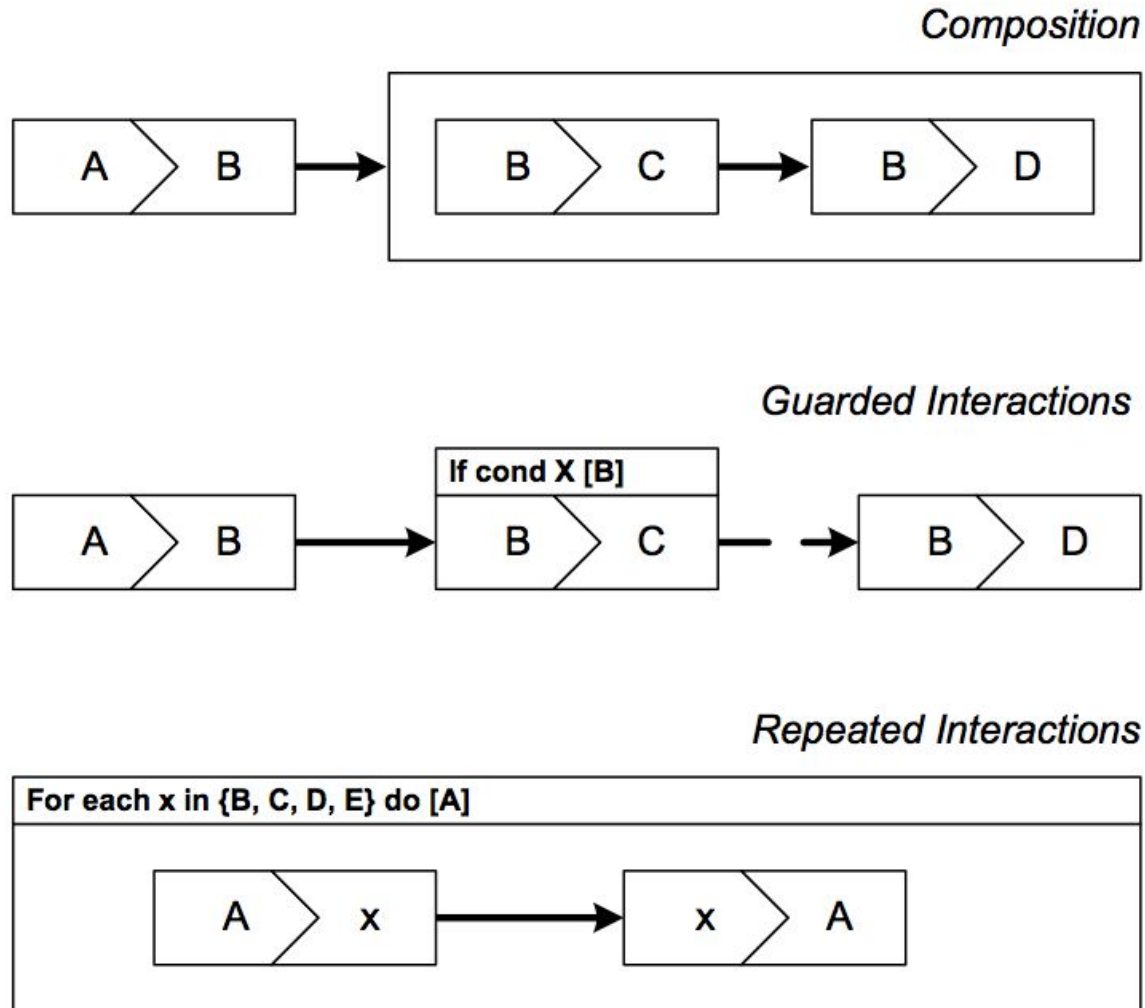


Fig. 5.34. Interaction modelling

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Fig. 5.35. Advanced control flow constructs

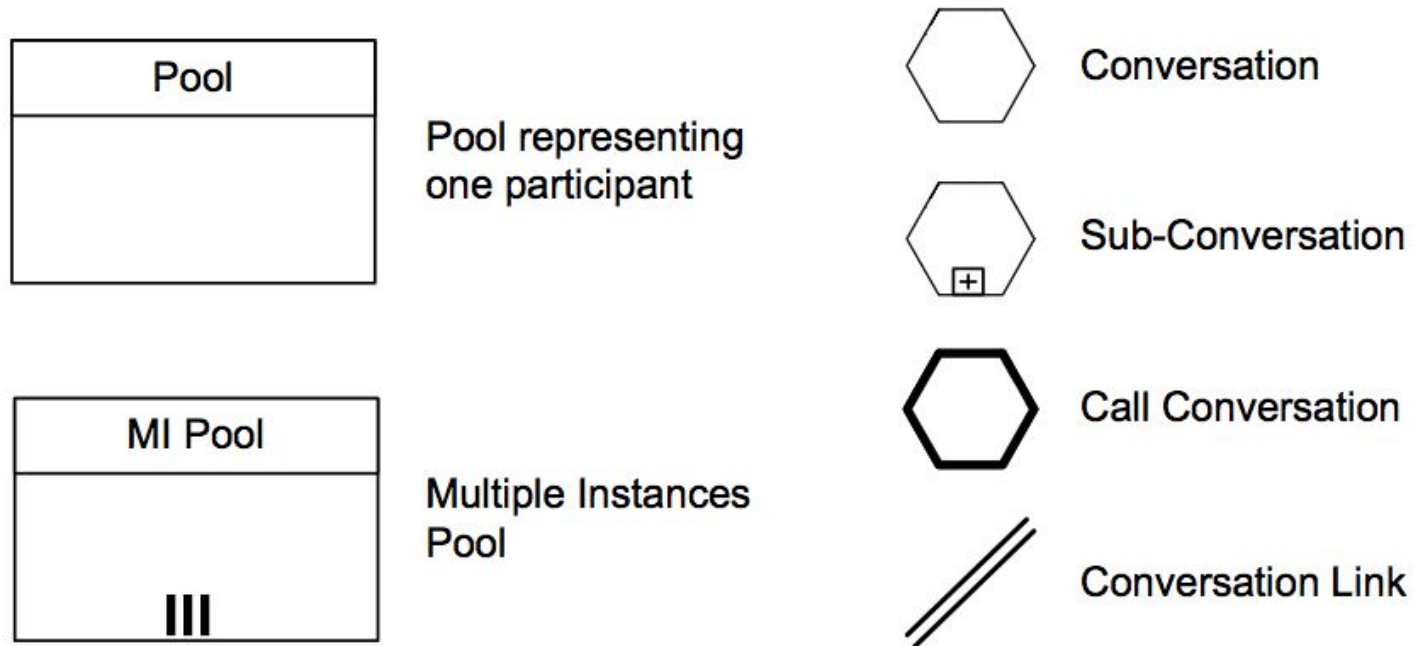


Fig. 5.36. Elements used in BPMN conversation diagrams

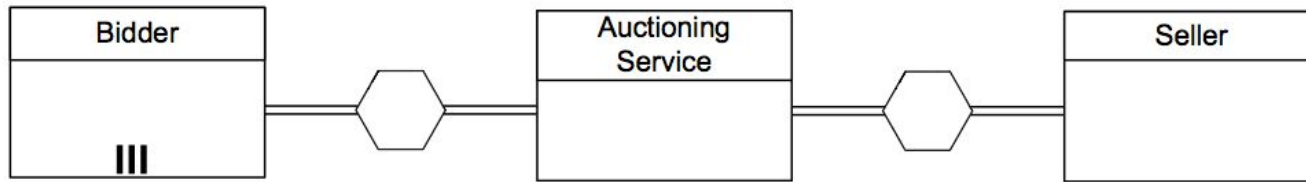
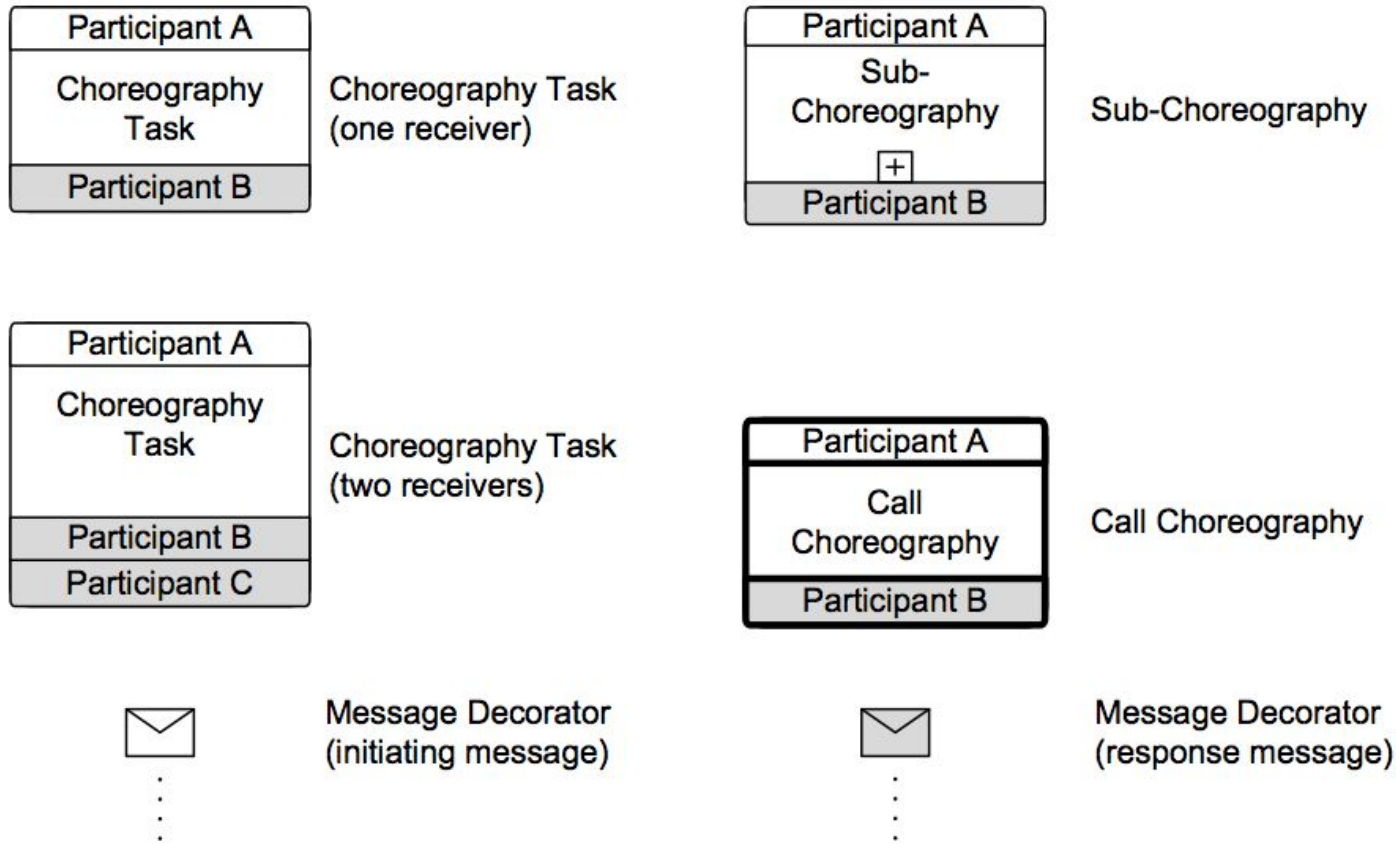
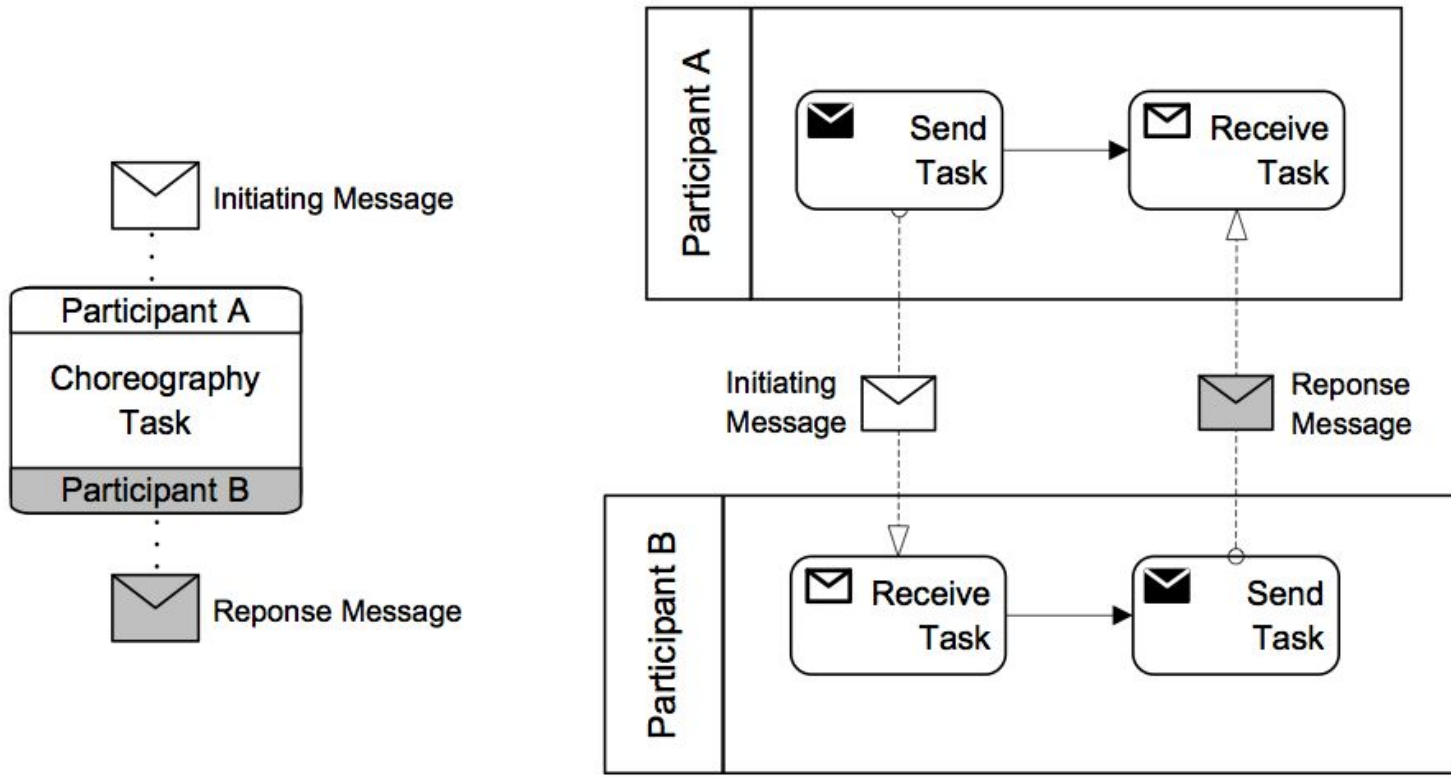


Fig. 5.37. Conversation diagram involving multiple bidders, an auctioning service, and a seller



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Fig. 5.38. Notational elements used in BPMN Choreography diagrams



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Fig. 5.39. Choreography task and corresponding process diagram

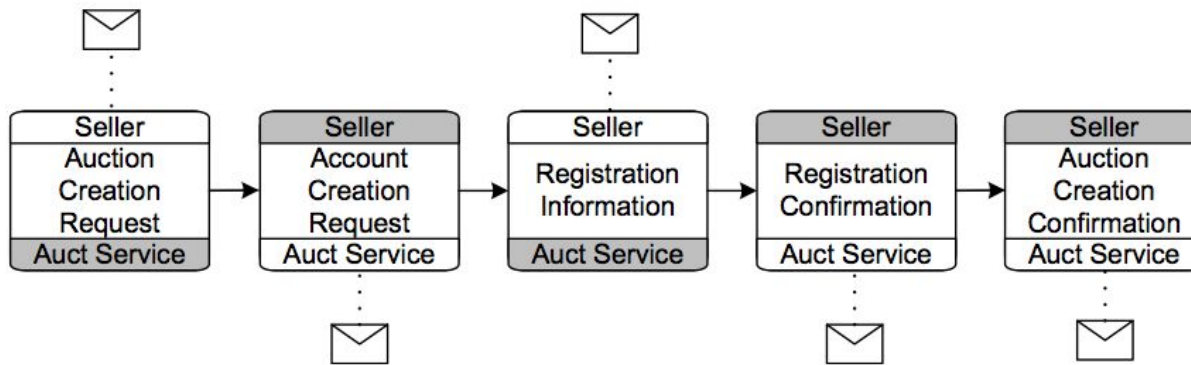
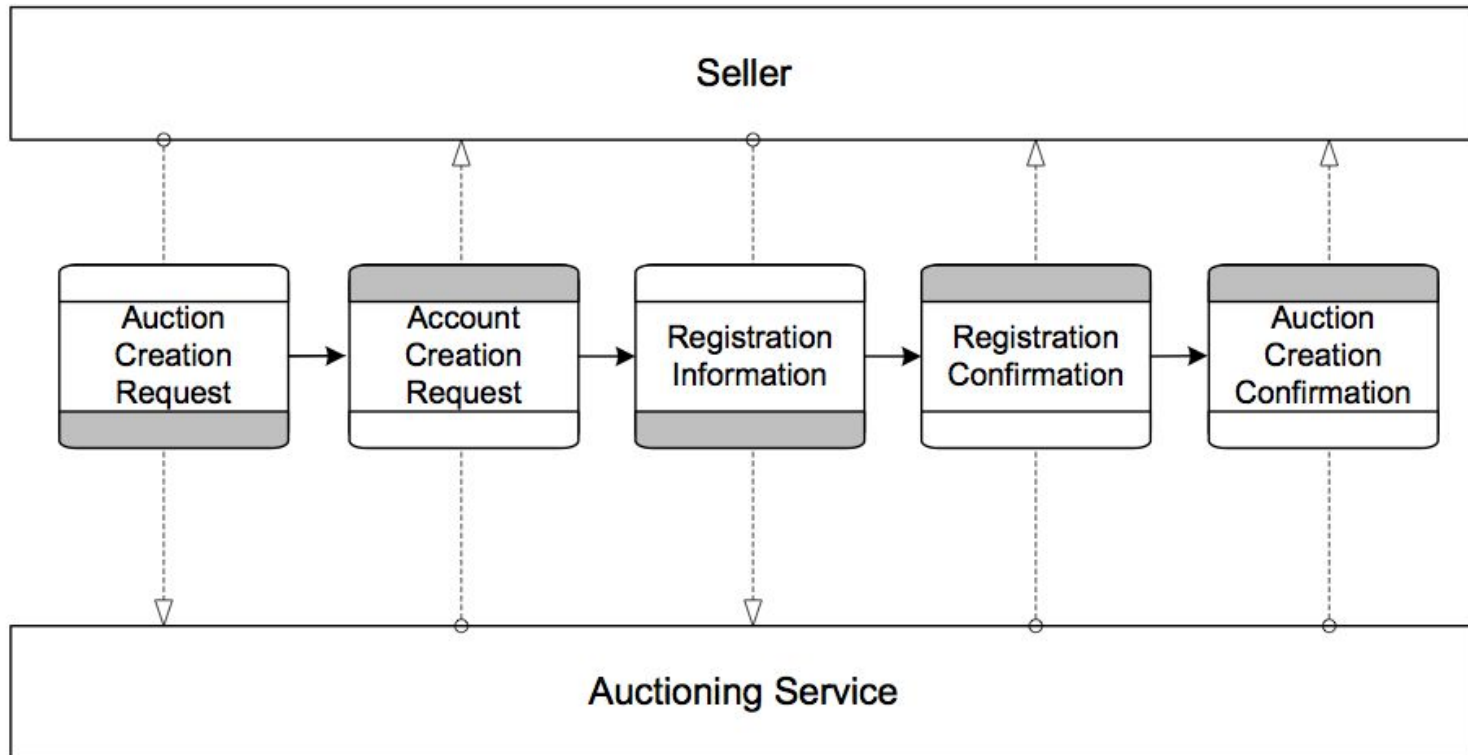


Fig. 5.40. Collaboration scenario, described by BPMN Choreography Diagrams



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Fig. 5.41. Choreography diagram with pools

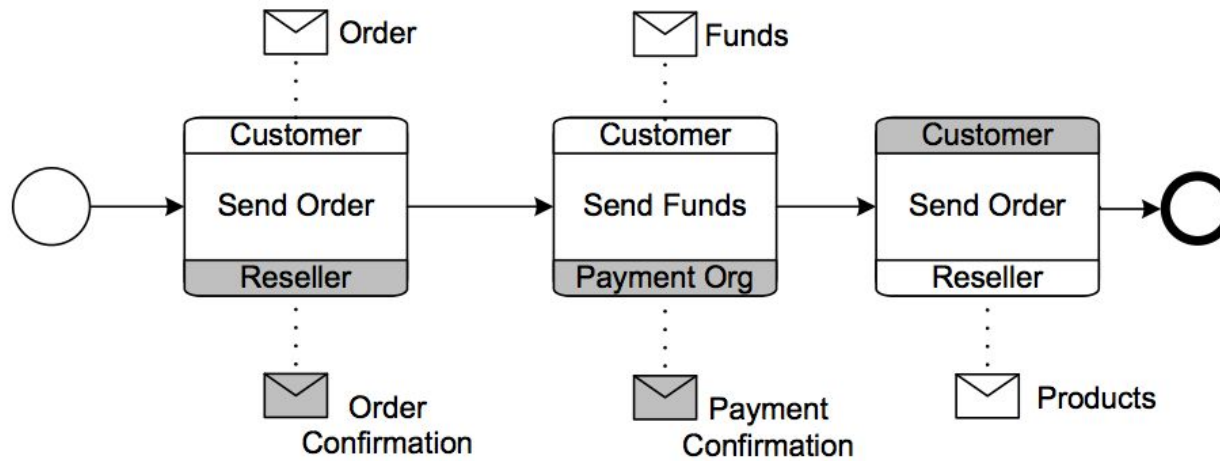


Fig. 5.42. Choreography diagram that is not enforceable, since the reseller cannot know if the customer has already send the funds

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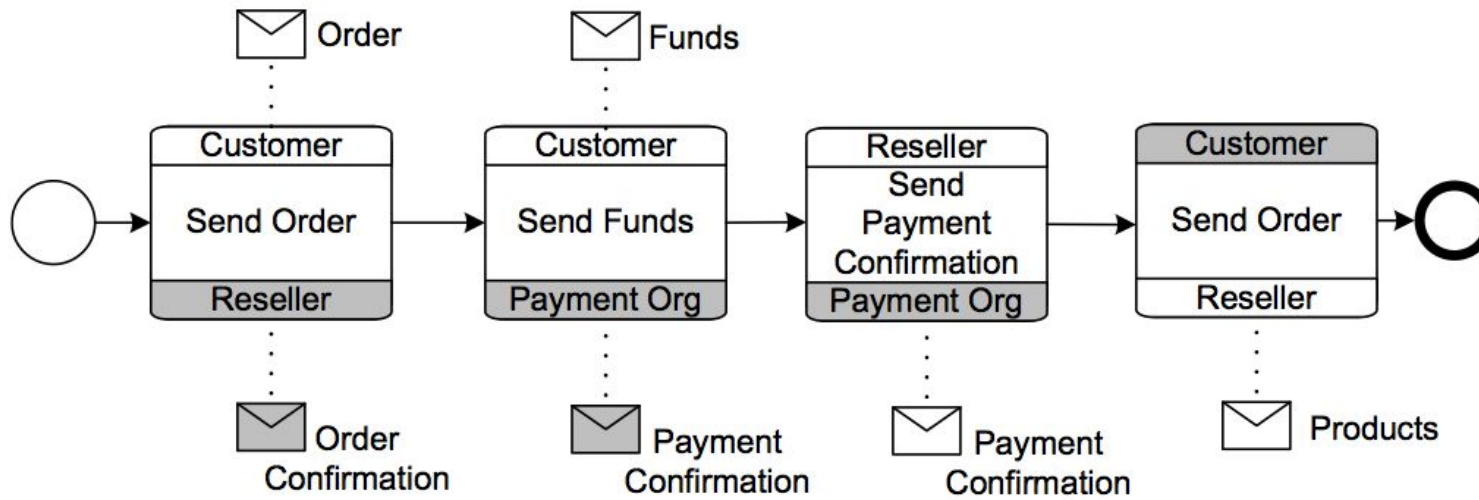


Fig. 5.43. Choreography diagram that is enforceable

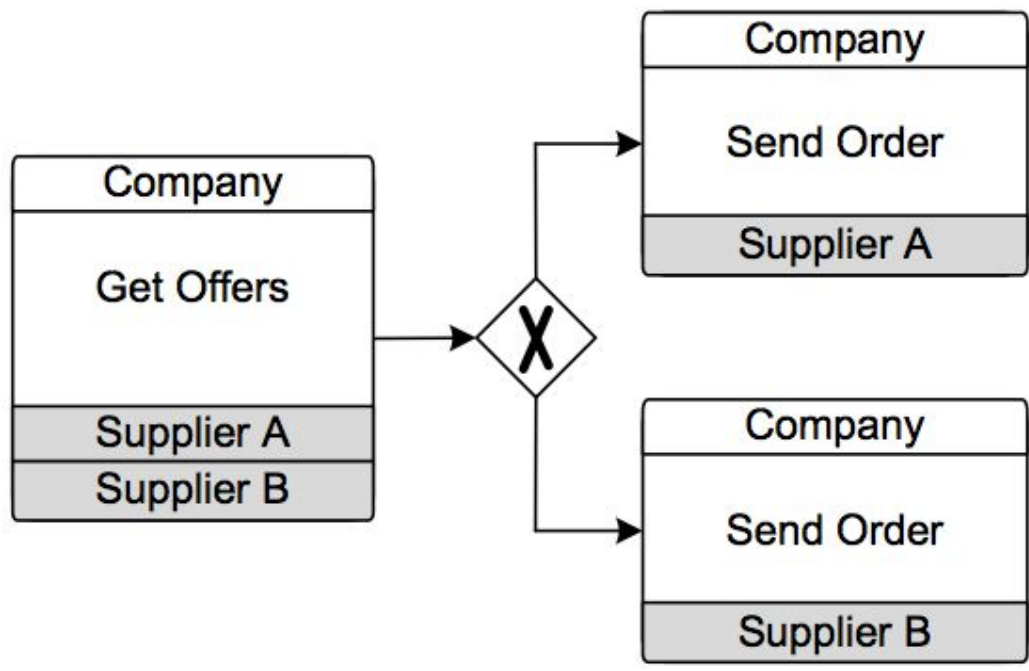


Fig. 5.44. Choreography diagram with exclusive gateway

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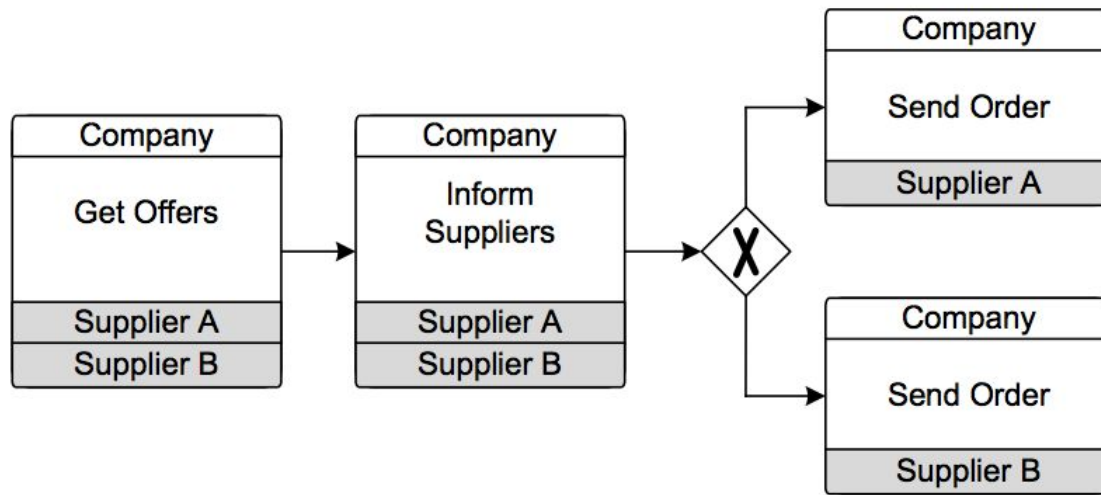
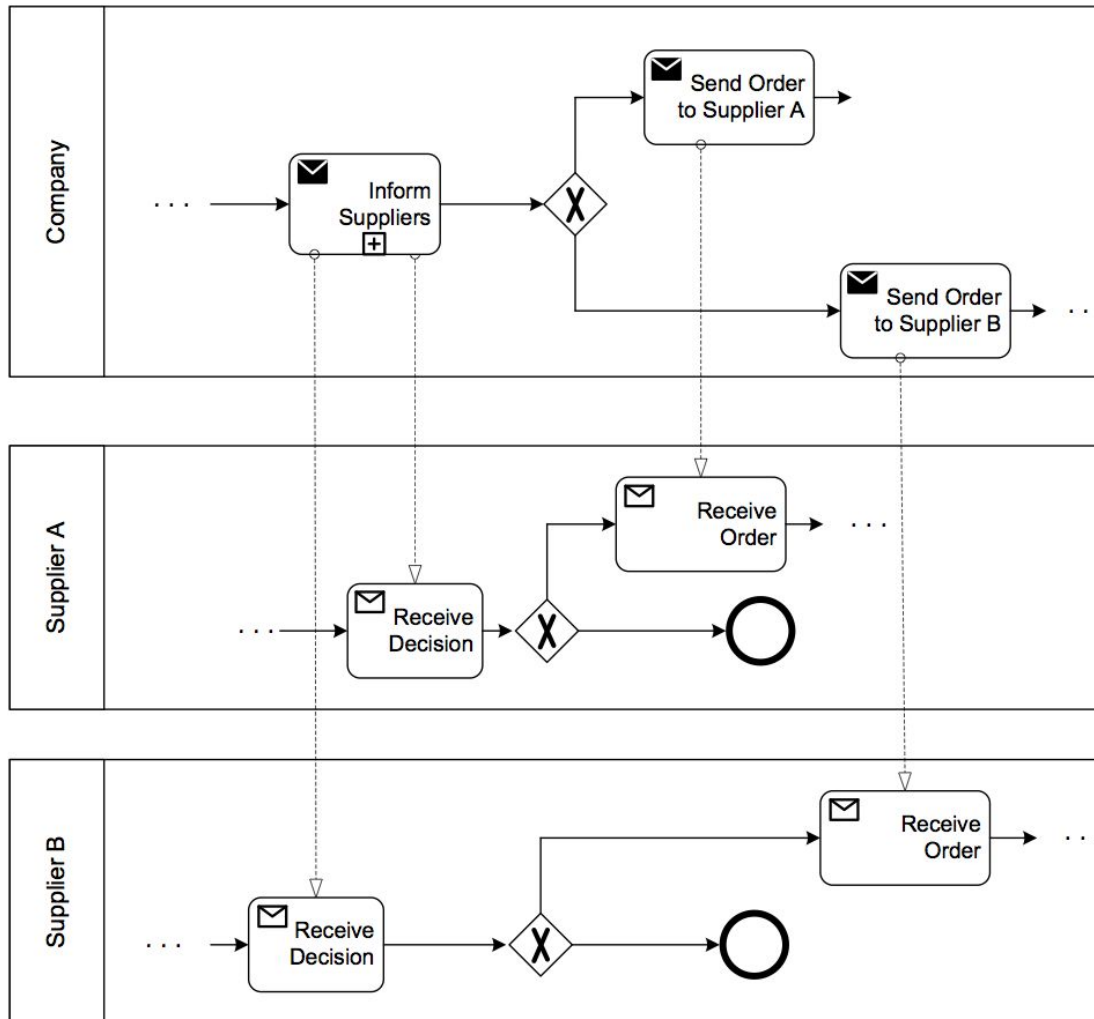


Fig. 5.45. Additional choreography task *Inform Suppliers* makes sure that receivers are informed about the decision taken by the exclusive gateway



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Fig. 5.46. Collaboration diagram with process orchestrations, implementing the choreography defined in Figure 5.45

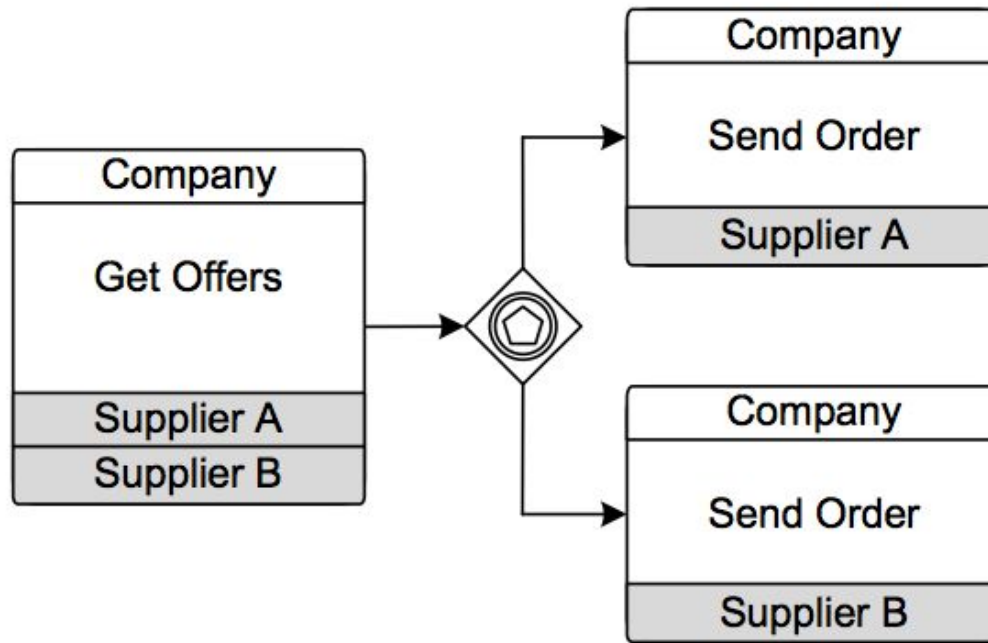
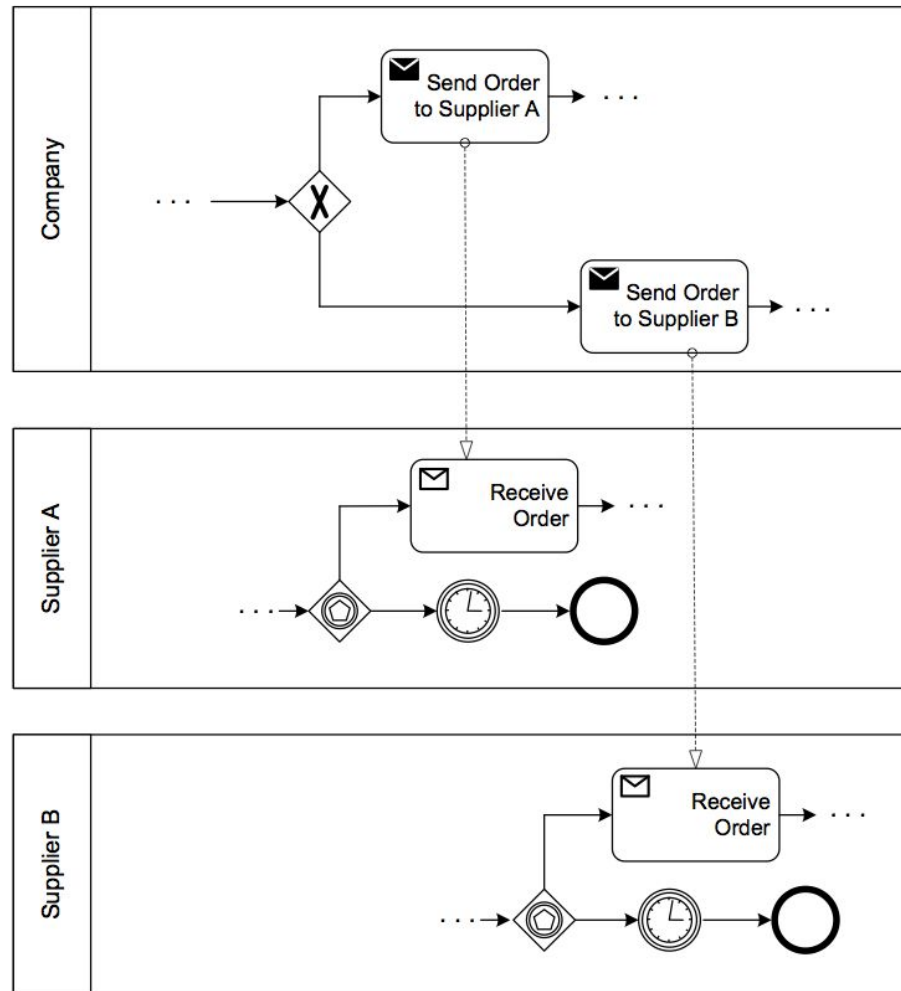


Fig. 5.47. Choreography diagram with event-based gateway

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Fig. 5.48. Collaboration diagram with process orchestrations, implementing the choreography defined in Figure 5.47

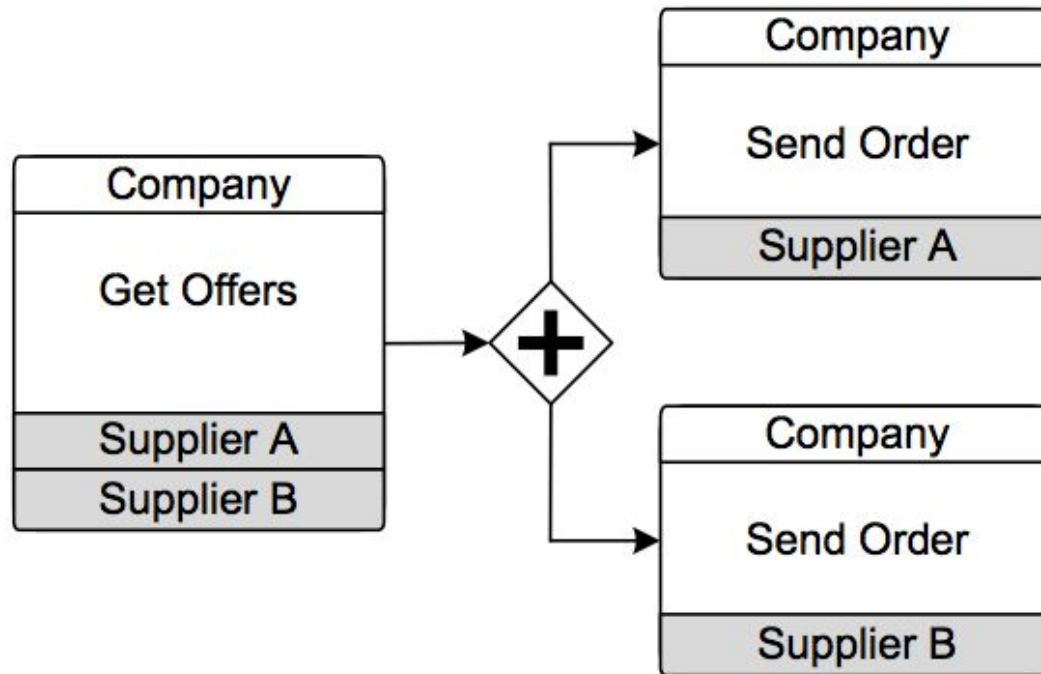
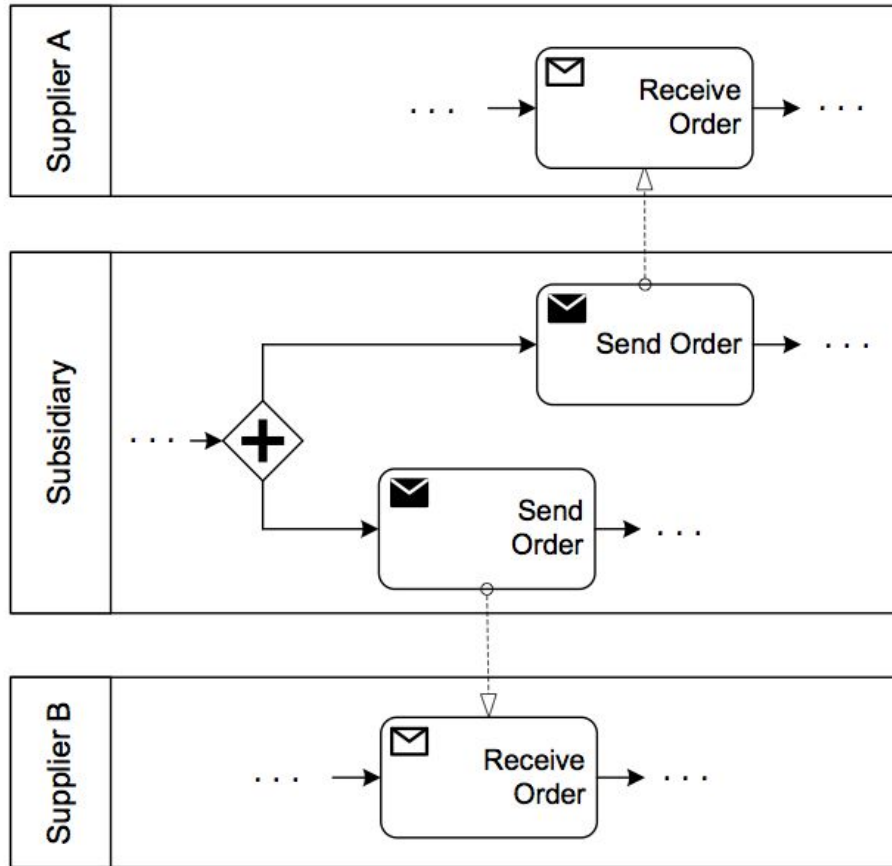


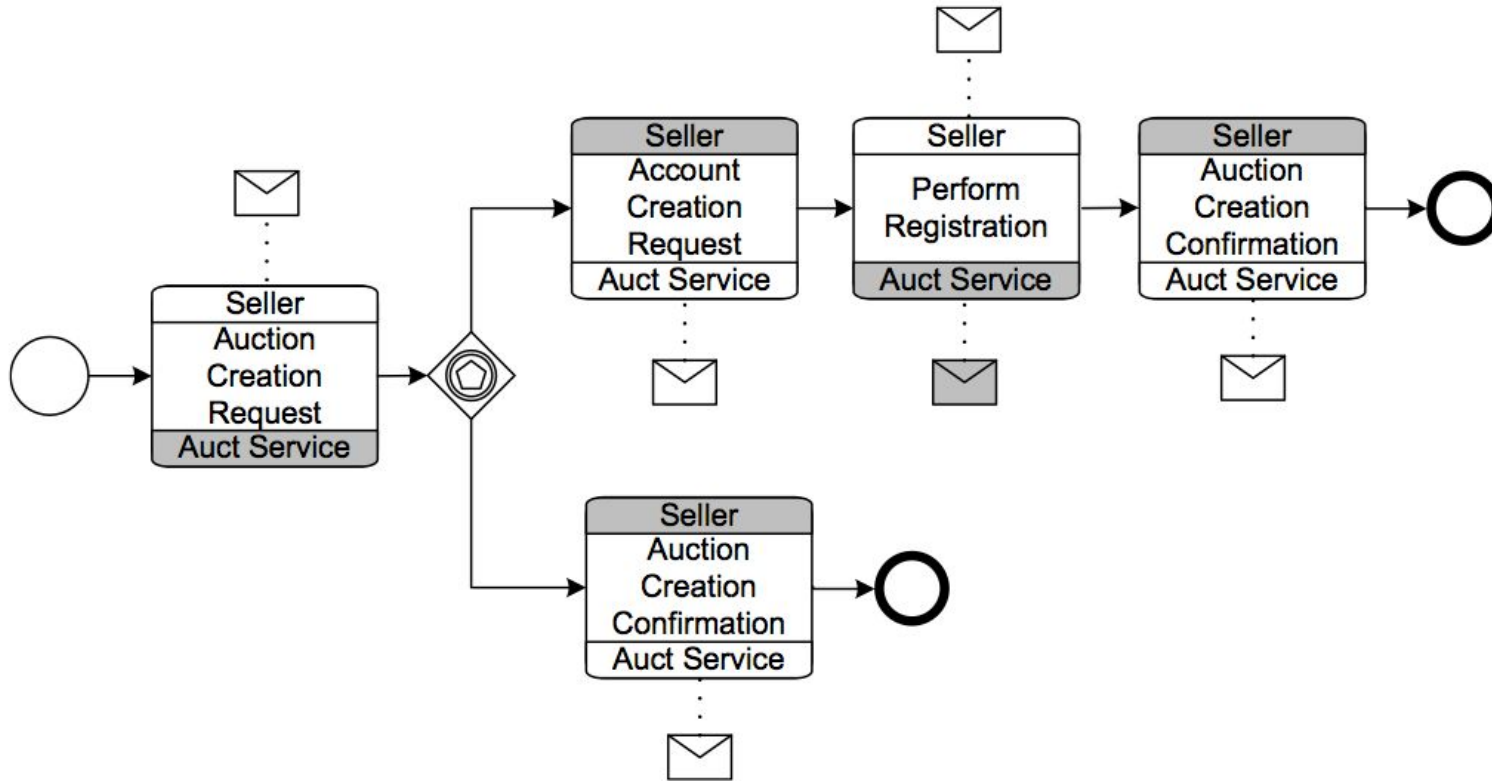
Fig. 5.49. Choreography diagram using parallel gateway

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Fig. 5.50. Process diagram realizing parallel gateway of process choreography



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Fig. 5.51. Choreography diagram representing auctioning scenario