# UML Diagrams for Chapter 8 of Analysis Patterns

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## Foreword

The figures 8.3, 8.4, 8.8 and 8.10 make usage of UML discriminators to represent the multiple classifications, originally expressed in the models using the Odell's notation. All the instances of a class in a generalization relationship represent children bearing a specific quality. According to the UML reference manual, a parent with multiple discriminators has multiple dimensions, all of which must me specialized to produce a concrete element.

The 'enforcement' discriminator shown in the figures 8.3 and 8.3 denotes partitions of actions according to their abandonment or entrustment. The Abandoned Action class represents the actions that are either abandoned before or after the beginning of their implementation. Under that discriminator, one could add the Entrusted Action class grouping the actions that are not abandoned. There is no 'completion' discriminator. Since only implemented actions can be completed, no additional dimension of specialization is required.

The 'structure' discriminator shown in the figures 8.8 and 8.10 establishes partitions of actions according to an action aggregation criterion. The Plan class denotes composite actions. Under the 'structure' discriminator, another subclass could be the Simple Action class.
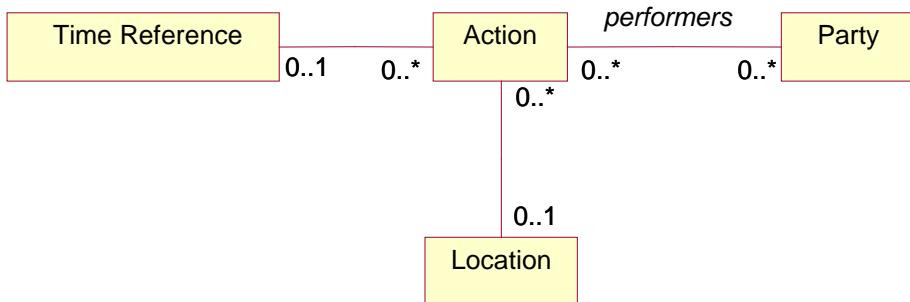
## The UML Diagrams
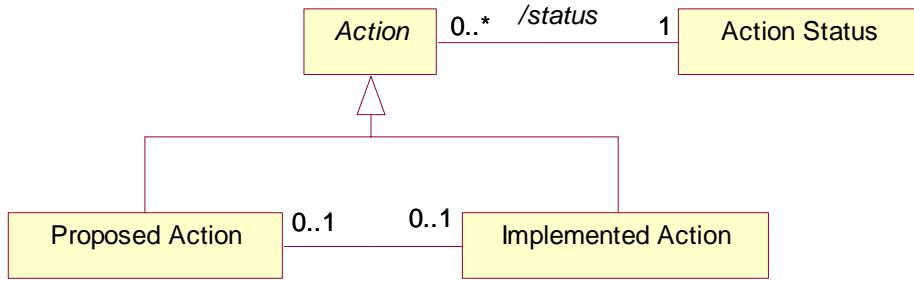


Figure 8.1 Properties of actions.

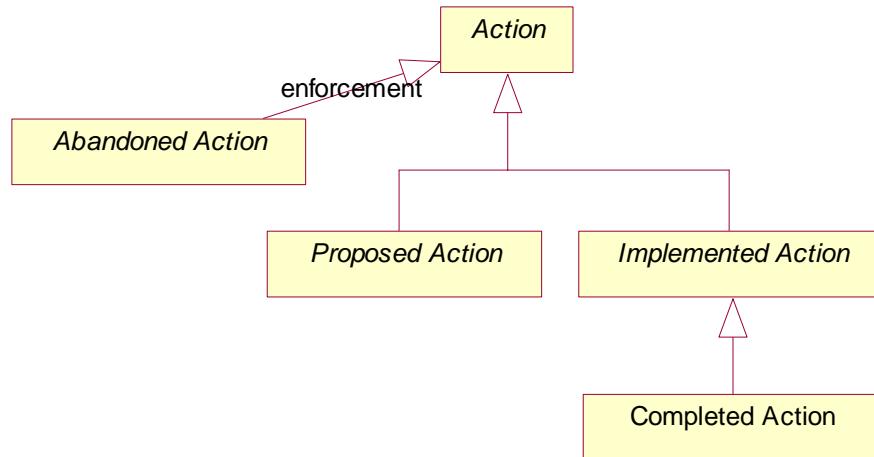Figure 8.2 Basic structure of plans and actions.
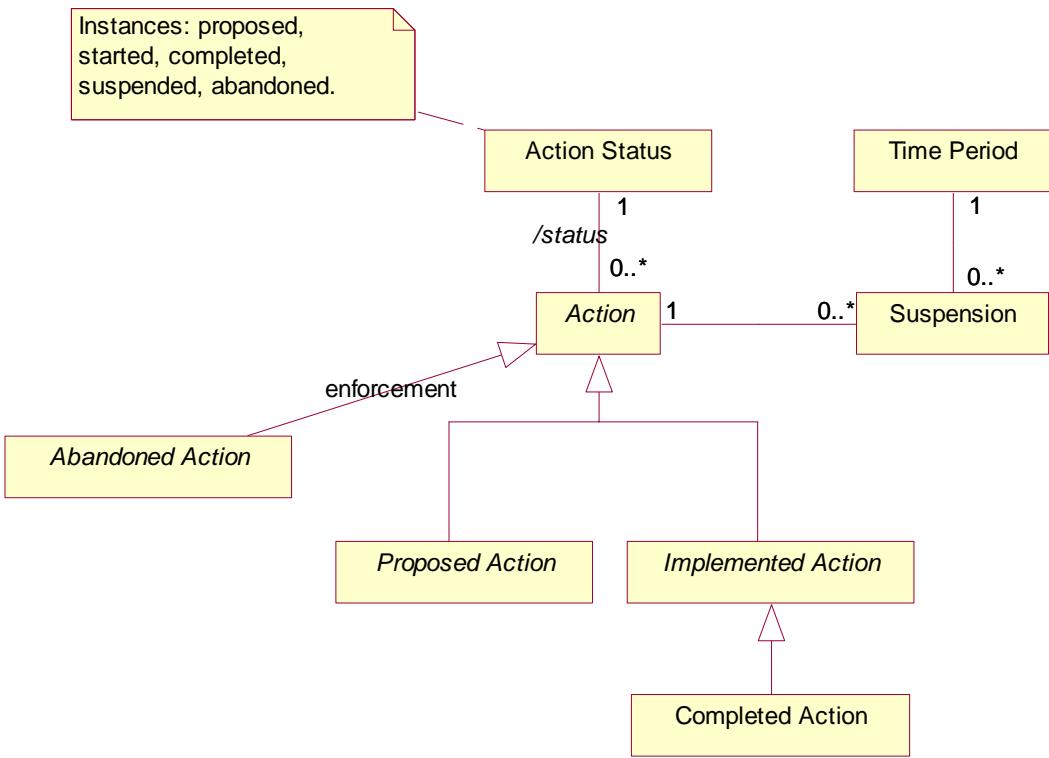
Figure 8.3 Completed and abandoned actions.
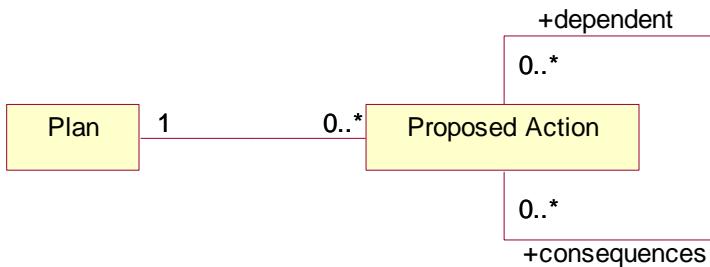
Figure 8.4 Suspension of actions.



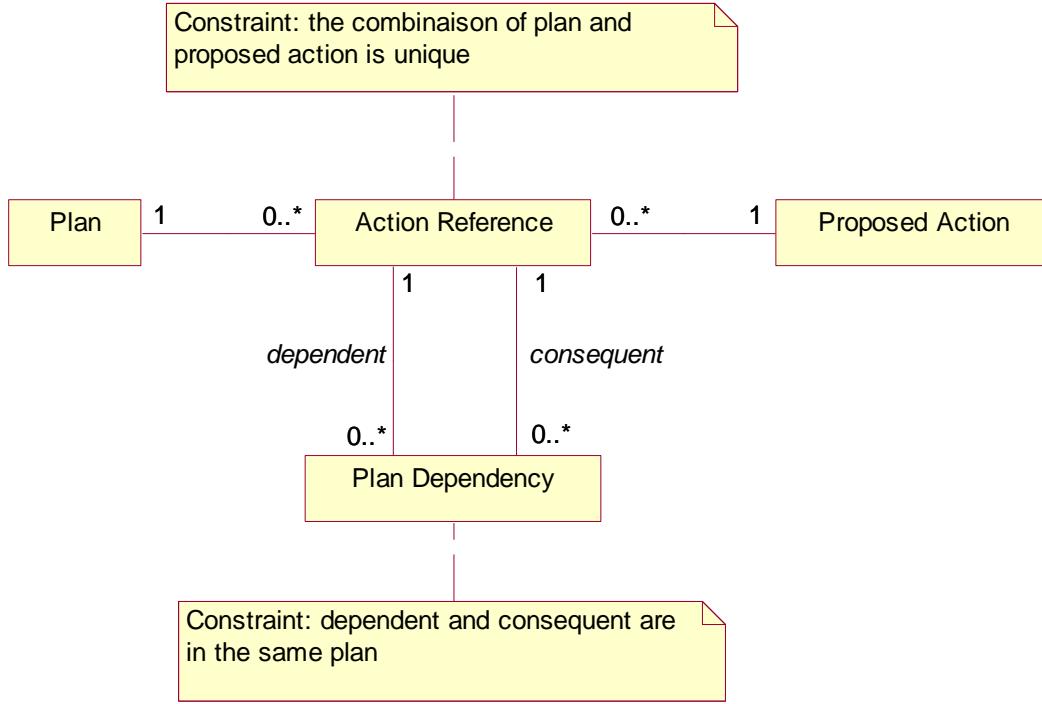Figure 8.5 Dependencies between proposed actions.

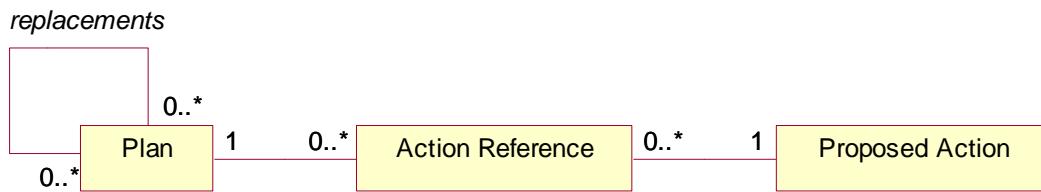Figure 8.6 A plan consisting of references to proposed actions.
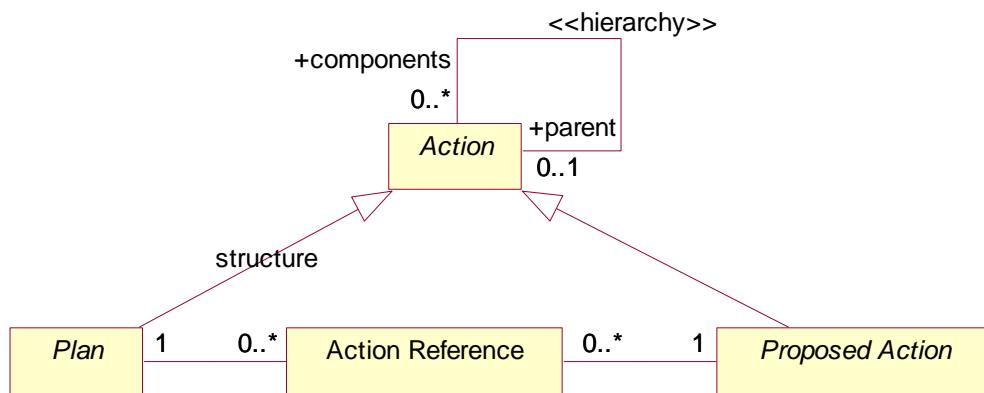


Figure 8.7 Replacement plans.
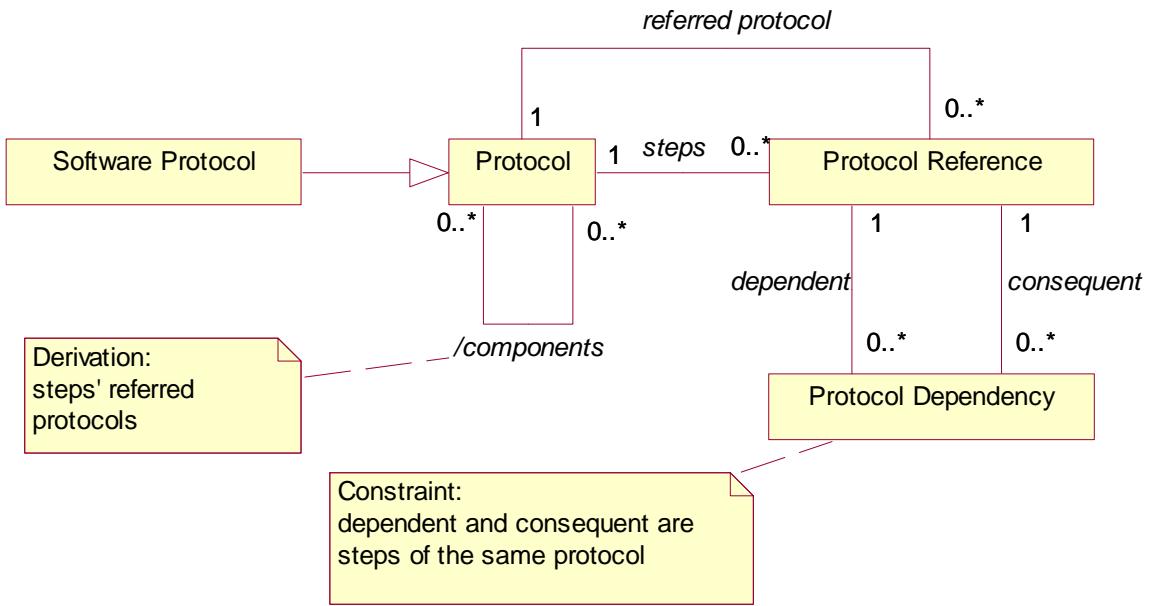


Figure 8.8 Plans as actions and compound actions.
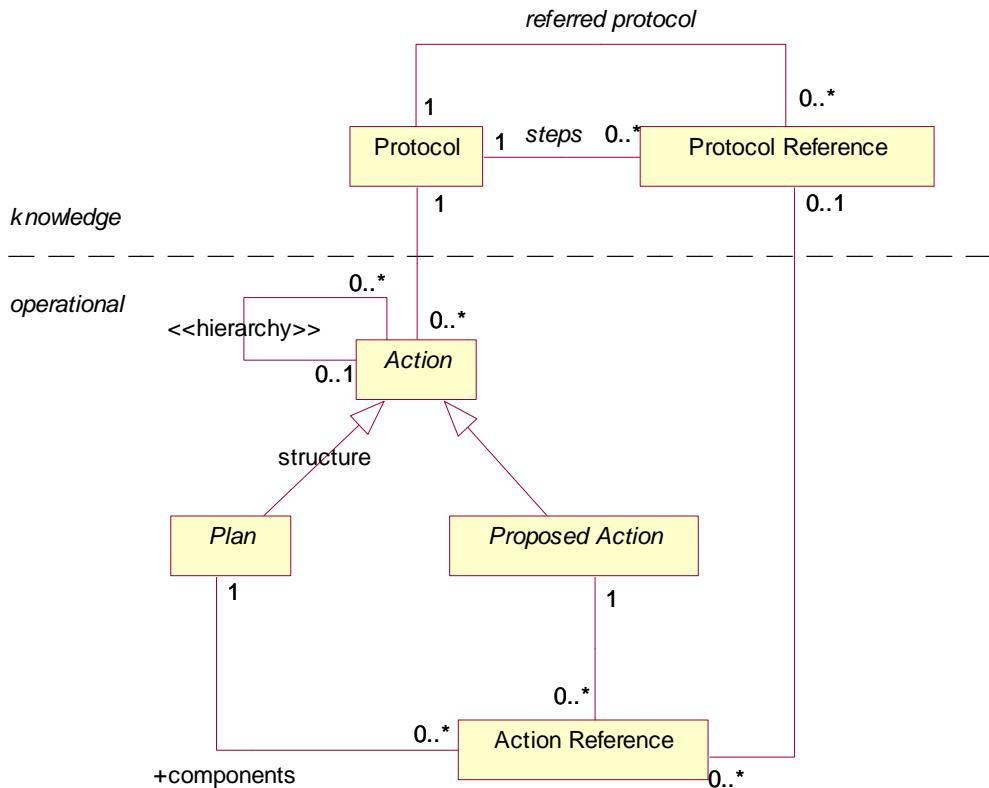
Figure 8.9 Structure of protocols.



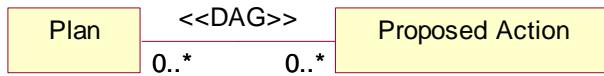Figure 8.10 Relationships among action, plan, and protocol.

Figure 8.11 Plan as a directed acyclic graph of proposed actions.
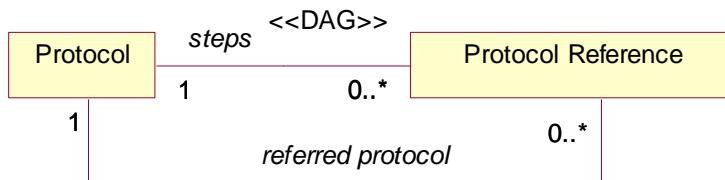


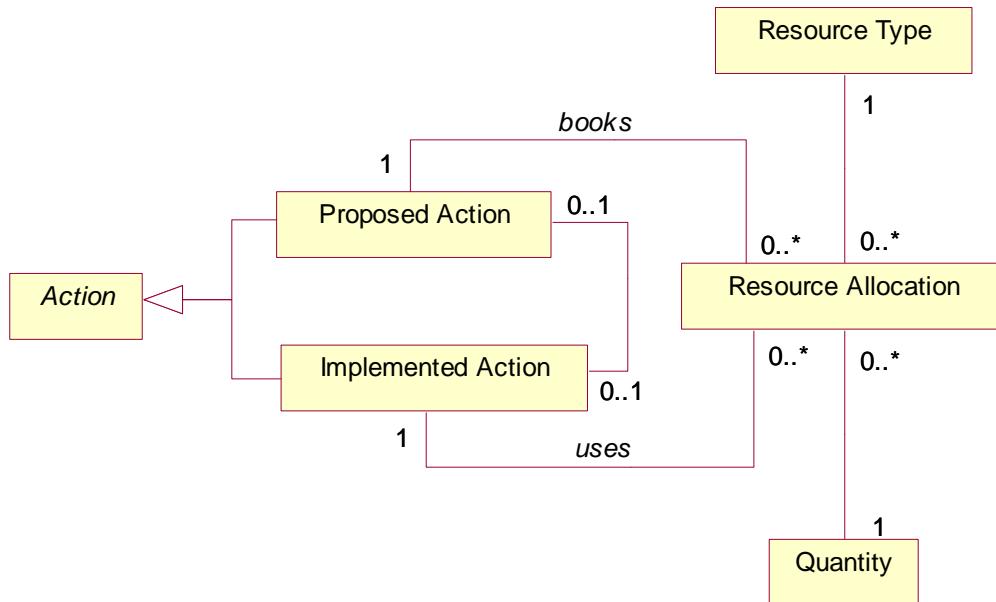Figure 8.12 Protocol using a DAG.
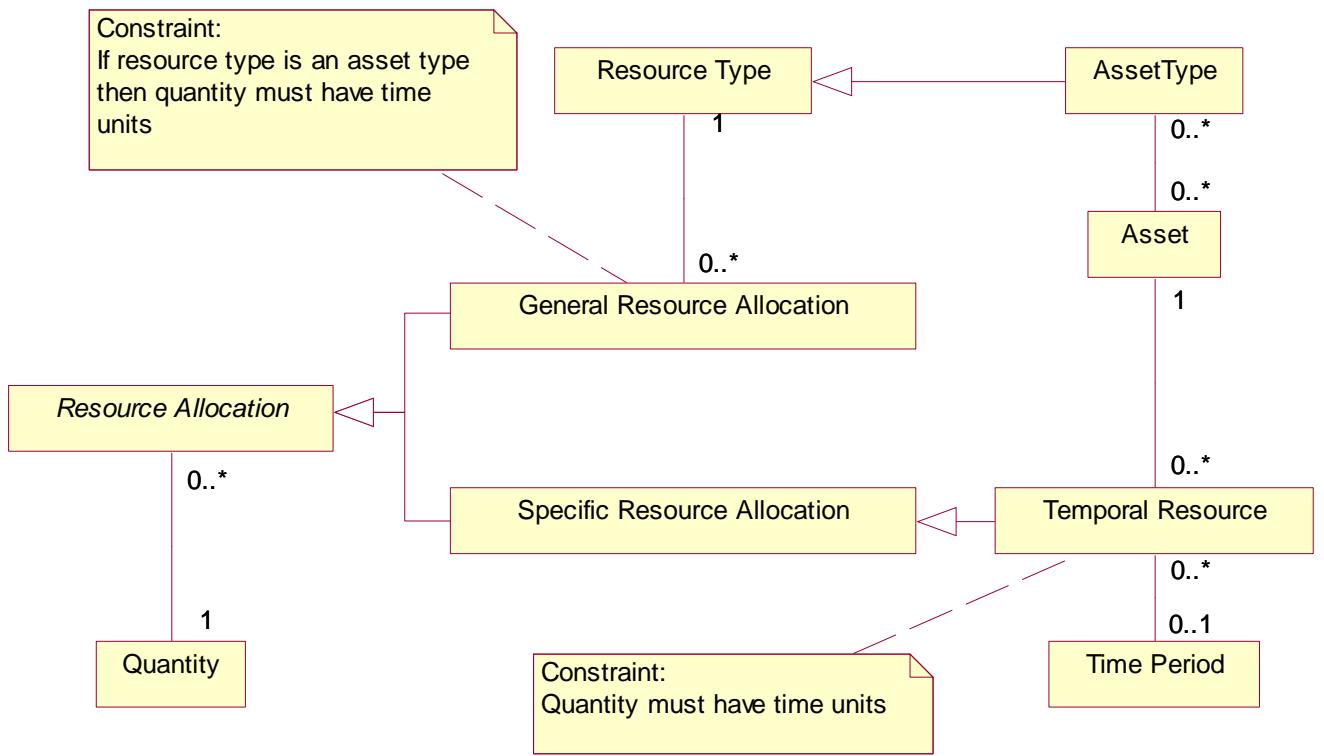


Figure 8.13 Action's use of resources.
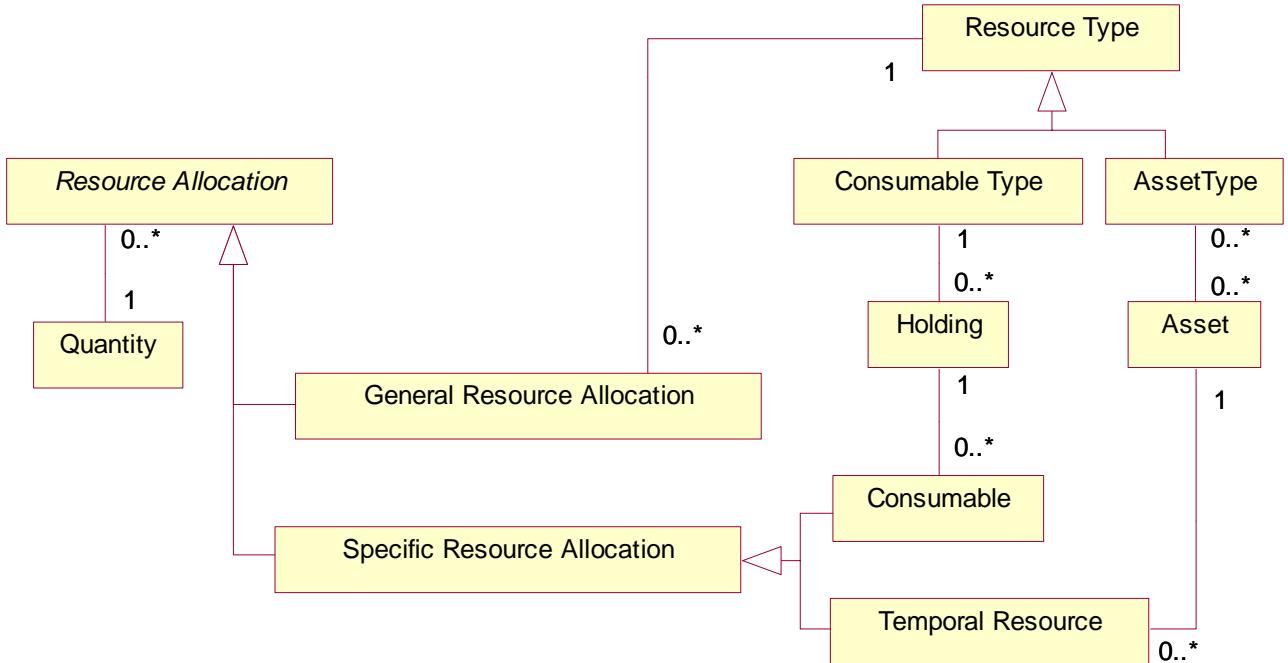
Figure 8.14 Resource allocations for assets.



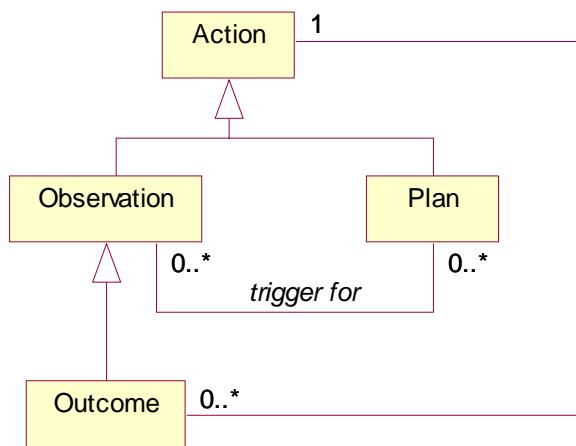Figure 8.15 Allowing specific allocations of consumables.

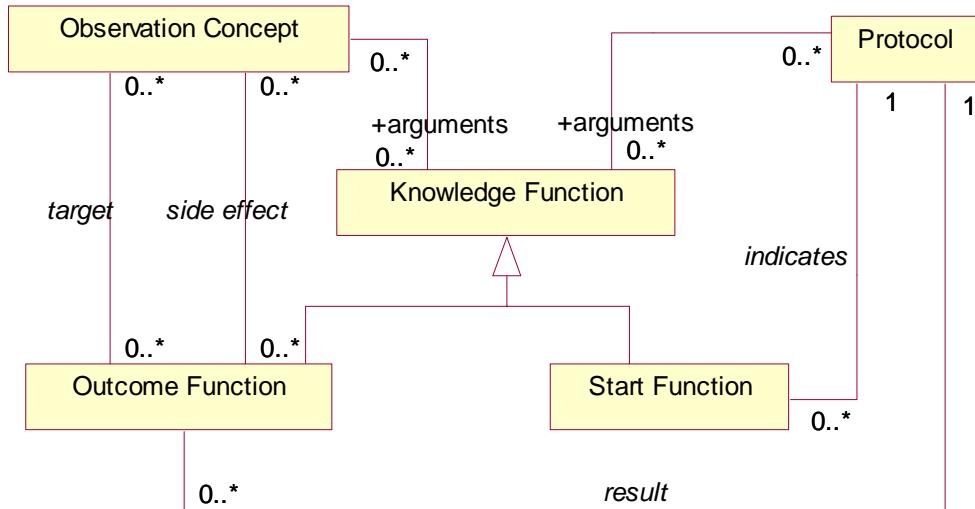Figure 8.16 Links between observation, plan and action.



Figure 8.17 The use of start and outcome functions at the knowledge level.