Organization Structure, verbose description

Author: Karl Hammar
OWL Example file: http://www.infoeng.se/~karl/images/2/22/Organization_Structure.owl

Domain: Multiple
Status: Draft

Purpose: The purpose of the Organisation Structure pattern is to model situations where a party of arbitrary size (i.e. a person, a group of people, or a whole organisation) has multiple hierarchical relationships to other parties (i.e. parent company, subdepartment, etc), that are valid for certain periods of time.

Example scenarios:

- Martin has been employed by Acme Inc since February 2003. He works within the Weapons Development Lab, which is a department of the R&D Division of Acme Inc. He reports to the head of the Weapons Development Lab who in turn reports to the Director of Research of Acme Inc. From September 2005 to April 2006 Martin was involved in Project Mayhem, in which he reported to the project lead who in turn reported directly to the CEO of Acme Inc.
- The Foo Coffee Machine Company (FooCorp) has a sales organisation that is divided into main three regions, EMEA, Asia-Pacific, and the Americas. These regions are further subdivided by country. In most countries that FooCorp has sales offices, the sales offices are located in the largest city or in the capital city, and serve the whole country. In some large countries, the organisation is further divided into smaller regional or state sales offices. The service organisation of FooCorp is on the other hand organised into product family service departments, and these departments are in turn subdivided into individual product service departments. The service team for coffee machines of the models XF1 and XF2 in Paris reports to both the French sales office in that same city (in turn reporting to the EMEA sales region) and to the XF1 and XF2 service departments (who in turn both report to the central XF product family service department).

Usage guidelines:

- The ”Organization Structure” class represents the connection that two parties have where one party is hierarchically superior to another. Instances of this class glues together two parties by way of the ”hasParentParty” and ”hasChildParty” properties.
- Apart from two parties, each ”Organization Structure” instance has a relation to an instance of the class ”Time Period”, denoting during which time the organization structure holds. For instance, an employment that is modelled as an organization structure is bounded in time by a starting date and optionally an ending date (if no firm end date is set, the latter can be left out).
- Furthermore, each ”Organization Structure” instance is of a certain type, represented by an instance of the class ”Organization Structure Type”. In the example about FooCorp given above, one type of organization structure could be ”sales line management” and another type be ”product support”.
- Rule instances can be attached to ”Organization Structure Type” instances to set limits on possible organization structures, for instance to ensure that a party that is a sales office is never superior to a party that is a sales region in the context of sales line management for instance (as in the above given example).

Competency Questions:

- What individuals or groups worked in Project Mayhem?
- Taking two steps in the organisation hierarchies, how many direct or indirect managers does Martin report to?
- What other people have the same place in the organisation hierarchy as Martin does, defined as reports to the same boss and works in the same department or project?
- Counting country offices and state sales sales offices, how many sales offices do FooCorp have in the EMEA region?

Prerequisites:

- Utilising the Rule concept in the pattern requires that the resulting ontology is used with rule systems such as Jena Rules or SWRL.

Limitations

- The pattern does not allow for transitive organization structures (i.e. that Martin's boss's boss is also Martin's boss). This could perhaps be implemented by using property chains in OWL 2.

Notes:

- This pattern is based on the Organization Structure pattern presented in the second chapter of "Analysis Patterns: Reusable Object Models" by Martin Fowler (1997).

Illustration 1 (TopBraid notation):

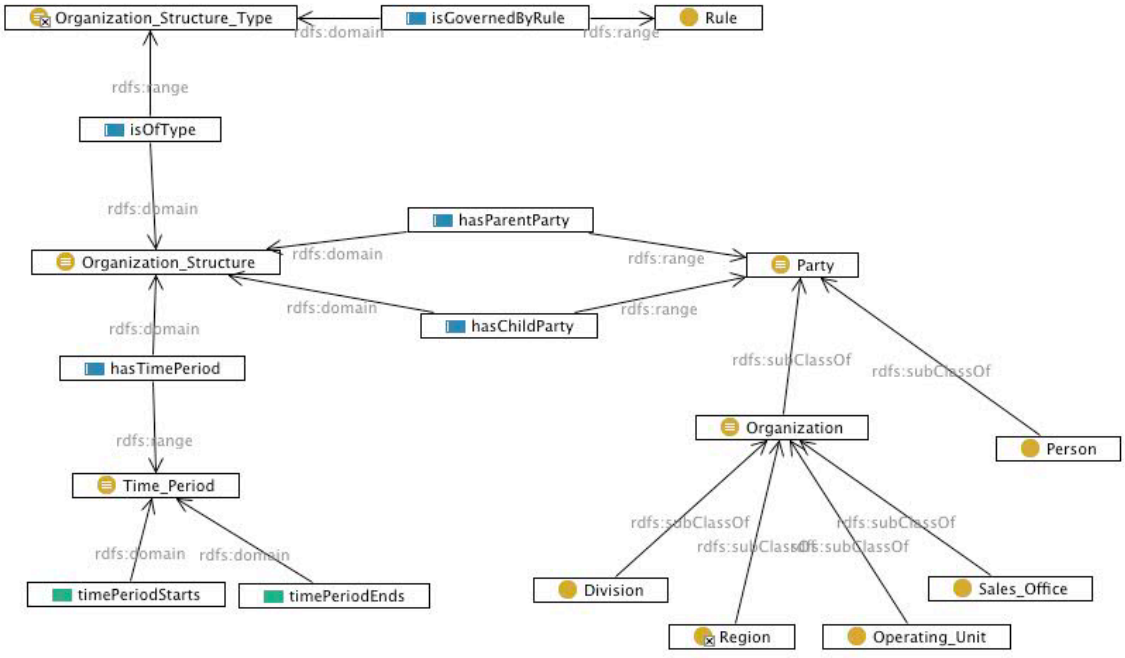
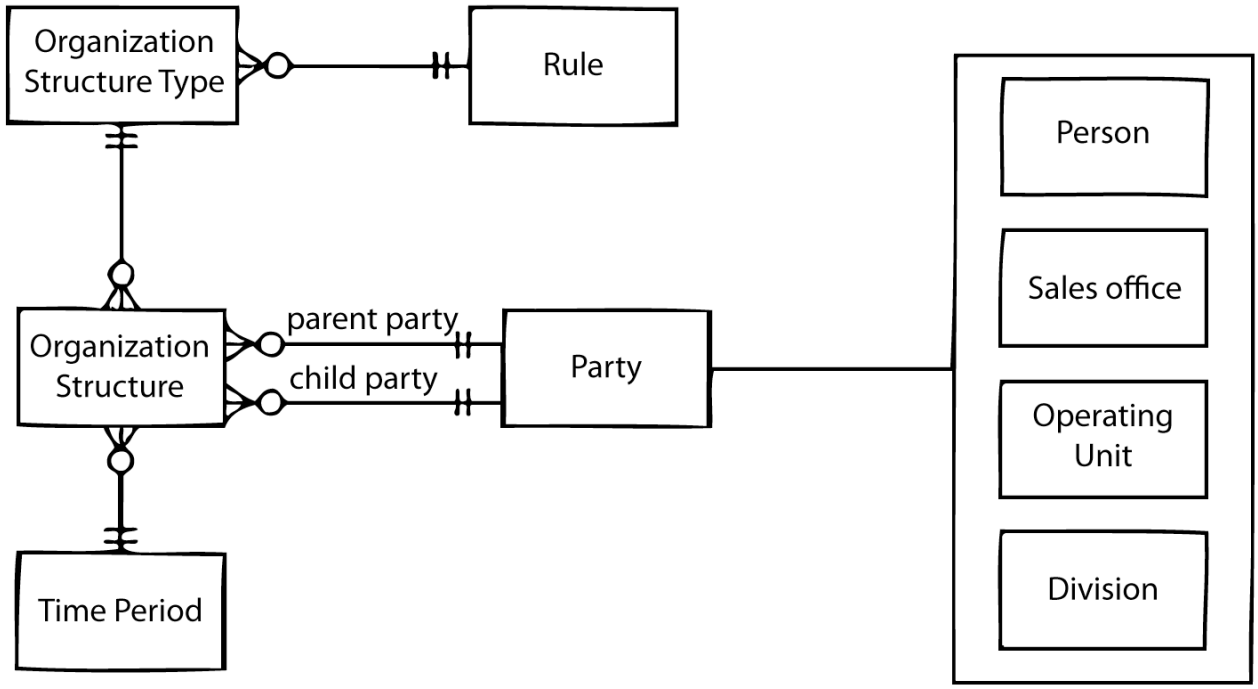


Illustration 2 (Fowler notation):


Organization Structure Type
Rule
Person
Sales office
Operating Unit
Division
Organization Structure
parent party
child party
Party
Time Period