CCO design patterns

- The following slides contain design patterns for CCO and BFO to be vetted and translated into Mermaid.

- In some cases, big design patterns need to be split into more simple patterns. In other cases, they need to be made more or less general.

- The sources of these design patterns are varied (papers, independent work of researchers, presentations). When possible, provenance of the images is shown. All credits are due to the authors of the respective patterns.

To Do:

- Gather competency questions/use cases (IES, CUBRC (Giacomo), BORO, SOSA, Ryan Cybersecurity (Ryan), etc.)
- Categorize design patterns (Giacomo) (time, space, time+space, roles, dispositions, information,...)
- Homework (Greg and Elena get some first design patterns done)

Mark JENSEN [a,b,1], Giacomo DE COLLE [b,c], Sean KINDYA [c], Cameron MORE [b,d], Alexander P. COX [b,d], and John BEVERLEY [b,c,e]

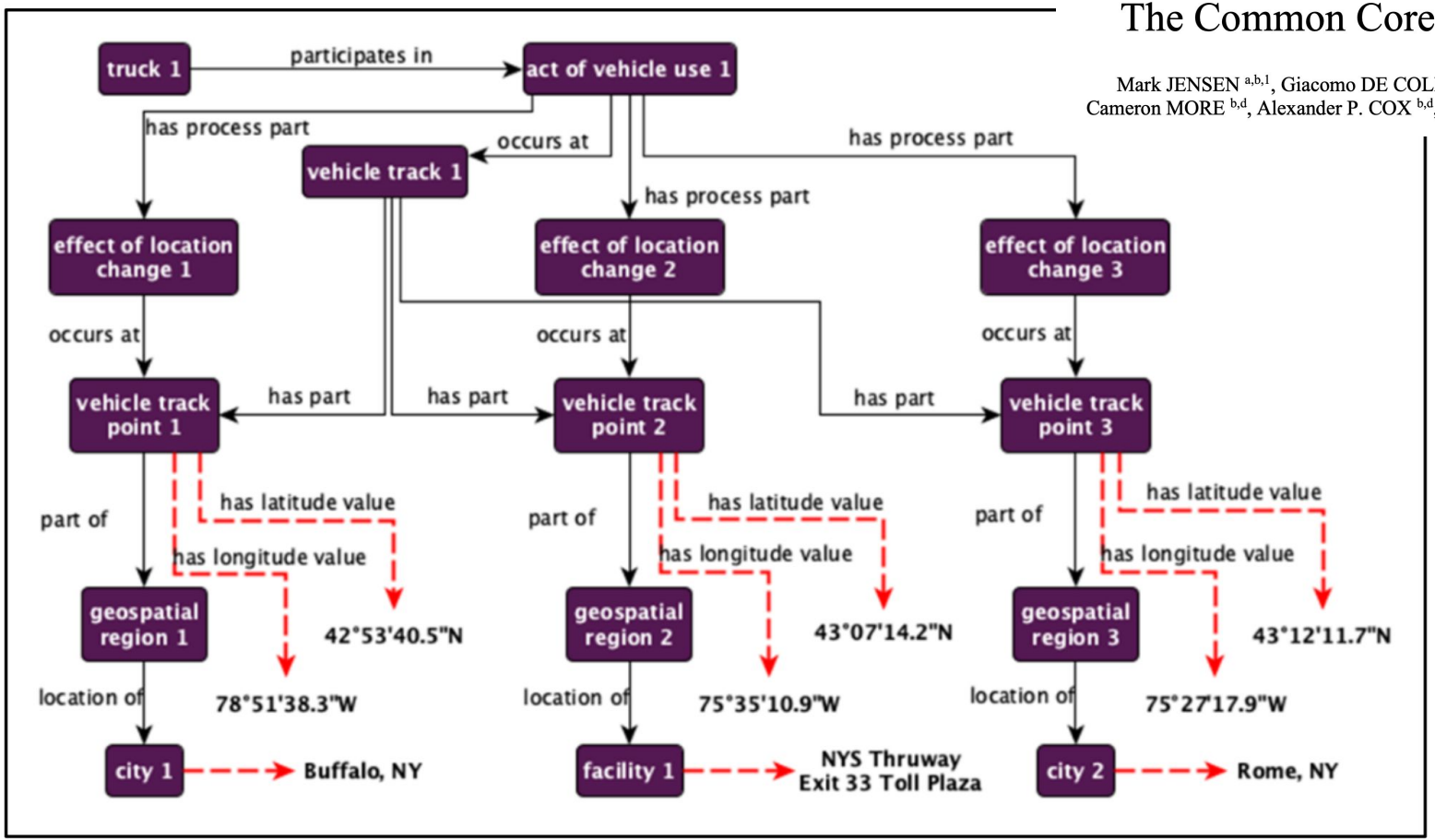


***Figure 1**: Tracing a Truck across Geospatial Regions*

The Common Core Ontologies

Mark JENSEN [a,b,1], Giacomo DE COLLE [b,c], Sean KINDYA [c],
Cameron MORE [b,d], Alexander P. COX [b,d], and John BEVERLEY [b,c,e]

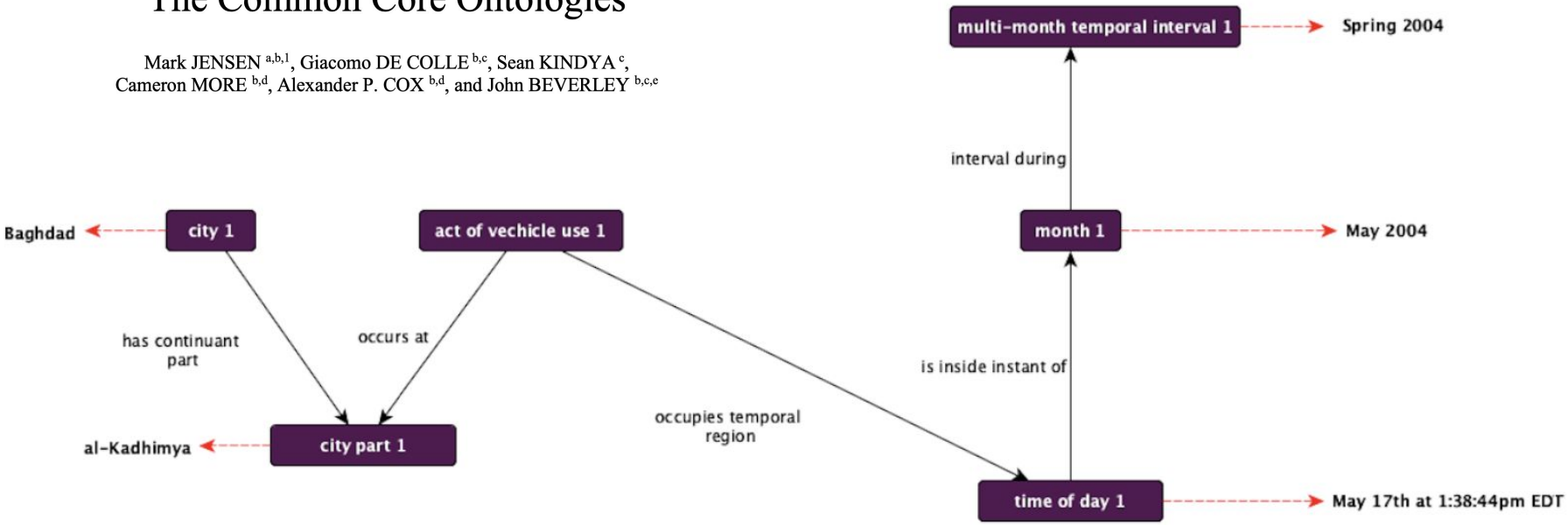


***Figure 2**: Tracking Processes across Temporal and Spatial Granularities*

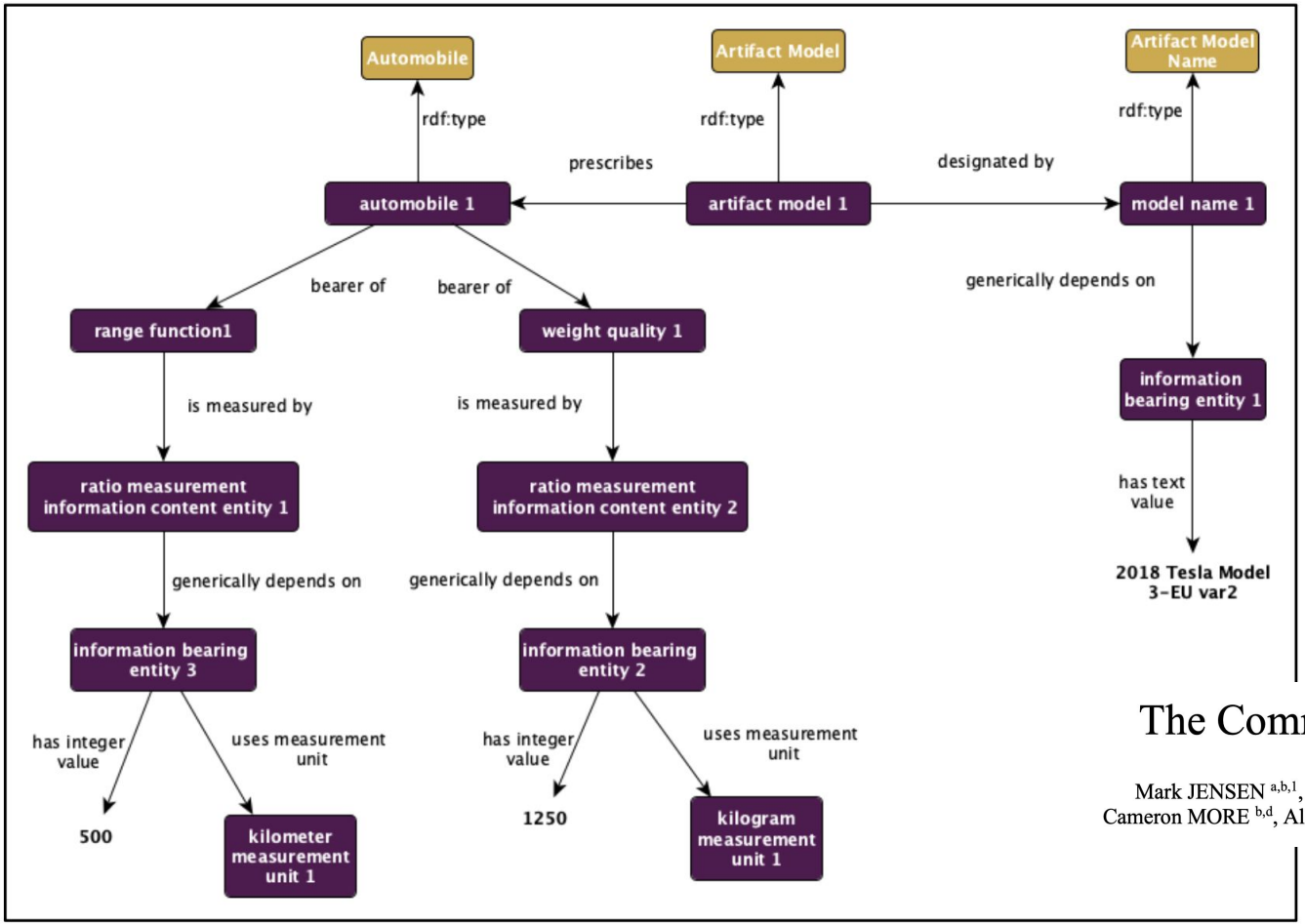


***Figure 3**: Measuring Outcomes of an Artifact Model Prescription*

The Common Core Ontologies

Mark JENSEN [a,b,1], Giacomo DE COLLE [b,c], Sean KINDYA [c], Cameron MORE [b,d], Alexander P. COX [b,d], and John BEVERLEY [b,c,e]

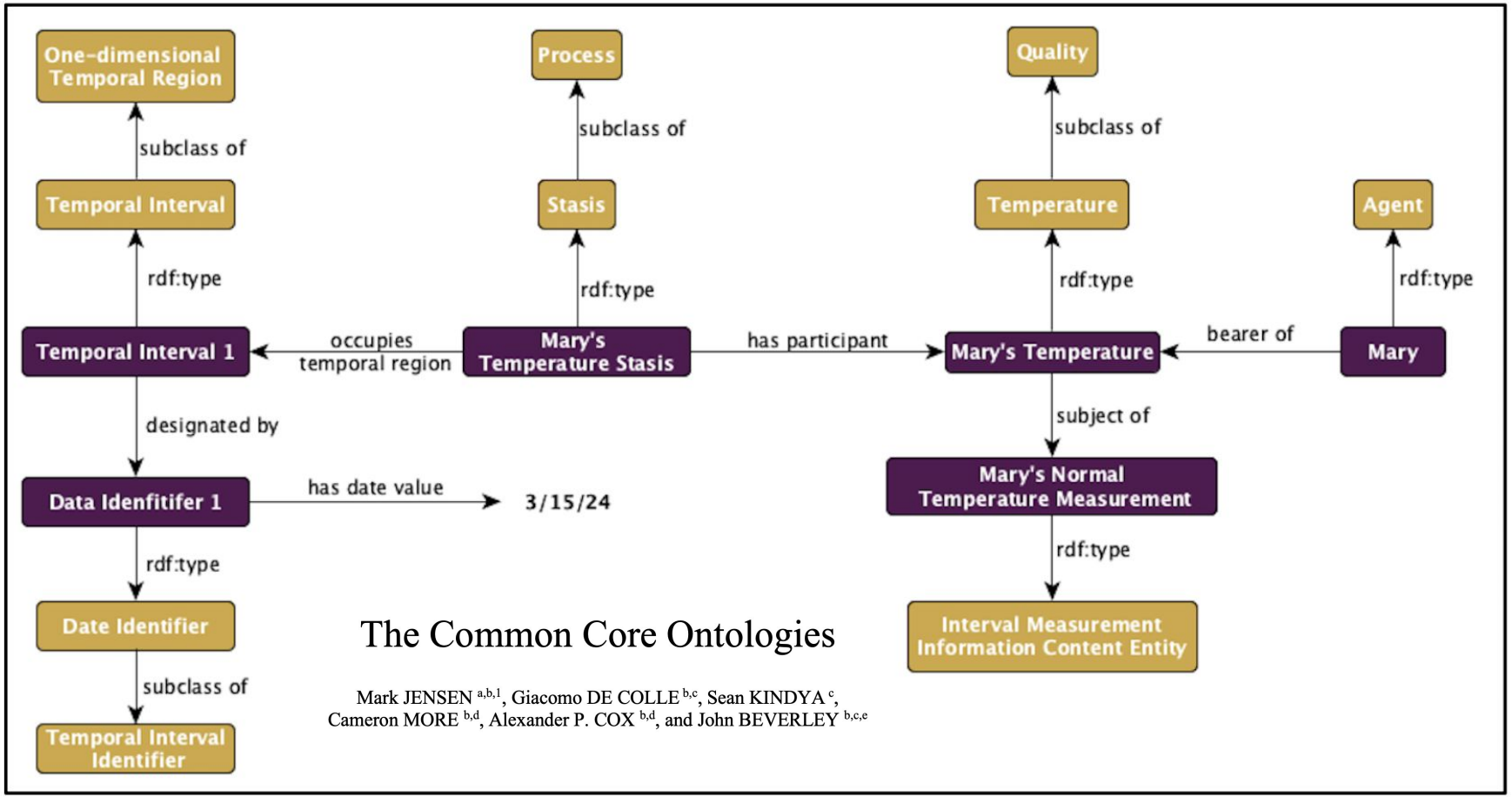


***Figure 4**: Measuring Constancy over Time*

Basic Formal Ontology: Case Studies

J. Neil Otte[1], John Beverley[2], and Alan Ruttenberg[3]

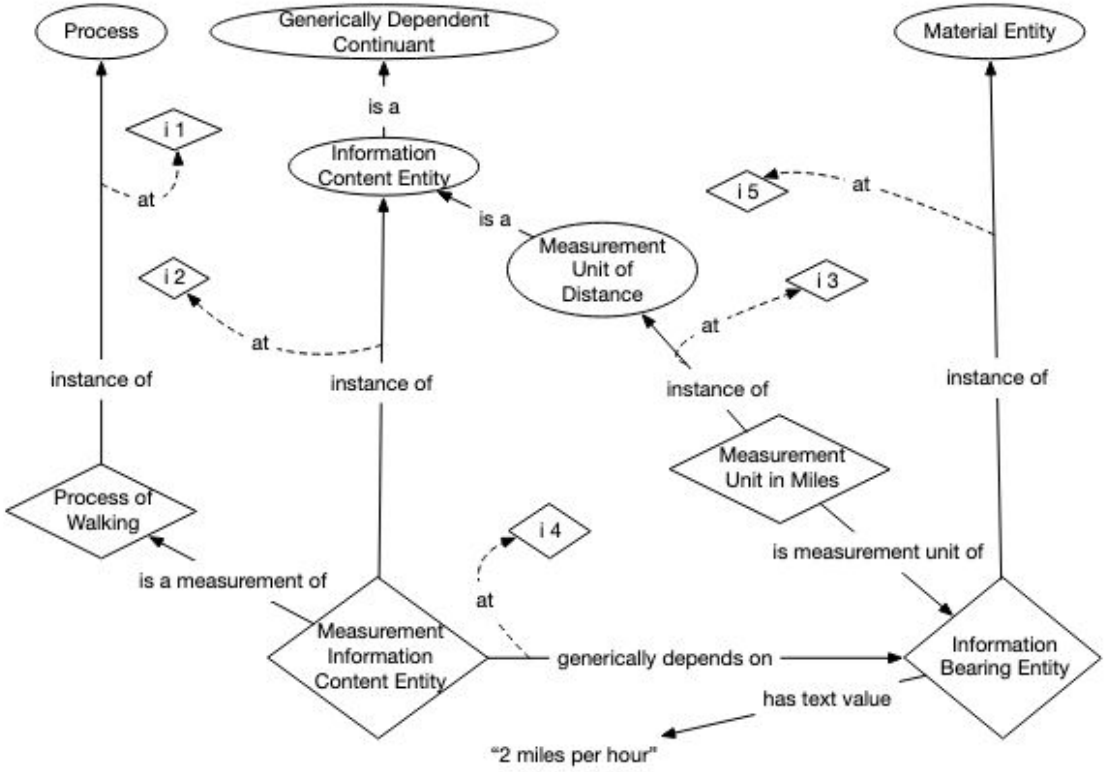


Figure 3: Relationships among Information Content Entities and Bearers

Basic Formal Ontology: Case Studies

J. Neil Otte[1], John Beverley[2], and Alan Ruttenberg[3]

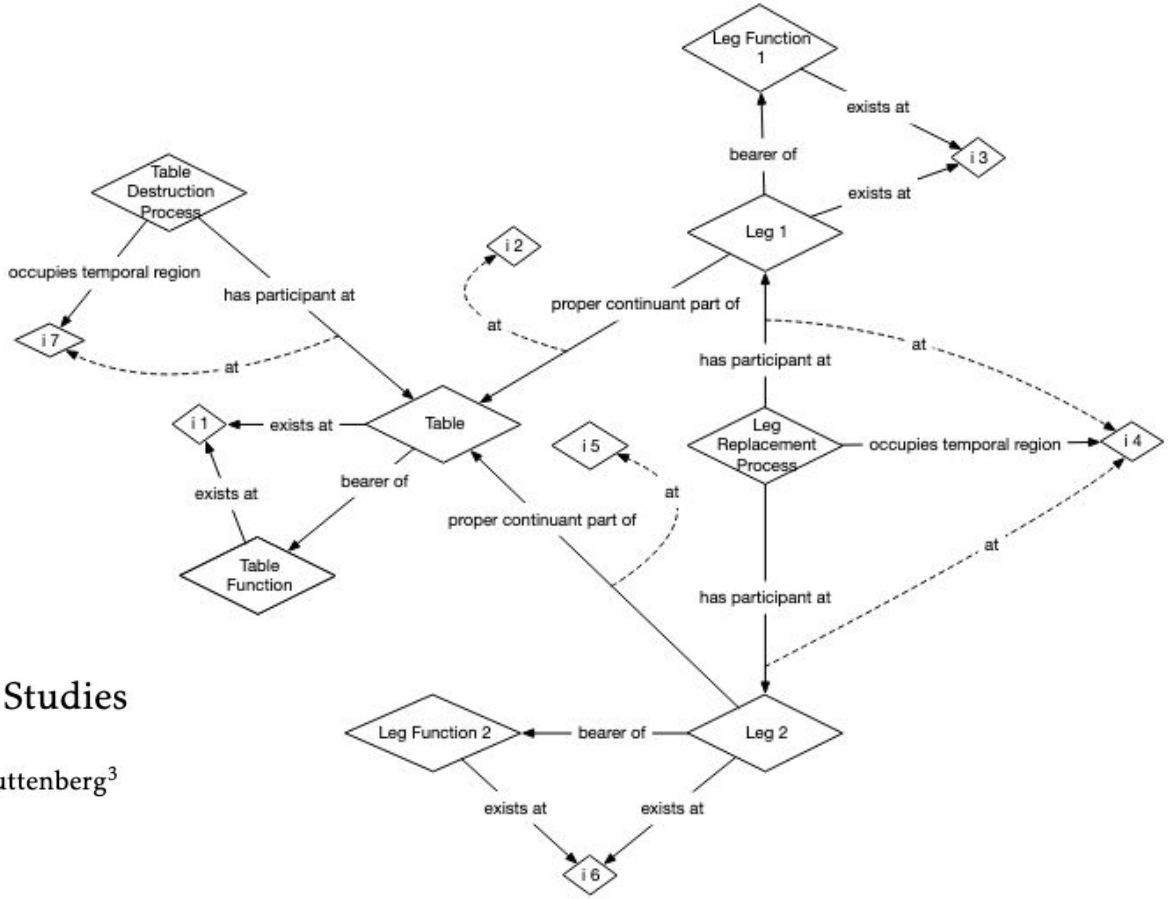


Figure 4: Table Undergoing Change in Case 1

Basic Formal Ontology: Case Studies

J. Neil Otte[1], John Beverley[2], and Alan Ruttenberg[3]

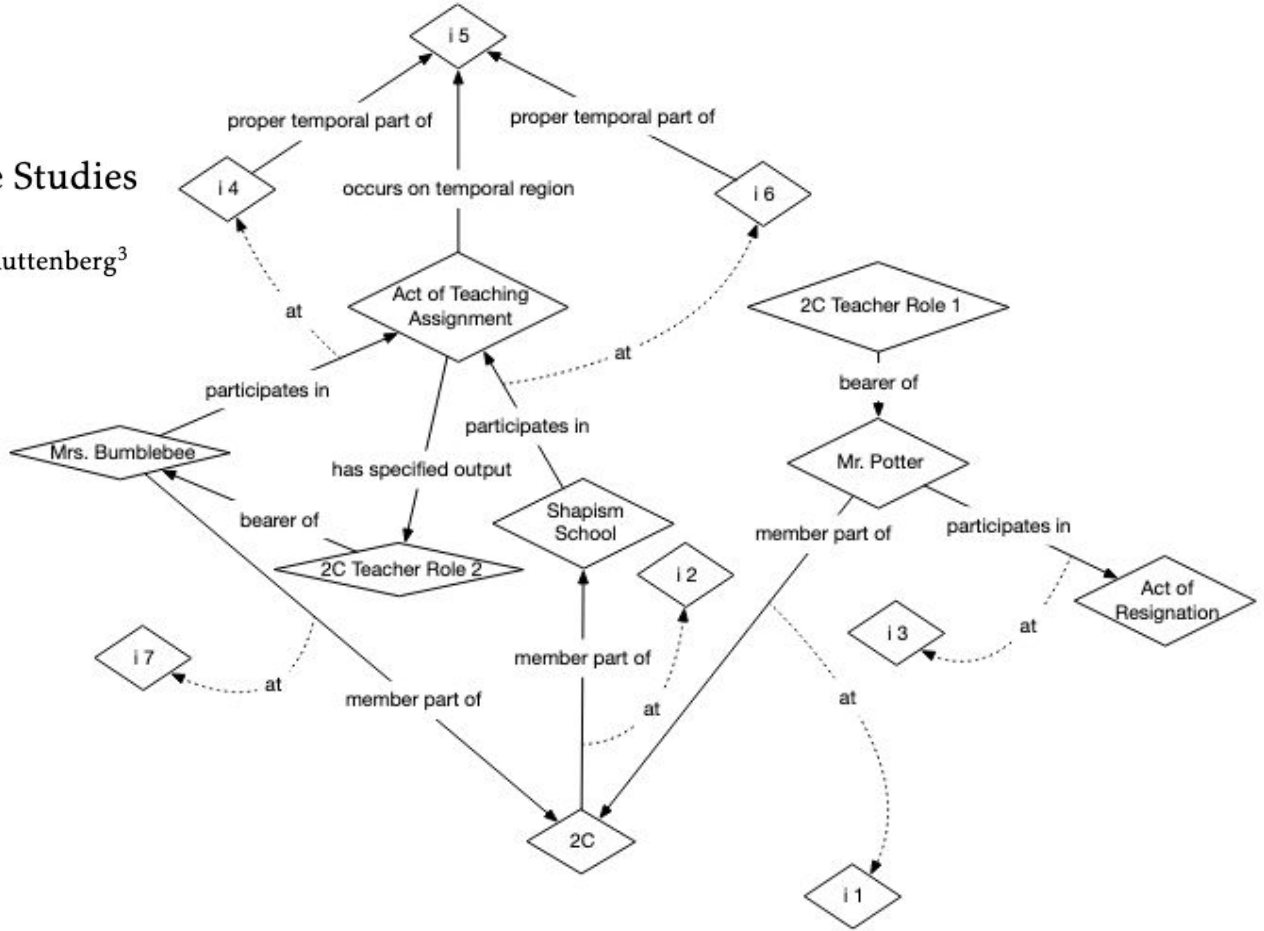


Figure 5: Resignation and Assignment of 2C Teacher Roles in Case 2

Basic Formal Ontology: Case Studies

J. Neil Otte[1], John Beverley[2], and Alan Ruttenberg[3]

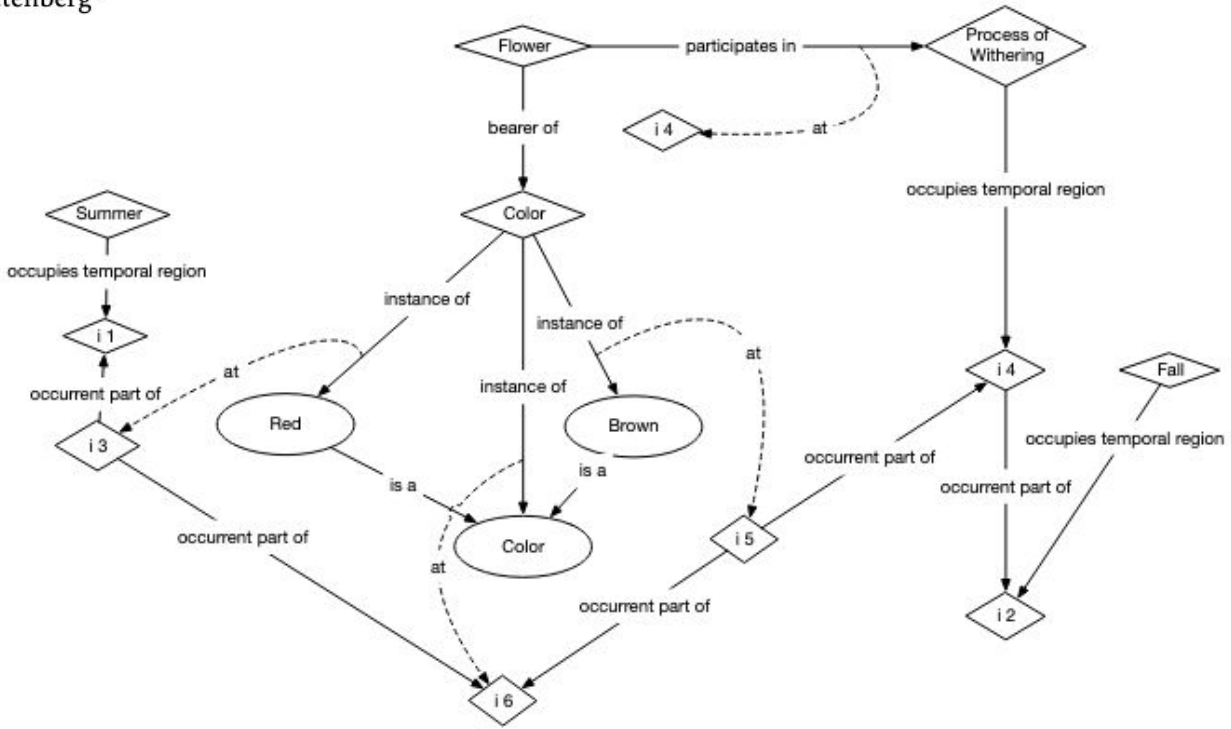


Figure 6: Petal Changing Color in Case 3

Basic Formal Ontology: Case Studies

J. Neil Otte[1], John Beverley[2], and Alan Ruttenberg[3]

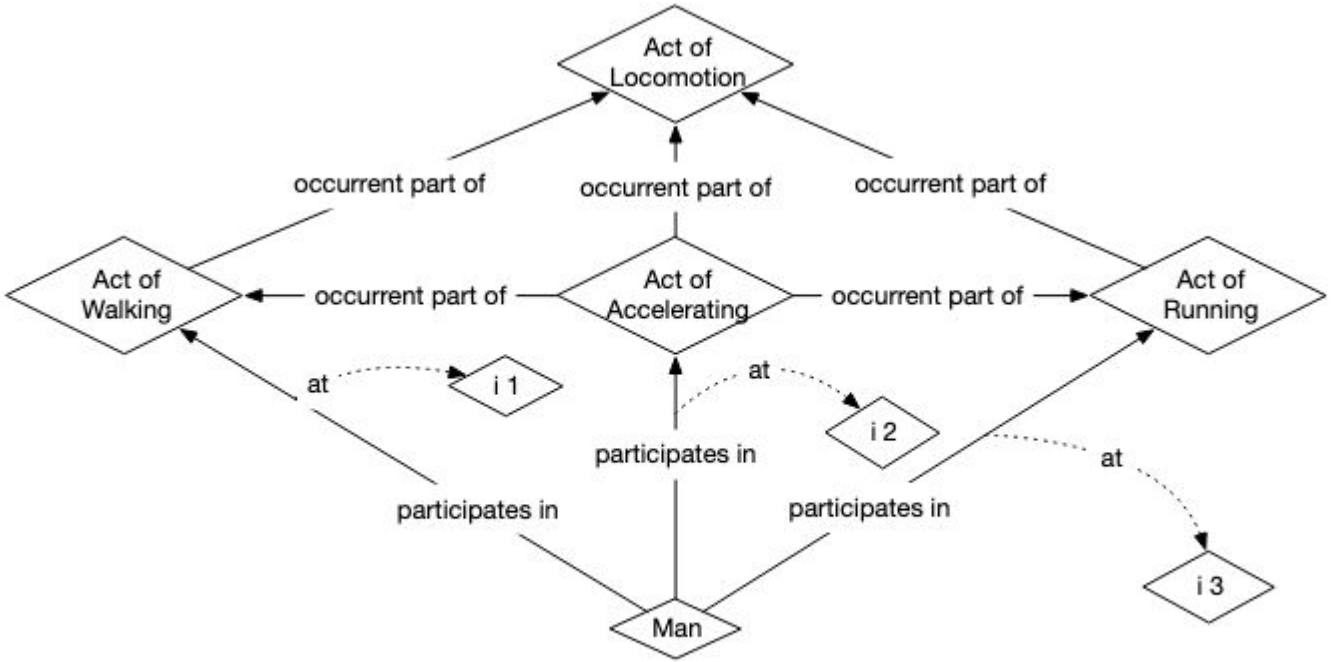


Figure 7: Man Moving with Increasing Speed in Case 4

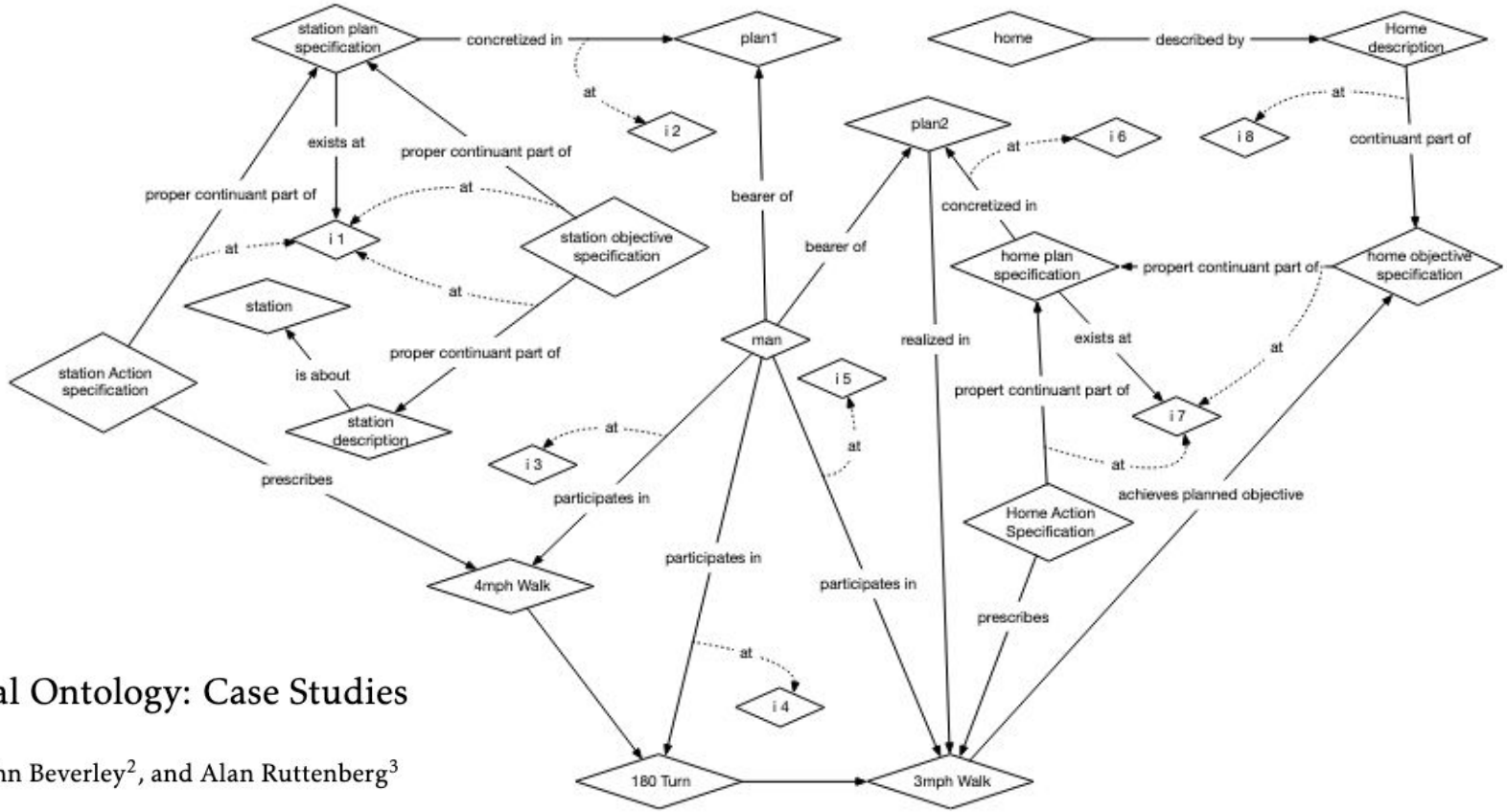


Figure 8: Man Walking to Station, then Home in Case 5

Basic Formal Ontology: Case Studies

J. Neil Otte[1], John Beverley[2], and Alan Ruttenberg[3]

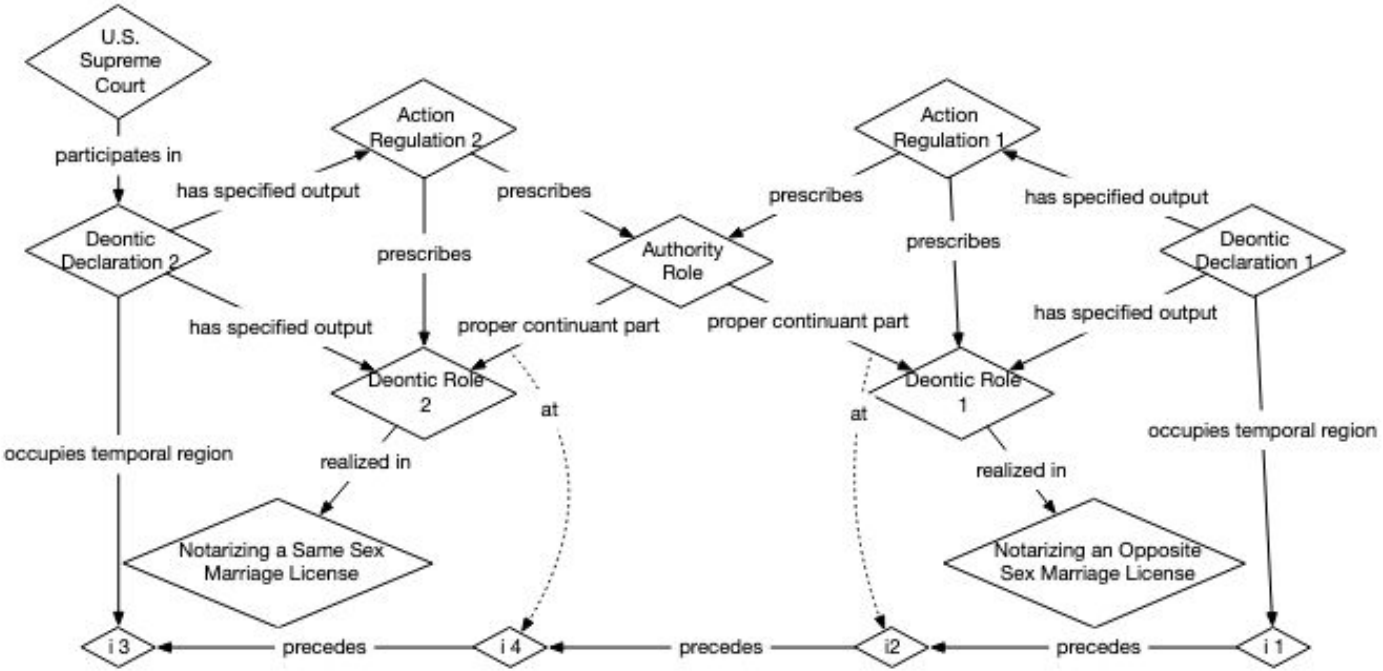
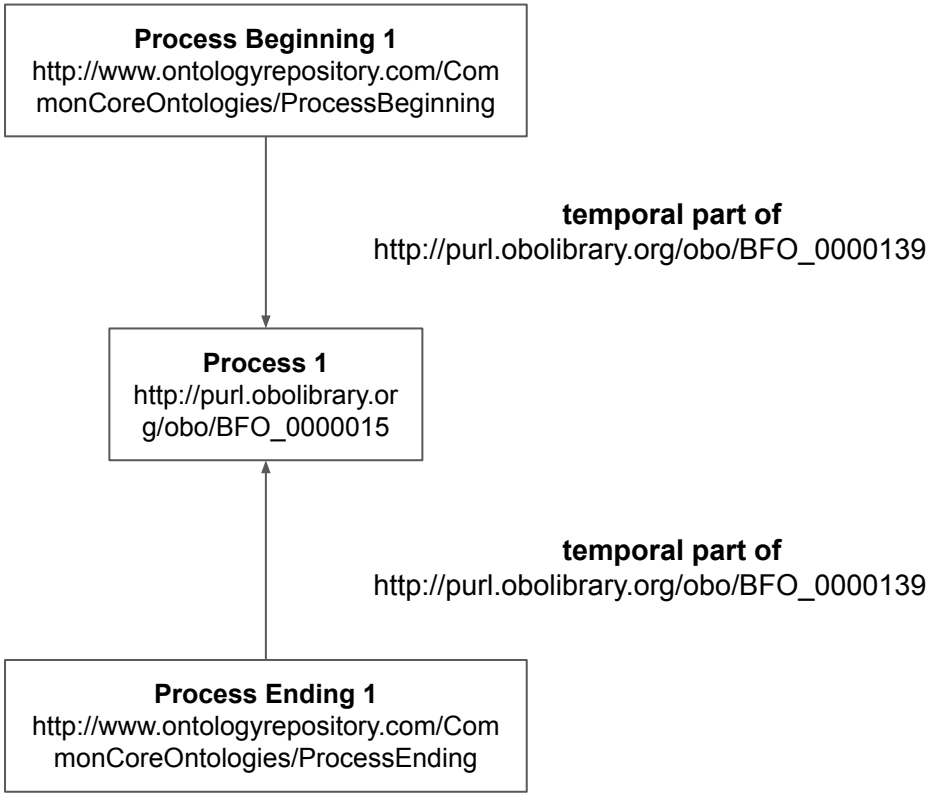


Figure 9: Changing Deontic Roles in Case 6

Basic Formal Ontology: Case Studies

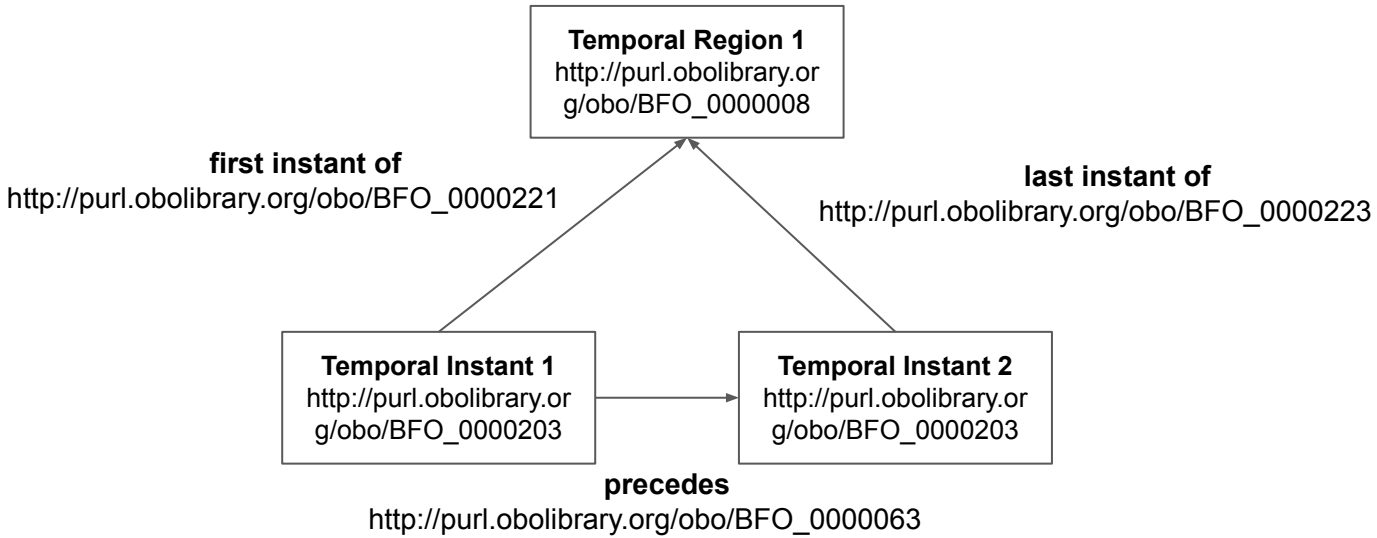
J. Neil Otte[1], John Beverley[2], and Alan Ruttenberg[3]

Starting and ending a process



The boxes depict instances of classes with the corresponding IRI. Arrows are relations of the corresponding IRI.

First and Last Moments of Temporal Regions



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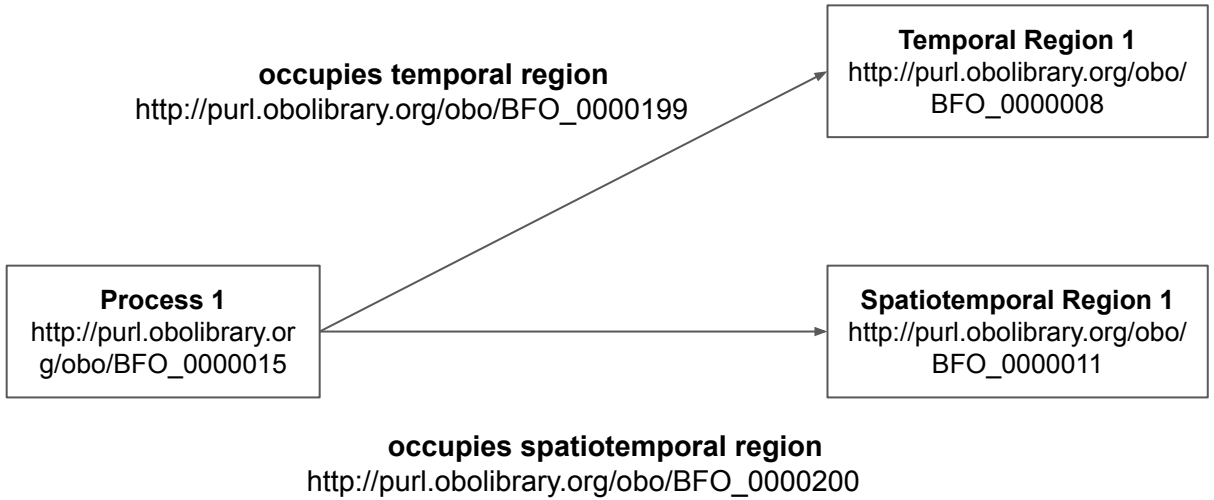
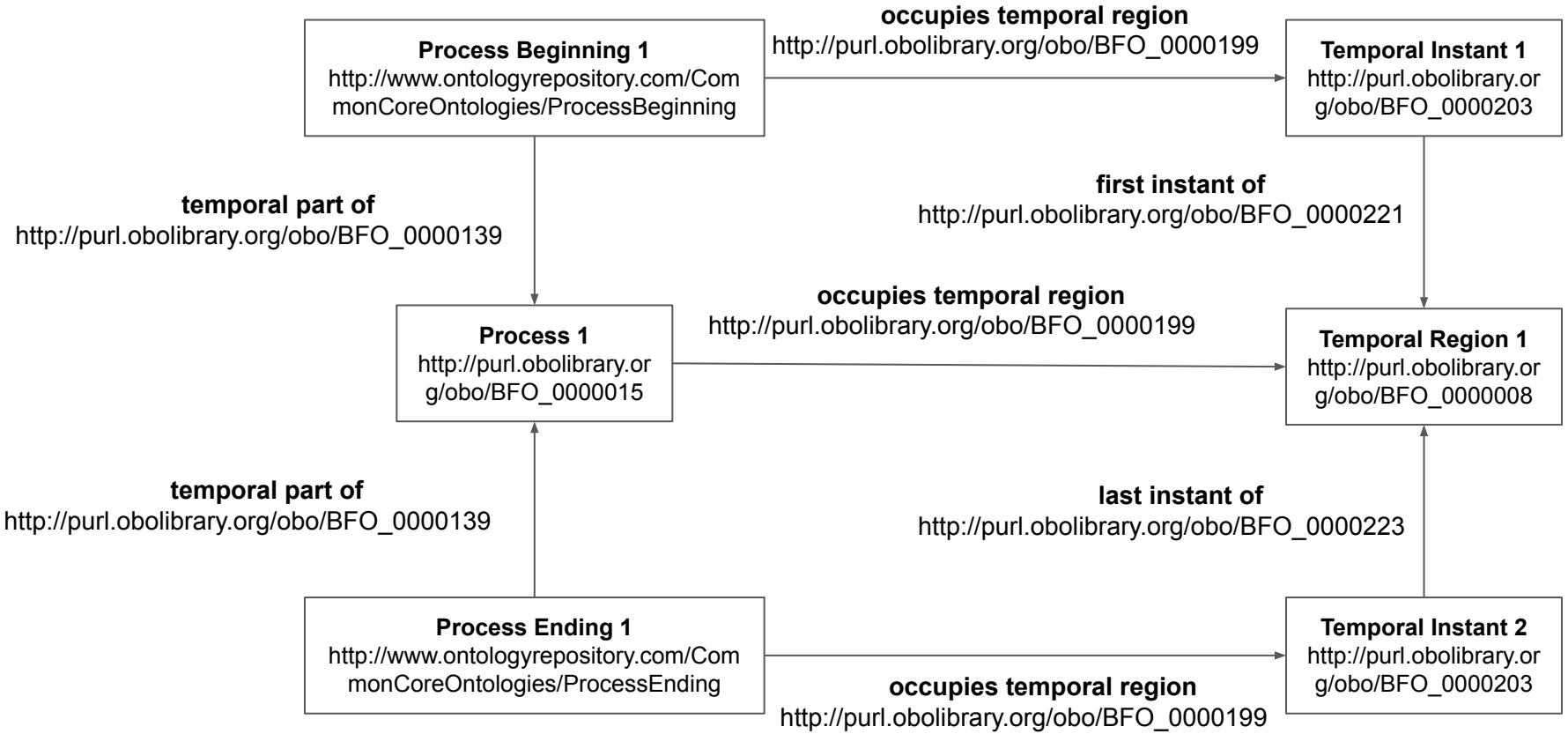
Tracking spatiotemporal and temporal information for processes



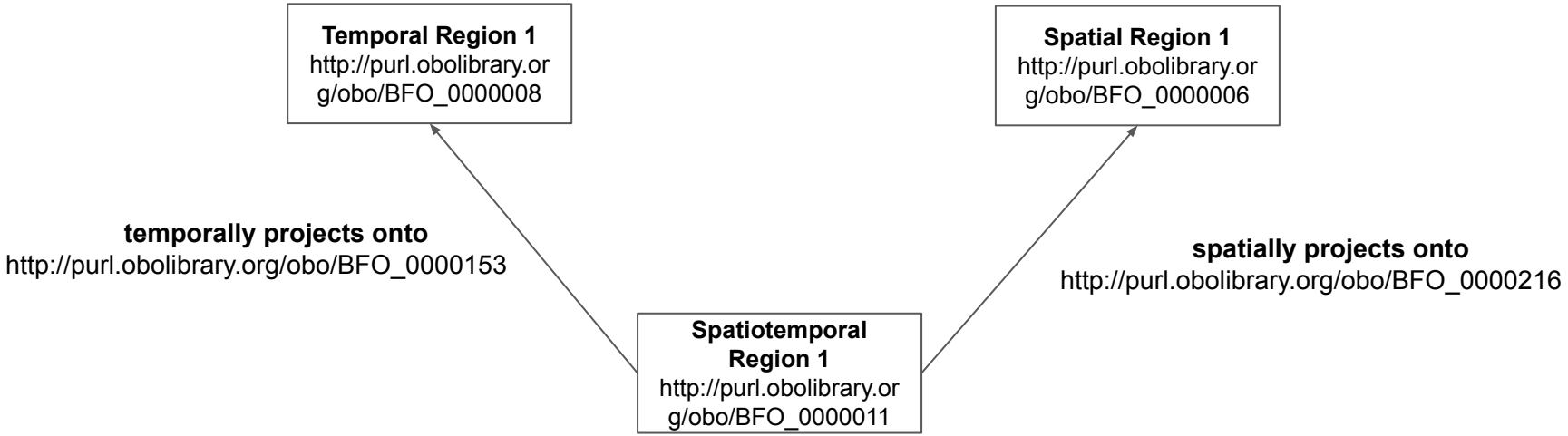
The boxes depict instances of classes with the corresponding IRI. Arrows are relations of the corresponding IRI.

Starting and ending processes in time

The boxes depict instances of classes with the corresponding IRI. Arrows are relations of the corresponding IRI.



Separating space and time information from spacetime information



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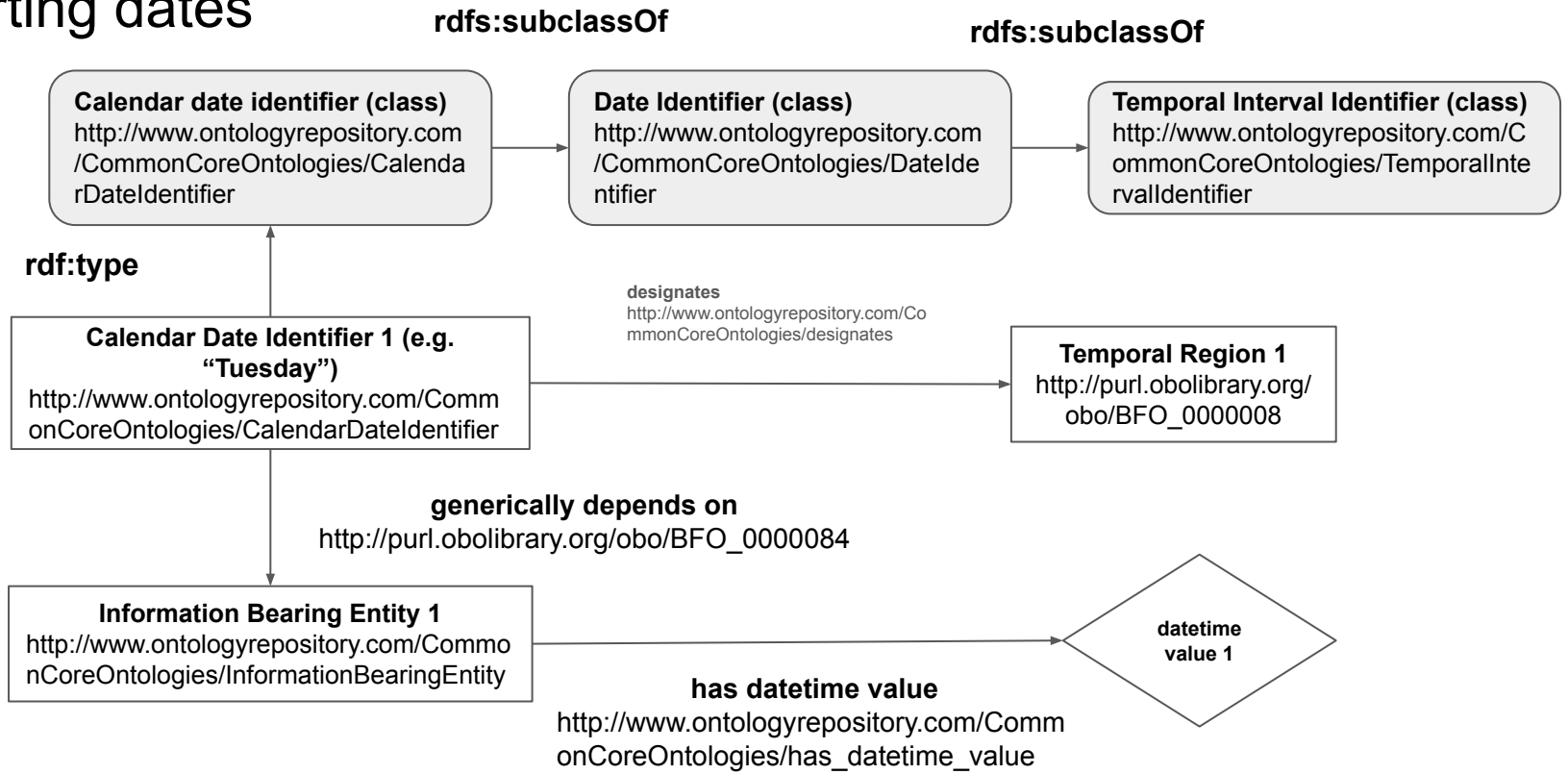
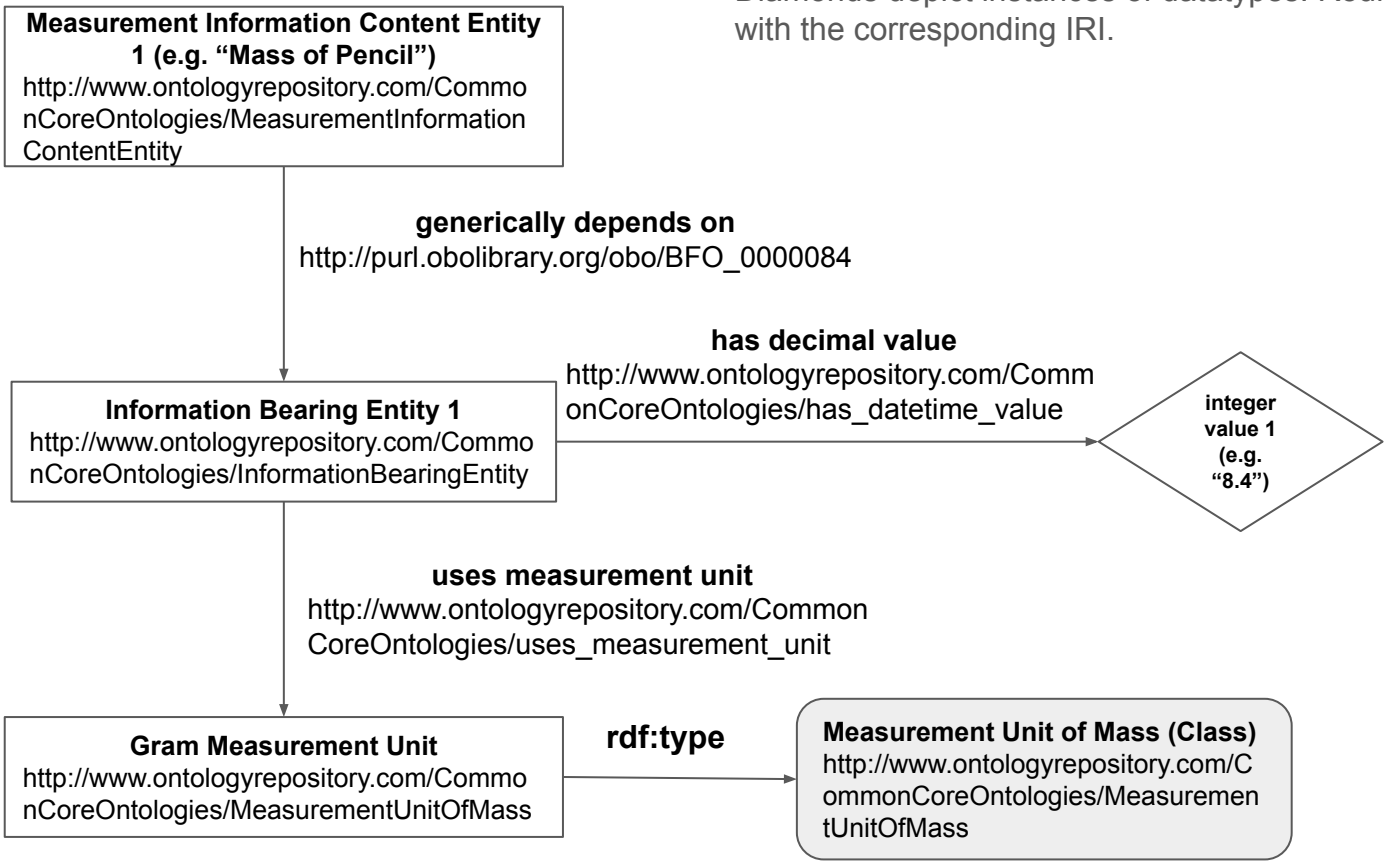
Inserting dates



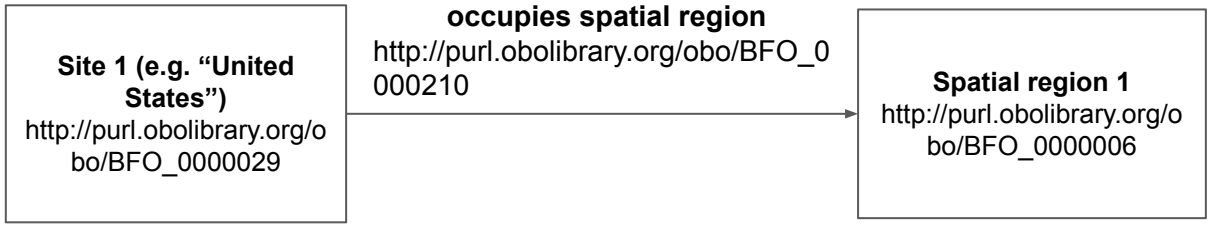
The white boxes depict instances of classes with the corresponding IRI. Arrows are relations of the corresponding IRI. Gray boxes depict classes with the corresponding IRI..
Diamonds depict instances of datatypes. Rounded boxes are classes with the corresponding IRI.

Measurement Data

The white boxes depict instances of classes with the corresponding IRI. Arrows are relations of the corresponding IRI. Gray boxes depict classes with the corresponding IRI..
Diamonds depict instances of datatypes. Rounded boxes are classes with the corresponding IRI.



Sites and spatial regions



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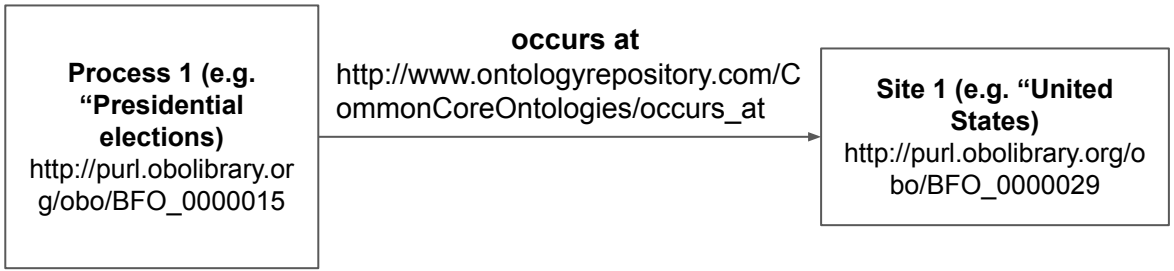
Site of a Process



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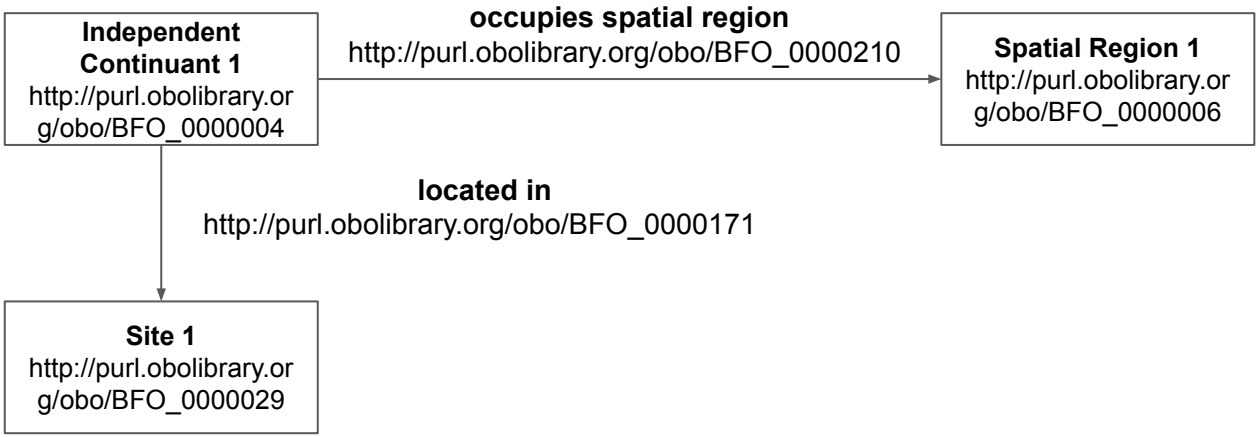
Location of Independent Continuants



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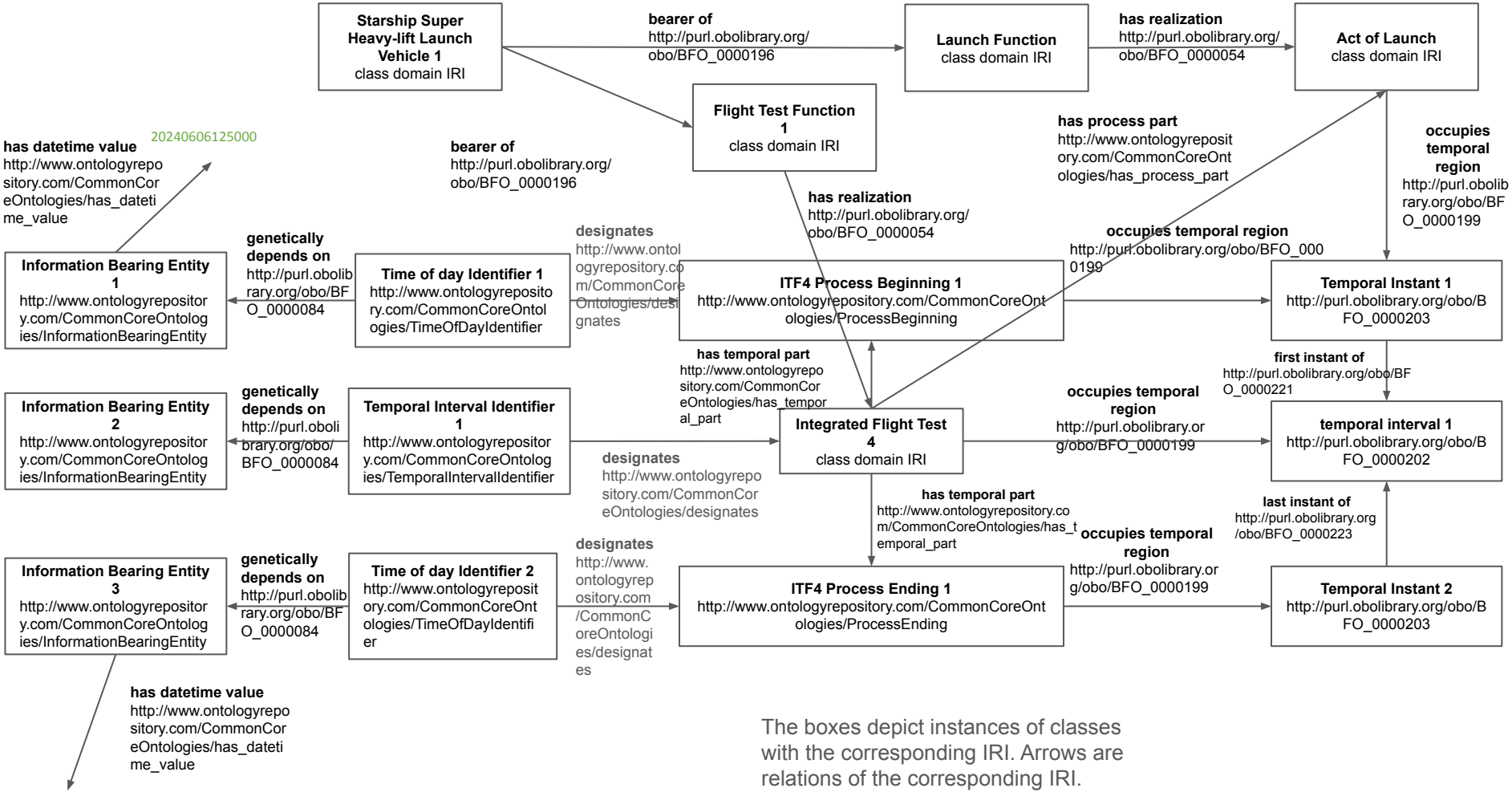

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