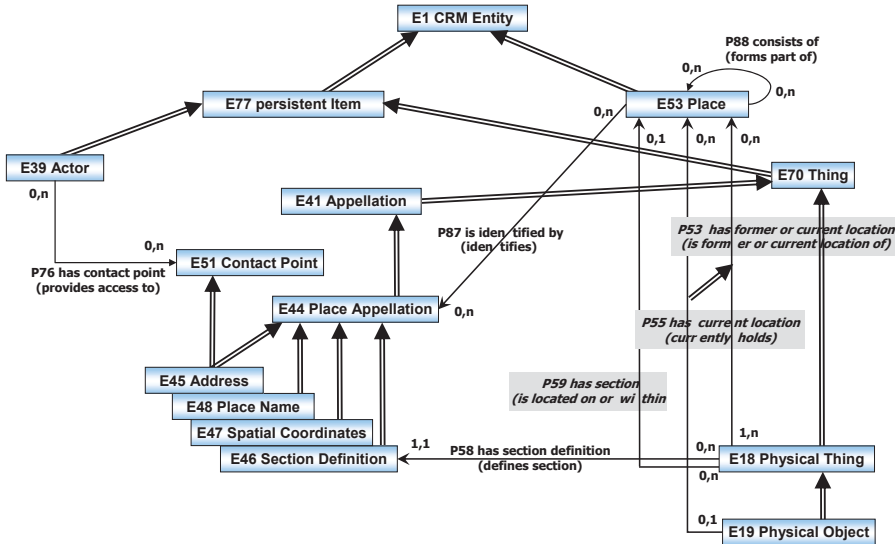# Examples

fig. 2 reasoning about spatial information

The diagram above shows a partial view of the CRM, representing reasoning about spatial information. Five of the main hierarchy branches are included in this view: E39 Actor, E51 Contact Point, E41 Appellation, E53 Place and E70 Thing. All classes are shown as blue-white rectangles. Properties are shown as single arrows. In some cases the order of priority for property names has been reversed in order to facilitate reading the diagram from left to right. Double arrows indicate IsA relations between classes and their subclasses or between properties and their subproperties. 'Shortcuts' are indicated with light grey rectangles and their names are written in italics, such as the P59 has section (is located on or within) between E53 Place and E18 Physical Thing, which is a shortcut of the path through E46 Section Definition. .

As can be seen, an instance of E53 Place *is identified by* an instance of E44 Place Appellation, which may be an instance of E45 Address, E47 Spatial Coordinates, E48 Place Name, or E46 Section Definition such as 'basement', 'prow', or 'lower left-hand corner.' An instance of E53 Place may *consist of* or *form part of* another instance of E53 Place, thereby allowing a hierarchy of geometric 'containers' to be constructed.

An instance of E45 Address can be considered both as an E44 Place Appellation–a way of referring to an E53 Place–and as an E51 Contact Point for an E39 Actor. An E39 Actor may have any number of instances of E51 Contact Point. E18 Physical Thing is found on locations as a consequence of being created there or being moved there. Therefore the properties *P53 has former or current location (is former or current location of) (*and *P55 has current location (currently holds)* are regarded as shortcuts of the fully articulated paths through the respective events. *P55 has current location (currently holds)* is a subproperty of *P53 has former or current location (is former or current location of)*. The latter is a container for location information in the absence of knowledge about time of validity and related events.

An interesting aspect of the model is the *P58 has section definition (defines section)* property between E46 Section Definition and E18 Physical Thing (and the corresponding shortcut from E53 Place to E19 Physical Object). This allows an instance of E53 Place to be defined as a section of an instance of E19 Physical Object. For example, we may know that Nelson fell at a particular spot on the deck of H.M.S. Victory, without knowing the exact position of the vessel in geospatial terms at the time of the fatal shooting of Nelson. Similarly, a signature or inscription can be located "in the lower right corner of" a painting, regardless of where the painting is hanging.