### OLD

### P121 overlaps with

Domain: [E53](#_E53_Place) Place

Range: [E53](#_E53_Place) Place

Quantification: many to many (0,n:0,n)

Scope note: This symmetric property associates an instance of E53 Place with another instance of E53 Place geometrically overlapping it.

It does not specify anything about the shared area. This property is purely spatial, in contrast to the temporal overlaps described by pxxx, pxxy or pxxz, and and, spatio temporal overlaps described by p132 spatiotemporally overlaps with.

Examples:

* the territory of the United States (E53) *overlaps with* the Arctic (E53)
* The maximal extent of the Greek Kingdom (E53) *overlaps with* the maximal extent of the Ottoman Empire(E53)

In First Order Logic:

P121(x,y) ⊃ E53(x)

P121(x,y) ⊃ E53(y)

P121(x,y) ⊃ P121(y,x)

### NEW

### P121 overlaps with

Domain: [E53](#_E53_Place) Place

Range: [E53](#_E53_Place) Place

Quantification: many to many (0,n:0,n)

Scope note: This symmetric property associates an instance of E53 Place with another instance of E53 Place geometrically overlapping it.

It does not specify anything about the shared area. This property is purely spatial. It does not imply that phenomena defining by their extent places related *by P121 overlaps with* covered a common area at the same time or ever coexisted. In contrast spatiotemporal overlaps described by *P132 spatiotemporally overlaps* are the total of areas simultaneously covered by the related spacetime volumes.

Examples:

* the territory of the United States (E53) *overlaps with* the Arctic (E53)
* The maximal extent of the Kingdom of Greece (1832-1973) (E53) *overlaps with* the maximal extent of the Republic of Turkey (29 October 1923 to now) (E53)

In First Order Logic:

P121(x,y) ⊃ E53(x)

P121(x,y) ⊃ E53(y)

P121(x,y) ⊃ P121(y,x)

(The temporal overlap properties have been deprecated. It is P173 starts before or with the end of AND P173i ends after or with the start of . Therefore, there is no confusion of label)

### OLD

### P122 borders with

Domain: [E53](#_E53_Place) Place

Range: [E53](#_E53_Place) Place

Quantification: many to many (0,n:0,n)

Scope note: This symmetric property associates an instance of E53 Place with another instance of E53 Place which shares a part of its borders.

This property is purely spatial, in contrast to time properties, which are purely temporal.

Examples:

* Scotland (E53) *borders with* England (E53)

In First Order Logic:

P122(x,y) ⊃ E53(x)

P122(x,y) ⊃ E53(y)

P122(x,y) ⊃ P122(y,x)

### NEW

### P122 borders with

Domain: [E53](#_E53_Place) Place

Range: [E53](#_E53_Place) Place

Quantification: many to many (0,n:0,n)

Scope note: This symmetric property associates an instance of E53 Place with another instance of E53 Place which shares a part of its borders.

This property is purely spatial. It does not imply that phenomena defining by their extent places related *by P122 borders with* shared a respective border at the same time or ever coexisted. In particular, this may be the case when the respective common border is a natural one.

Examples:

* Scotland (E53) *borders with* England (E53)

In First Order Logic:

P122(x,y) ⊃ E53(x)

P122(x,y) ⊃ E53(y)

P122(x,y) ⊃ P122(y,x)