

# Request for Comments for RDS POI on 09.05.2022

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***Abstract.*** *This document is a Request for Comments (RC) for the Request for Domain Specifications (RDS) on POIs from May 09, 2022.*

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# 1. Introduction

The requested domain specification is about extending schema.org with the POI type as a subtype of Place. Several properties are

In the remainder of the document we provide our suggestions in relation to the requests made in the RDS. We then conclude with a summary and some general remarks.

## 2. Suggestions

This section presents our suggestions according to the requests made for the Point of Interest (POI) Domain Specification. Each subsection contains a suggestion and starts with a quote from the RDS followed by our answer including how the request is recommended to be implemented. Note that there is already a processed submission from the POI Working Group within ODTA that is more comprehensive than this one. Therefore, for the requests that are already covered by this submission, we will refer to the RC created for the RDS for TouristAttractionDS (TouristAttractionDS-16032022).

### 2.1 Request for a new type PointOfInterest

The RDS requests a new type for PointOfInterest as a subtype of Place to represent various points of interest for tourists. Given that the proposed type only reuses the inherited properties from its supertype Place, we recommend to use a Multi Typed Entity (MTE)<sup>1</sup> approach with the types TouristAttraction, Place and LocalBusiness as recommended in TouristAttractionDS-16032022. This way, the subtypes of Place type can be also designated as a TouristAttraction, which is another subtype of Place, if they are touristically relevant. Moreover, the LocalBusiness type can be used in conjunction with those types, if the point of interest also has a commercial operation.

Representation with schema.org

Type
schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness

\* Represents any subtype of schema:Place

### 2.2 Request for a property additionalProperty

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<sup>1</sup> MTE is a usage pattern recommended by schema.org to use multiple types in conjunction. This effectively creates an intersection of those types and allows the usage of properties from all types used in conjunction.

PROPERTY	CARDINALITY	RANGE TYPES
<i>additionalProperty</i>	0 +	<i>PropertyValue</i>

An optional property is requested to be able to specify additional properties for points of interest. Note that additionalProperty on Place allows a very generic mechanism to define property values. The canonical values for certain key-value pairs can be defined by ODTA.

Representation with schema.org

Property	Domain	Range
schema:additionalProperty	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:PropertyValue

## 2.3 Request for a property additionalType

PROPERTY	CARDINALITY	RANGE TYPES
<i>additionalType</i>	0 +	<i>URL</i>

A property for attaching external types to POIs is requested. We already recommended using the additionalType property for some POIs in TouristAttractionDS-16032022. This recommendation can be expanded to all POIs so additional types from sources like DBPedia and Wikidata can be specified.

Representation with schema.org

Property	Domain	Range
schema:additionalType	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:URL

## 2.4 Request for a property address

PROPERTY	CARDINALITY	RANGE TYPES
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<i>address</i>	<i>0 - 1</i>	<i>PostalAddress Text</i>
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A property for specifying the address of point of interests is requested. The address property of Place can be used for this purpose. A POI can have at most one address value.

Representation with schema.org

Property	Domain	Range
schema:address	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:PostalAddress

## 2.5 Request for a property description

<i>PROPERTY</i>	<i>CARDINALITY</i>	<i>RANGE TYPES</i>
<i>description</i>	<i>0 +</i>	<i>Localized Text</i>

A property for specifying descriptions of a point of interest is requested. The proposed description property of schema.org can be used for this purpose. Note that the description values can be in multiple languages which means the usage of RDF language-tagged strings<sup>2</sup> is advised when generating data according to this DS.

Representation with schema.org

Property	Domain	Range
schema:description	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:Text

## 2.6 Request for a property event

<i>PROPERTY</i>	<i>CARDINALITY</i>	<i>RANGE TYPES</i>
<i>event</i>	<i>0 - 1</i>	<i>Event</i>

<sup>2</sup> <https://www.w3.org/TR/rdf11-concepts/#section-Graph-Literal>

A property for specifying the events taking place at a point of interest is requested. The proposed event property of schema.org can be used for this purpose. Note that there is already an EventDS request made by ODTA and this EventDS may be used for the range of this property. This point must be discussed within ODTA. In the RDS the event property is requested to have at most one value, however we do not see the reason for that.

Representation with schema.org

Property	Domain	Range
schema:event	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:Event

## 2.7 Request for a property faxNumber

PROPERTY	CARDINALITY	RANGE TYPES
<i>faxNumber</i>	0 +	Text

A property for specifying the fax number of points of interest is requested. The faxNumber of Place can be used for this purpose.

Representation with schema.org

Property	Domain	Range
schema:faxNumber	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:Text

## 2.8 Request for a property geo

PROPERTY	CARDINALITY	RANGE TYPES
<i>geo</i>	0 - 1	<a href="#">GeoCoordinates</a> <a href="#">GeoShape</a>

A property for specifying the geo coordinates of a POI is requested. The proposed geo property of schema.org can be used for this purpose. The RDS specifies that a POI can have a maximum one pair of geo coordinates.

## Representation with schema.org

Property	Domain	Range
schema:geo	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:GeoCoordinates

## 2.9 Request for a property hasMap

PROPERTY	CARDINALITY	RANGE TYPES
<i>hasMap</i>	0 - 1	URL

A property for specifying the URL for a map of a POI is requested. The proposed hasMap property of schema.org can be used for this purpose. A POI can have at most one hasMap value.

## Representation with schema.org

Property	Domain	Range
schema:hasMap	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:URL

## 2.10 Request for a property identifier

PROPERTY	CARDINALITY	RANGE TYPES
<i>identifier</i>	0 +	Text URL

A property for specifying a custom identifier for a POI is requested. The proposed identifier property of schema.org can be used for this purpose.

## Representation with schema.org

Property	Domain	Range
schema:identifier	schema:TouristAttraction AND schema:Place* AND	schema:Text OR schema:URL



	schema:LocalBusiness	
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## 2.11 Request for a property image

PROPERTY	CARDINALITY	RANGE TYPES
<i>image</i>	0 +	URL ImageObject

A property for specifying images of a POI is requested. The proposed image property of schema.org can be used for this purpose.

Representation with schema.org

Property	Domain	Range
schema:image	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:ImageObject OR schema:URL

## 2.12 Request for a property isAccessibleForFree

PROPERTY	CARDINALITY	RANGE TYPES
<i>isAccessibleForFree</i>	0 - 1	Boolean

A property for specifying whether a POI is accessible for free is requested. The Place type of schema.org provides the isAccessibleForFree property. A POI can have at most one value for this property.

Representation with schema.org

Property	Domain	Range
schema:isAccessibleForFree	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:Boolean

## 2.13 Request for a property maximumAttendeeCapacity

PROPERTY	CARDINALITY	RANGE TYPES
<i>maximumAttendeeCapacity</i>	<i>0 - 1</i>	<i>Integer</i>

A property for specifying the maximum attendee capacity of a POI is requested. The proposed maximumAttendeeCapacity property of schema.org can be used for this purpose. The property can have at most one value.

Representation with schema.org

Property	Domain	Range
schema:maximumAttendeeCapacity	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:Integer

## 2.14 Request for a property name

PROPERTY	CARDINALITY	RANGE TYPES
<i>name</i>	<i>1 +</i>	<i>Localized Text</i>

A property for specifying names of a POI is requested. The proposed name property of schema.org can be used for this purpose. Note that the name values can be in multiple languages which means the usage of RDF language-tagged strings<sup>3</sup> is advised when generating data according to this DS. A POI must have at least one name.

Representation with schema.org

Property	Domain	Range
schema:name	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:Text

<sup>3</sup> <https://www.w3.org/TR/rdf11-concepts/#section-Graph-Literal>

## 2.15 Request for a property openingHoursSpecification

<i>PROPERTY</i>	<i>CARDINALITY</i>	<i>RANGE TYPES</i>
<i>openingHoursSpecification</i>	<i>0 +</i>	<i>OpeningHoursSpecification</i>

A property for specifying the opening hours of a POI is requested. The proposed openingHoursSpecification property of schema.org can be used for this purpose.

Representation with schema.org

<b>Property</b>	<b>Domain</b>	<b>Range</b>
schema:openingHoursSpecification	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:OpeningHoursSpecification

## 2.16 Request for a property publicAccess

<i>PROPERTY</i>	<i>CARDINALITY</i>	<i>RANGE TYPES</i>
<i>publicAccess</i>	<i>0 - 1</i>	<i>Boolean</i>

A property for specifying whether the POI is open to public access is requested. The proposed publicAccess property of schema.org can be used for this purpose. The property can have at most one value.

Representation with schema.org

<b>Property</b>	<b>Domain</b>	<b>Range</b>
schema:publicAccess	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:Boolean

## 2.17 Request for a property sameAs

<i>PROPERTY</i>	<i>CARDINALITY</i>	<i>RANGE TYPES</i>
<i>sameAs</i>	<i>0 - 1</i>	<i>URL</i>

A property for specifying the duplicate instances of a POI instance is requested. The proposed sameAs property of schema.org can be used for this purpose. In the RDS the sameAs property is requested to have at most one value, however we do not see the reason for that.

#### Representation with schema.org

<b>Property</b>	<b>Domain</b>	<b>Range</b>
schema:sameAs	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:URL

## 2.18 Request for a property sdLicense

<i>PROPERTY</i>	<i>CARDINALITY</i>	<i>RANGE TYPES</i>
<i>sdLicense</i>	<i>0 +</i>	<i>URL</i> <i>CreativeWork</i>

A property for specifying the license of an instance is requested. This request is not relevant only for the POI instances but for all instances. The property provides a straightforward way to attach licenses at instance level. Schema.org defines an sdLicense property only on CreativeWork type, but the RDS wants to extend the domain of this property to Thing. We take on this proposal. See the LodgingBusinessDS RC for potential values of this property from the CreativeCommons licenses.

#### Extension to schema.org

<b>Property</b>	<b>Domain</b>	<b>Range</b>
schema:sdLicense	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:URL OR schema:CreativeWork

## 2.19 Request for a property smokingAllowed

<i>PROPERTY</i>	<i>CARDINALITY</i>	<i>RANGE TYPES</i>
<i>smokingAllowed</i>	<i>0 - 1</i>	<i>Boolean</i>

A property for specifying whether smoking is allowed in a POI is requested. The proposed smokingAllowed property of schema.org can be used for this purpose. The property can have at most one value.

Representation with schema.org

<b>Property</b>	<b>Domain</b>	<b>Range</b>
schema:smokingAllowed	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:Boolean

## 2.20 Request for a property telephone

<i>PROPERTY</i>	<i>CARDINALITY</i>	<i>RANGE TYPES</i>
<i>telephone</i>	<i>0 +</i>	<i>Text</i>

A property for specifying the telephone number of a POI is requested. The proposed telephone property of schema.org can be used for this purpose.

Representation with schema.org

<b>Property</b>	<b>Domain</b>	<b>Range</b>
schema:telephone	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:Text

## 2.21 Request for a property url

<i>PROPERTY</i>	<i>CARDINALITY</i>	<i>RANGE TYPES</i>
<i>url</i>	<i>0 - 1</i>	<i>URL</i>

A property for specifying the url of a page that represents a POI is requested. The url property of schema.org can be used for this purpose. Note that a URI for a specific instance should be defined by the means of RDF (e.g., @id property of JSON-LD). In the RDS the url property is requested to have at most one value, however we do not see the reason for that.

#### Representation with schema.org

Property	Domain	Range
schema:url	schema:TouristAttraction AND schema:Place* AND schema:LocalBusiness	schema:URL

### 3. Conclusion

In this Request for Comments, we provided our suggestions for building a domain specification for POIs. This RDS is mostly complementary to the one submitted before (TouristAttractionDS-16032022). We were able to take on most of the requests directly, as they were already conveniently mapped to schema.org. However we recommend not to introduce a new type of POIs but use the MTE principle to use TouristAttraction and other subtypes of Place in conjunction.

The DS must be discussed within the ODTA in the next stage on GitHub.

# Request for Domain Specification (RDS)

<b>Title:</b>	<b>Point of Interest</b>
<b>Last Modification Date:</b>	<b>9.5.2022</b>
<b>Authors</b>	<i>Elias Kärle (Onlim)</i>
<b>URI</b>	<a href="https://semantify.it/ds/sloejGAwT">https://semantify.it/ds/sloejGAwT</a>

## Abstract

In this RDS we propose a Domain Specification (DS) for **points of interest (POIs)**, based on **schema.org/Place** or **odta:PointOfInterest** respectively, as used in the GNTB's "Knowledge Graph für den Deutschlandtourismus" project. The DS holds all properties required to annotate a POI sufficiently using the vocabulary of schema.org and the extension of **odta:PointOfInterest**. To annotate the type of license applied to the data set, we suggest additionally modifying the original schema.org vocabulary.

## 1. What is the topic that should be discussed

*Explain what the requested domain specification is about (1-4 pages)*

The DS presented in this RDS is about **points of interest** (<https://semantify.it/ds/sloejGAwT>) which are used in the GNTB's "Knowledge Graph für den Deutschlandtourismus" project. Hereby, we want to promote the properties, their cardinalities and their proposed ranges to be accepted by the ODTA to reach a broader audience and to enable a more streamlined data exchange process.

## 2. Why is this topic important for a broader audience

*Explain why this topic is important for ODTA members and beyond (1-4 pages)*

This topic is important because **points of interest** are amongst the most important data types used in touristic data exchange.

## 3. (Optional) How can/cannot this issue be represented in schema.org

*Give a few examples of schema.org types and properties that can be used for the domain specification you are requesting. Additionally, you can give some examples of what cannot be expressed with the current schema.org vocabulary (1-4 pages)*

The **point of interest** itself can not solely be represented in pure schema.org. Therefore we propose an extension to schema:Place. Additionally, to allow annotating a license, we propose to extend schema.org (see section 4).

A table of the proposed schema.org properties and their ranges can be found in the table below:

PROPERTY	CARDINALITY	RANGE TYPES
name	1 +	Localized Text
description	0 +	Localized Text
address	0 - 1	<a href="#">PostalAddress</a>
geo	0 - 1	<a href="#">GeoCoordinates</a>
hasMap	0 - 1	URL
image	0 +	URL ImageObject
openingHoursSpecification	0 +	<a href="#">OpeningHoursSpecification</a>
url	0 - 1	URL
sameAs	0 - 1	URL
event	0 - 1	<a href="#">Event</a>
additionalProperty	0 +	<a href="#">PropertyValue</a>
isAccessibleForFree	0 - 1	Boolean
publicAccess	0 - 1	Boolean
smokingAllowed	0 - 1	Boolean
maximumAttendeeCapacity	0 - 1	Integer
identifier	0 +	Text URL
telephone	0 +	Text
additionalType	0 +	URL
faxNumber	0 +	Text
sdLicense	0 +	URL CreativeWork

Table 1: First-level properties of the proposed DS.

## 4. (Optional) How should schema.org be extended if necessary

*Give a few examples of how schema.org should be extended (i.e., introducing which new types and properties) to cover your needs (1-4 pages)*

To allow the annotation of a license, we propose to extend schema.org in a way that schema:sdLicense's domain is generalized to schema:Thing (see Listing 1).

```
<https://schema.org/sdLicense> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>
<http://www.w3.org/1999/02/22-rdf-syntax-ns#Property> .
```



```

<https://schema.org/sdLicense> <http://www.w3.org/2000/01/rdf-schema#comment> "This term
is proposed for full integration into Schema.org, pending implementation feedback and adoption
from applications and websites."@en .
<https://schema.org/sdLicense> <http://www.w3.org/2000/01/rdf-schema#label>
"sdLicense"@en .
<https://schema.org/sdLicense> <https://schema.org/domainIncludes>
<https://schema.org/Thing> .
<https://schema.org/sdLicense> <https://schema.org/rangeIncludes>
<https://schema.org/CreativeWork> .
<https://schema.org/sdLicense> <https://schema.org/rangeIncludes> <https://schema.org/URL> .

```

*Listing 1: Changing schema:sdLicense's domain to schema:Thing (N-Triples Syntax).*

The extension to annotated POI-related information introduces no new properties. The extension in N-Triple syntax can be found in Listing 2.

```

<https://odta.io/voc/PointOfInterest> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>
<http://www.w3.org/2000/01/rdf-schema#Class> .
<https://odta.io/voc/PointOfInterest> <http://www.w3.org/2000/01/rdf-schema#comment>
"Every place that is of potential interest for anyone - mostly tourists. It is more than
schema:TouristAttraction, because an ATM is a POI, but not a tourist attraction. Same goes for
public toilets and alike."@en .
<https://odta.io/voc/PointOfInterest> <http://www.w3.org/2000/01/rdf-schema#label>
"PointOfInterest"@en .
<https://odta.io/voc/PointOfInterest> <http://www.w3.org/2000/01/rdf-schema#subClassOf>
<https://schema.org/Place> .

```

*Listing 2: schema:Place's extension odta:PointOfInterest in N-Triples Syntax.*

For an example of how a **point of interest** including a CC-0 license can be annotated see Listing 3:

```

{
  "@context": {
    "rdfs": "http://www.w3.org/2000/01/rdf-schema#",
    "rdf": "http://www.w3.org/1999/02/22-rdf-syntax-ns#",
    "schema": "https://schema.org/",
    "xsd": "http://www.w3.org/2001/XMLSchema#",
    "odta": "https://odta.io/voc/",
    "ds": "https://vocab.sti2.at/ds/"
  },
  "@graph": [
    {
      "@type": [
        "odta:PointOfInterest"
      ],
      "schema:name": [
        {
          "@language": "de",
          "@value": "Talblick"
        }
      ]
    }
  ],

```

```

"schema:description": [
  {
    "@language": "de",
    "@value": "Ein wunderschöner Ausblickspunkt."
  }
],
"schema:sdLicense": [
  {
    "@type": "schema:URL",
    "@value": "https://creativecommons.org/publicdomain/zero/1.0/"
  }
],
"ds:compliesWith": {
  "@id": "https://semantify.it/ds/sloejGAwT"
}
}
]
}

```

*Listing 3: A trail validly annotated according to the proposed DS under consideration of the new schema:sdLicense property and the odta:Trail properties.*