Services for schema.org (DRAFT)

by Google.org Civic Team

This document is a proposal by the Google.org Social Impact tem for some extensions of Schema.org schemas to better support the description of public civic services.

Context

We want to provide better query results to our users when they ask questions related to government services. In order to import data in the Knowledge Graph, we are in discussion with cities to have tprohem tag their content with microdata. For this purpose, we are looking at extending schema.org with new types to describe government services.

Design principles
- keep it simple
- less is more (easy to add stuff; hard to remove because of backward compatibility)
- reuse existing components

- prefer text enumeration for types over new types, for easier maintenance

Schema

Thing > Intangible > Service

A service provided by an organization, e.g. delivery service, print services, etc.

Property	Expected Type	Description	Comments
name	Text	Name of Service	inherited from Thing
alternateName	Text	alternate names for the service	e.g SNAP is the official name of food stamps.
serviceArea	Thing > Place > AdministrativeArea	The geographic area where the service is provided.	
provider	Thing > Organization	The organization or agency that is providing the service.	
operator	Thing > Organization	The operating organization, if different from the provider. This enables the representation of services that are provided by an organization, but operated by another organization like a subcontractor.	
serviceType	Thing > Intangible > ServiceType	The set of types that describe the nature of the service.	repeated
audience	Thing > Intangible > Audience	The audience eligible for the service	repeated
serviceChannel	Thing > Intangible > ServiceChannel	A channel through which the service can be accessed.	
aggregateRating	Thing > Intangible > Rating > AggregateRating	The overall rating, based on a number of reviews or ratings	
review	Thing > CreativeWork > Review	A single review of the service	
produces	Thing	The tangible thing generated by the service, e.g. a passport, permit, etc.	

Thing > Intangible > Service > GovernmentService

This type describes a government service, e.g. food stamps.

Thing > Intangible > ServiceType

Similar to Thing > MedicalEntity > MedicalIntangible > MedicalCode, allows for specifying a type and a taxonomy.

Property	Expected Type	Description	Comments
serviceType	enumeration as text	The set of types that describe the nature of the service	
serviceTypeTaxonomy	enumeration as text	The identifier for the taxonomy used to describe the service type.	

Thing > Intangible > ServiceChannel

A channel where a service can be accessed.

Property	Expected Type	Description	Comments
provides	Thing > Intangible > Service	The service this channel provides	
availableLanguage	Thing > Intangible > Language	The set of languages used to offer the service.	repeated
processingTime	Thing > Intangible > Quantity > Duration	Estimated processing time using this channel.	
audience	Thing > Intangible > Audience	The set of people or organizations served by this service channel.	
serviceUrl	URL	The URL that the service can be accessed from.	
servicePostalAddress	Thing > Intangible > StructuredValue > ContactPoint > PostalAddress	The address that the service can be accessed from. For use when accessing the service by mail.	
serviceLocation	Thing > Place	The location (e.g. civic structure, local business, etc.) where a person can go to access the service.	
servicePhone	Thing > Intangible > StructuredValue > ContactPoint	The phone number where the service can be addressed.	
serviceSmsNumber	Thing > Intangible > StructedValue > ContactPoint	A SMS number where the service can be accessed.	

Example Markup

```
<div itemscope itemtype="http://schema.org/GovernmentService">
  <link itemprop="url" href="http://on.nyc.gov/fsep" />
  <span itemprop="name"> NYC Food Service Establishment Permit Service</span>
```

```
<div itemprop="serviceArea" itemscope itemtype="http://schema.org/AdministrativeArea">
    <span itemprop="name">New York</span>
</div>
<div itemprop="provider"> itemscope itemtype="http://schema.org/GovernmentOrganization">
    <span itemprop="name">Department of Health and Mental Hygiene"</span>
</div>
<div itemprop="audience" itemscope itemtype="http://schema.org/BusinessAudience">
    <span itemprop="audienceType">FoodEstablishment</span>
</div>
<div itemprop="serviceChannel" itemscope itemtype="http://schema.org/ServiceChannel">
    <span itemprop="name">NYC Food Service Web Channel</span>
    <link itemprop="serviceUrl" href="https://a858-elpaca.nyc.gov/CitizenAccess/" />
</div>
<div itemprop="serviceChannel" itemscope itemtype="http://schema.org/ServiceChannel">
    <span itemprop="name">NYC Food Service Physical Channel</span>
    <div itemprop="serviceLocation" itemscope itemtype="http://schema.org/GovernmentBuilding">
        <span itemprop="name">DCA Citywide Licensing Center</span>
        <div itemprop="address" itemscope itemtype="http://schema.org/PostalAddress">
            <span itemprop="streetAddress">42 Broadway</span>
            <span itemprop="addressLocality">New York</span>
            <span itemprop="addressRegion">NY</span>
            <span itemprop="postalCode">10004</span>
        </div>
        <time itemprop="openingHours" datetime="M,T,Th,Fr 09:00-17:00">Mondays, Tuesdays,
Thursdays, and Fridays 9am-5pm</time>
        <time itemprop="openingHours" datetime="W 08:30-17:00">Wednesdays 8:30am-5pm</time>
    </div>
  </div>
</div>
```

Thing > Intangible > Permit

This describes a permit, issued by an organization. This is an abstract type.

Property	Expected Type	Description	Comments
issuedThrough	Thing > Intangible > Service	the service offering the permit	
validIn	Thing > Place > AdministrativeArea	the geographic area where the permit is valid	
validFor	Thing > Intangible > Quantity > Duration	the time validity of the permit	
validUntil	Date	The date when the permit is no longer valid.	
audience	Thing > Intangible > Audience	the audience for this permit	

Example Markup

```
<div itemscope itemtype="http://schema.org/GovernmentPermit">
   <span itemprop="name"> NYC Food Service Establishment Permit</span>
   <div itemprop="issuedBy"> itemscope itemtype="http://schema.org/GovernmentOrganization">
      <span itemprop="name">Department of Health and Mental Hygiene"</span>
   </div>
   <div itemprop="issuedThrough" itemscope itemtype="http://schema.org/GovernmentService">
      <span itemprop="name">NYC Food Service Establishment Permit Service</span>
   <div itemprop="audience" itemscope itemtype="http://schema.org/BusinessAudience">
      <span itemprop="audienceType">FoodEstablishment</span>
   </div>
   <div itemprop="validIn" itemscope itemtype="http://schema.org/AdministrativeArea">
      <span itemprop="name">New York</span>
   </div>
   <time itemprop="validFor" datetime="P1Y">1 year</time>
   <span itemprop="isRequiredByLaw">True</span>
      <div itemprop="audience" itemscope itemtype="http://schema.org/BusinessAudience">
      <span itemprop="audienceType">FoodEstablishment</span>
   </div>
</div>
```

name	NYC Food Service Establishment Permit
issedBy	GovernmentOrganization : Department of Health and Mental Hygiene
issuedThrough	PublicService : NYC Food Service Establishment Permit Service
validIn	City : New York City
validFor	Duration : 1 year
isRequiredByLaw	true
audience	BusinessAudience : FoodEstablishmentAudience

Thing > Intangible > Permit > GovernmentPermit

Property	Expected Type	Description	Comments
issuedBy	Thing > Organization > GovernmentOrganization	the government organization issuing the permit.	
isRequiredByLaw	bool		

Thing > Intangible > Permit > GovernmentPermit > CivicPermit

This is a permit for an individual, e.g. driver's license.

Property	Expected Type	Description	Comments

Thing > Intangible > Permit > GovernmentPermit > BusinessPermit

This is a permit for a business entity, e.g. liquor license.

Property	Expected Type	Description	Comments

Thing > Intangible > Audience > PeopleAudience

Add the following properties to the existing type.

Property	Expected Type	Description	Comments
requiredMaxAge	Number	The person can be no older than this age	
requiredMinAge	Number	The person must be at least this age	
requiredGender	Text	For services restricted to members of a particular gender	

Thing > Intangible > Audience > PeopleAudience > CivicAudience

This describes the "people" audience for a given service.

Property	Expected Type	Description	Comments
geographicArea	AdministrativeArea	The geographic area the audience needs to belong to in order to access the service.	
audienceType	enumeration as text	An audience type that is targeted or a restriction for a civic service e.g. Veteran or Car Owner.	

Thing > Intangible > Audience > BusinessAudience

This is describes a property of a given business, to be used for permits, benefits, etc.

Property	Expected Type	Description	Comments
numberOfEmployees	QuantitativeValue	the size of business by number of employees	
yearsInOperation	QuantitativeValue	the age of the business	
yearlyRevenue	QuantitativeValue	the revenue size of the business	
geographicArea	AdministrativeArea	The geographic area the audience needs to belong to in order to access the service.	
audienceType	enumeration as text	An business audience type that is targeted or a restriction for a public service.	

Further Examples

NYC Food Service Establishment Permit

http://on.nyc.gov/fsep

Description
From the web page:

A Food Service Establishment is a place where food is provided for individual portion service directly to the consumer, whether the food is provided free of charge or sold, and whether the food is consumed on or off the premises. This includes restaurants, employee cafeterias, bakeries, takeouts, pizzerias, night clubs, cabarets, bars, senior centers, emergency food relief organizations, public and non-public schools, or religious, fraternal and charitable organizations. Such establishments are required to obtain a permit from the Department of Health and Mental Hygiene (DOHMH)

Schema
BusinessPermit : NYC Food Service Establishment Permit

name	NYC Food Service Establishment Permit
issedBy	GovernmentOrganization : Department of Health and Mental Hygiene
issuedThrough	GovernmentService : NYC Food Service Establishment Permit Service
validIn	City : New York City
validFor	Duration : 1 year
isRequiredByLaw	true
audience	BusinessAudience : FoodEstablishmentAudience

BusinessAudience : FoodEstablishmentAudience

audience	"FoodEstablishment"

GovernmentService : NYC Food Service Establishment Permit Service

url	http://on.nyc.gov/fsep
serviceArea	City : New York City
provider	GovernmentOrganization : Department of Health and Mental Hygiene
serviceChannel	ServiceChannel : NYC Food Service Web Channel
serviceChannel	ServiceChannel : NYC Food Service Physical Location Channel

ServiceChannel : NYC Food Service Web Channel

serviceUrl	https://a858-elpaca.nyc.gov/CitizenAccess/

ServiceChannel : NYC Food Service Physical Location Channel

location	GovernmentBuilding : DCA Citywide Licensing Center

GovernmentBuilding : DCA Citywide Licensing Center

address	42 Broadway New York, NY 10004
openingHoursSpecification	M, Tu, Th, Fr: 9 am - 5 pm W: 8:30 am - 5 pm

Chicago Vehicle Sticker

http://chicityclerk.com/city-stickers-parking/

Description

Schema

GovernmentPermit : Chicago City Vehicle Sticker

issuedBy	GovernmentOrganization : Chicago Office of the City Clerk
issuedThrough	GovernmentService : Chicago City Vehicle Sticker Service
validIn	City : Chicago
validUntil	2014-06-30
isRequiredByLaw	true
audience	CivicAudience : CarOwners

CivicAudience : Car Owners

targetedAudienceType	"CarOwners"

PublicService : Chicago City Vehicle Sticker Service

serviceArea	City : Chicago
provider	GovernmentOrganization : Chicago Office of the City Clerk
serviceType	Text : VehicleSticker
audience	CivicAudience : CarOwners
serviceChannel	ServiceChannel : Chicago City Vehicle Sticker Serivce on EZ Buy
serviceChannel	ServiceChannel : Chicago City Vehicle Sticker Store Locator

ServiceChannel : Chicago City Vehicle Sticker Serivce on EZ Buy

serviceUrl	https://webapps.cityofchicago.org/ezbuy/

ServiceChannel : Chicago City Vehicle Sticker Store Locator

url	http://chicityclerk.com/locator/