

WEB MAPS FOR REAL-WORLD ACCESSIBILITY

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Monday, Sep 28, 2020

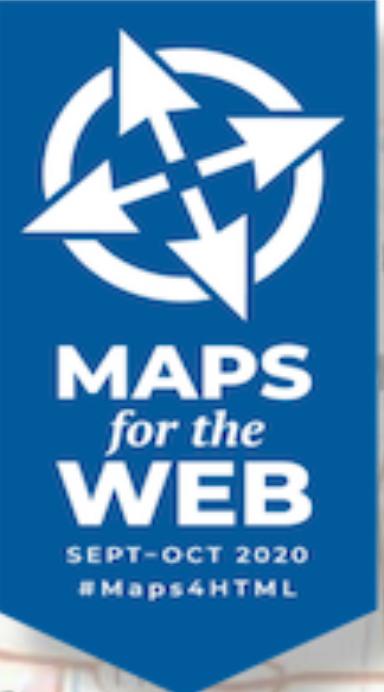
W3C/OGC Joint Workshop Series on Maps for the Web

w3.org/2020/maps/

Can I get in?

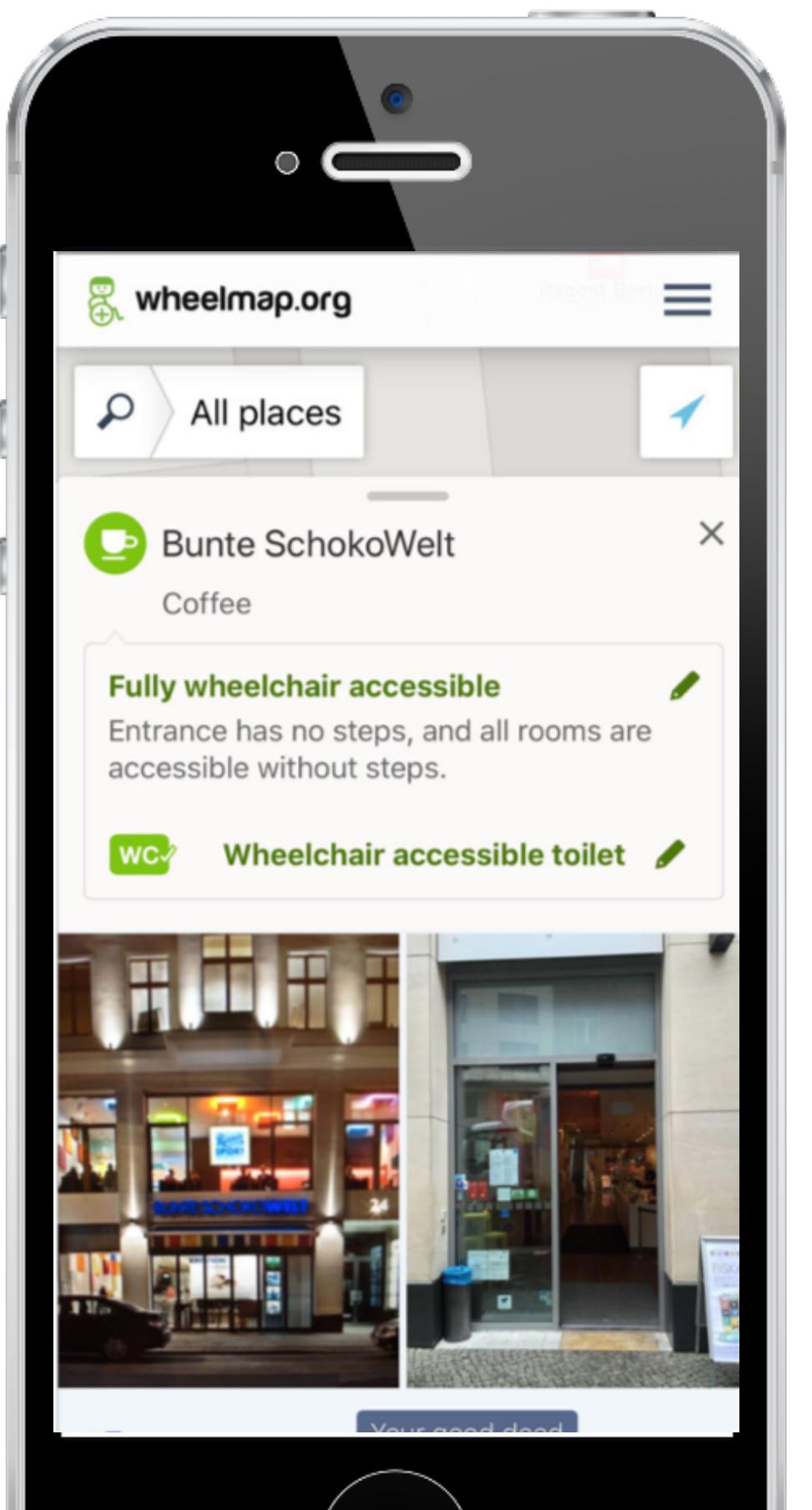
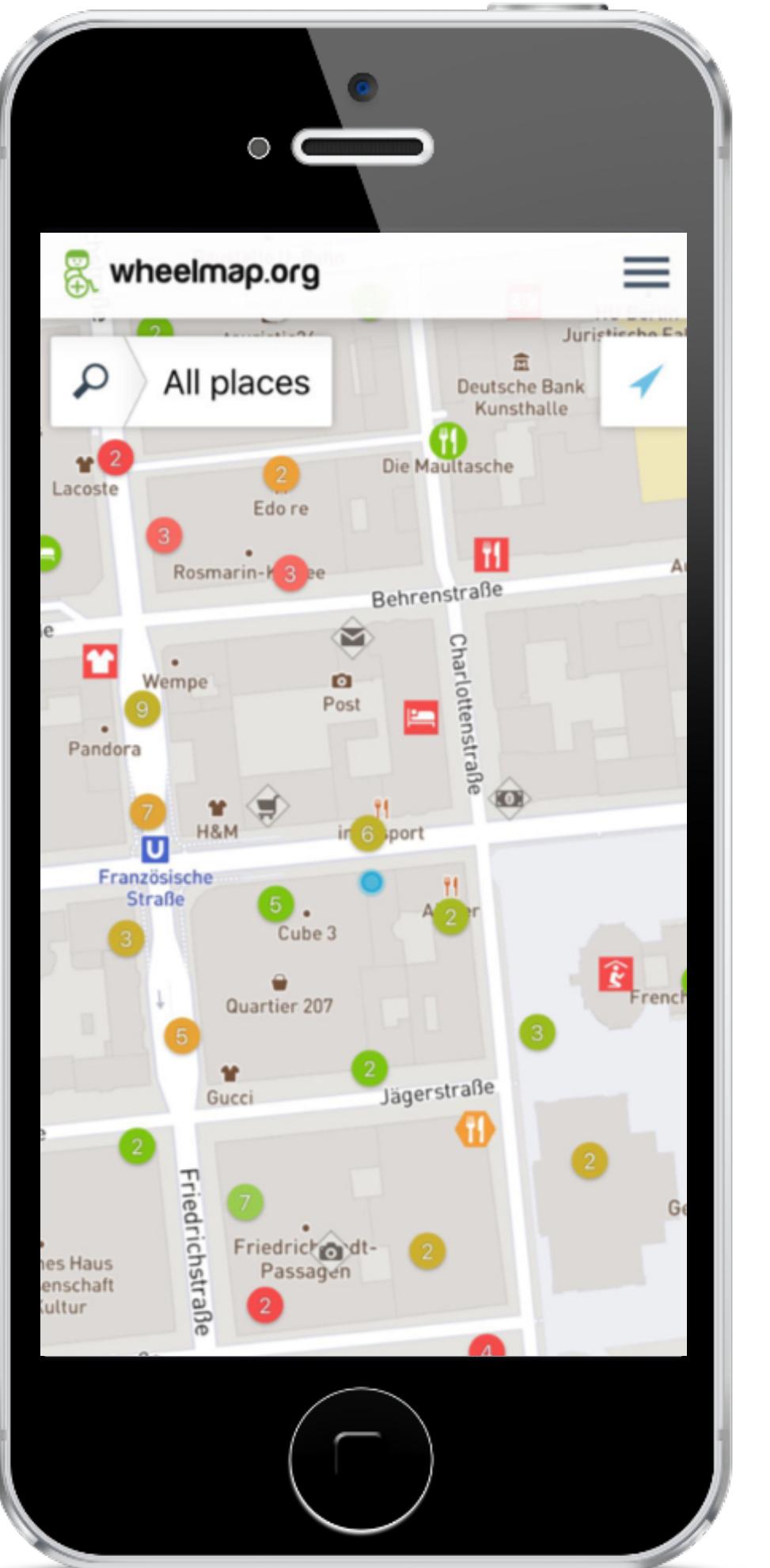


Example: Many places have steps at the entrance, which is a barrier for wheelchair users.

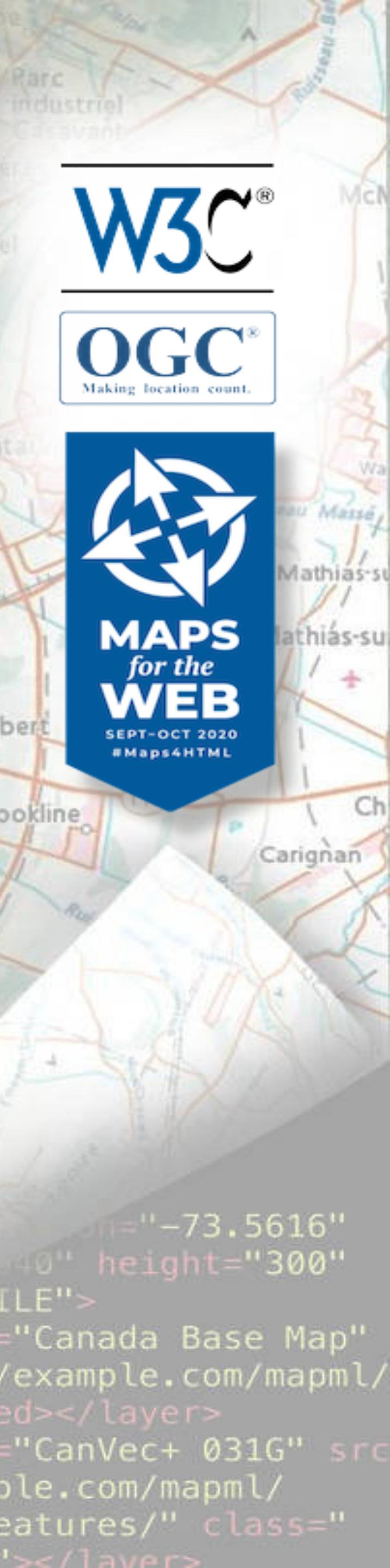


l="-73.5616"
40" height="300"
TILE">
l="Canada Base Map"
//example.com/mapml/
ked></layer>
l="CanVec+ 031G" src="http://example.com/mapml/
features/" class="map-layer"></layer>

Wheelmap.org - find accessible places



3



"Traffic lights" system

How wheelchair accessible is a place?



Fully



Partially

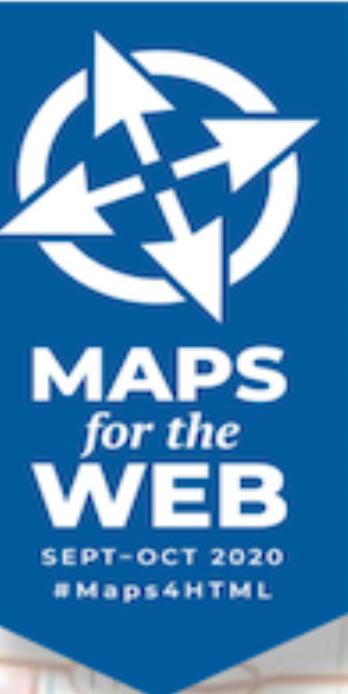


Not at all



Available in 32 languages

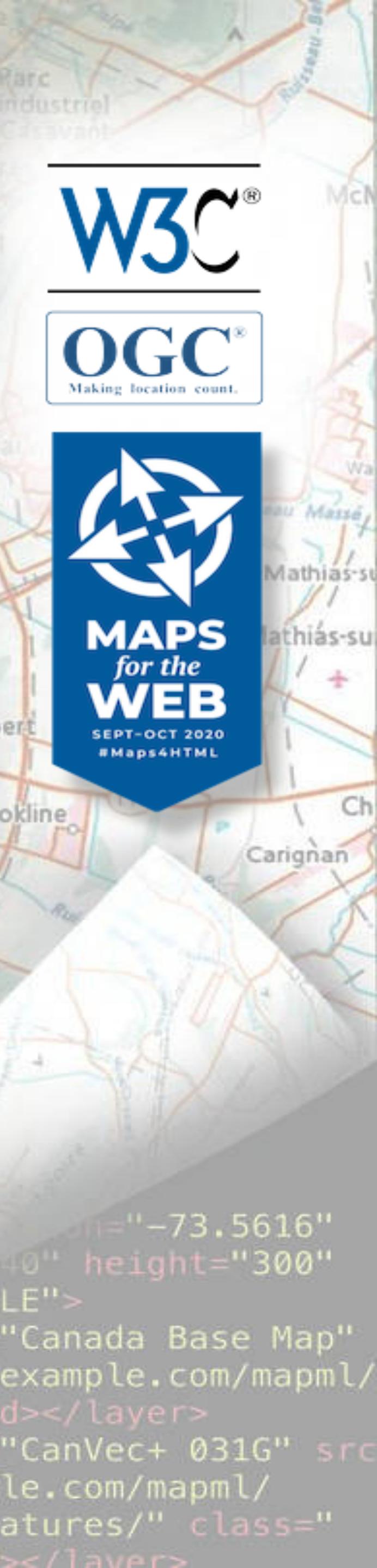
Arabic	English	Italian	
Bulgarian	Finnish	Japanese	Russian
Chinese (Taiwan)	French	Korean	Slovak
Chinese (Traditional)	German	Norwegian	Spanish
Chinese (Simple)	Greek	Polish	Swedish
Czech	Hebrew	Portuguese	Turkish
Danish	Hindi	Portuguese (Brasilian)	Ukrainian
Dutch	Hungarian	Romanian	Vietnamese



Based on OpenStreetMap.

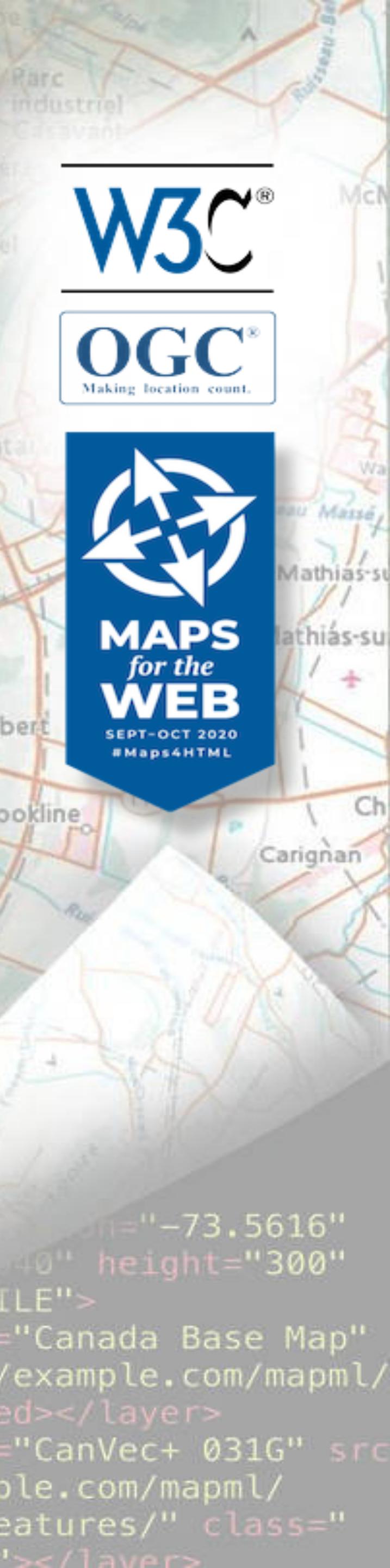


{ 6 }



Around one million OSM-based places.

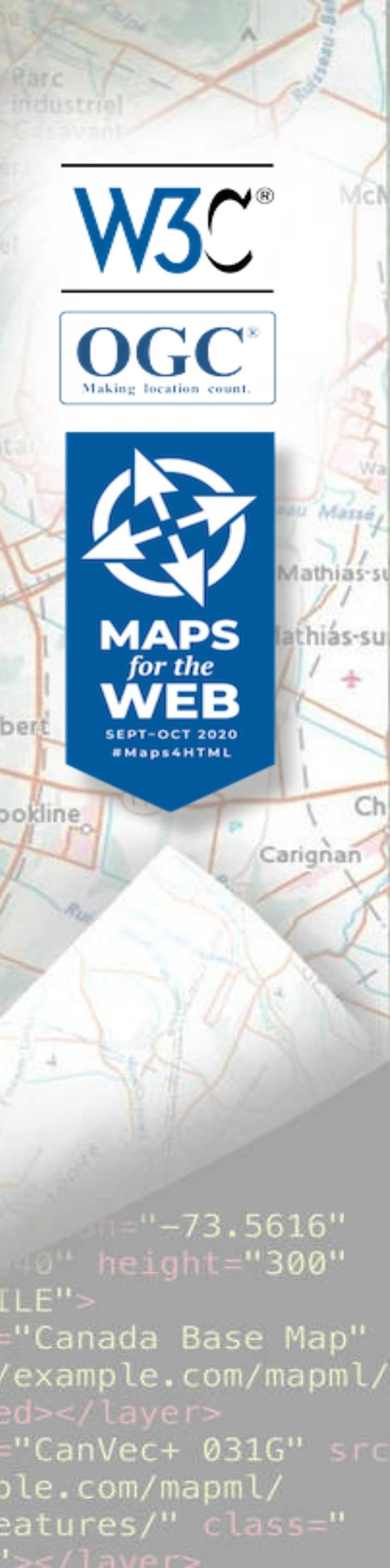
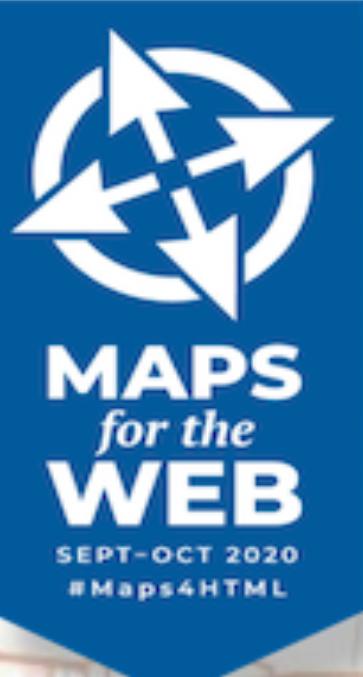
Marked as fully, partially, or not wheelchair-accessible by users



Does this mean equal participation?

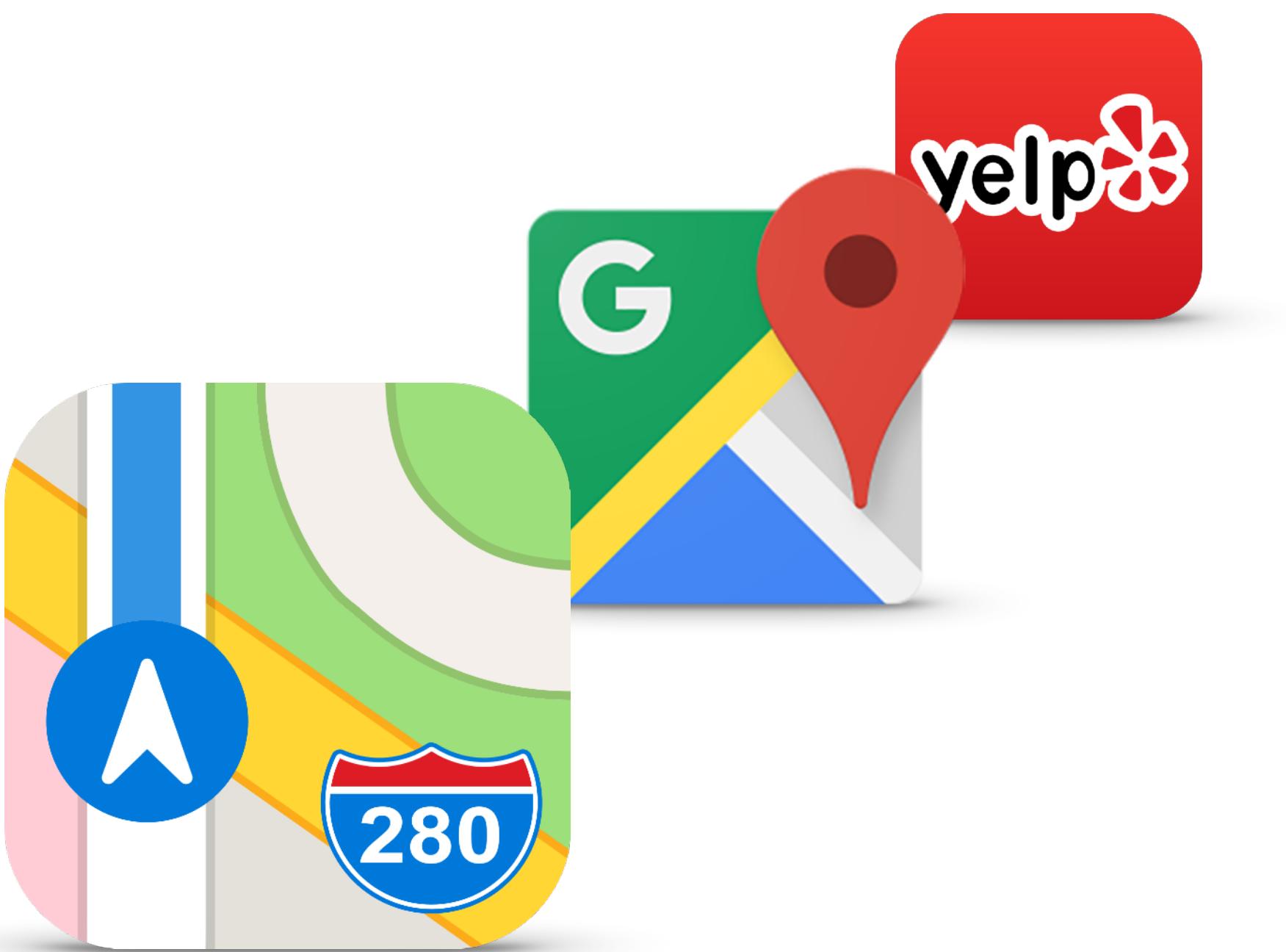


{ 8 }

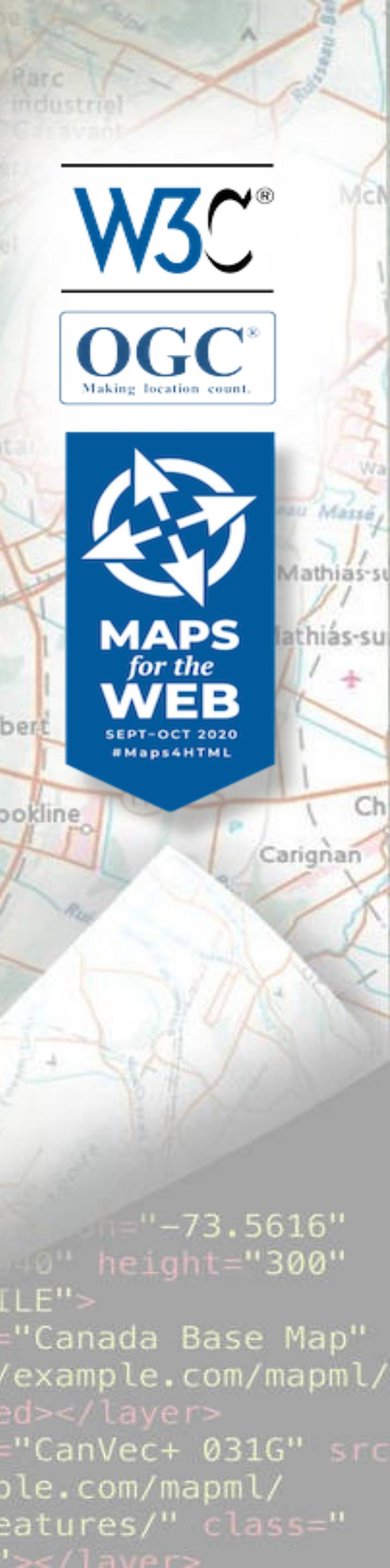


No.

We need disability mainstreaming:
All accessibility information should be available everywhere.



{ 9 }

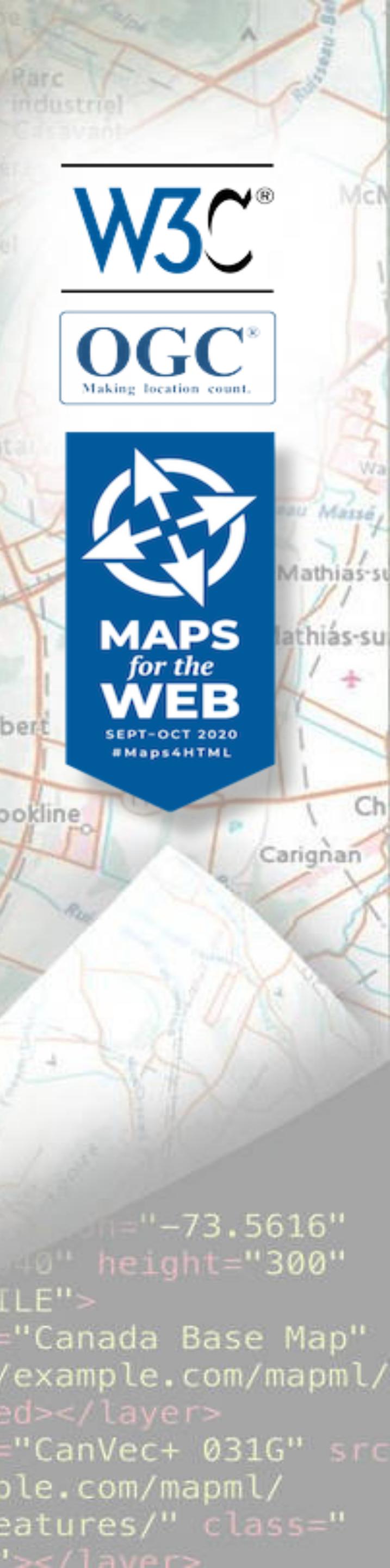


Maps4Web as disability mainstreaming?

Could we use Maps4Web specs to make accessibility information available everywhere?

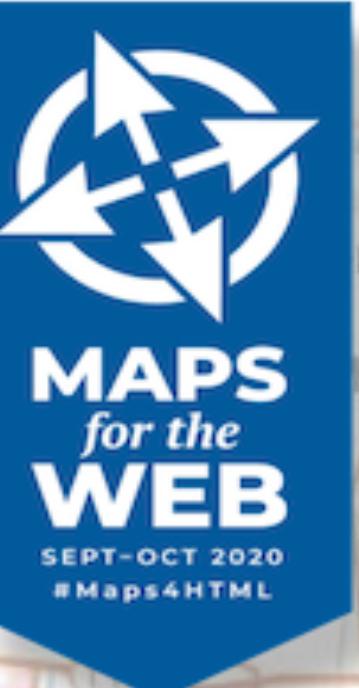


{ 10 }



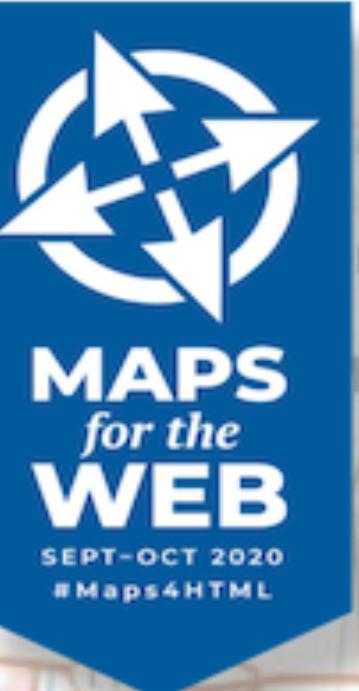
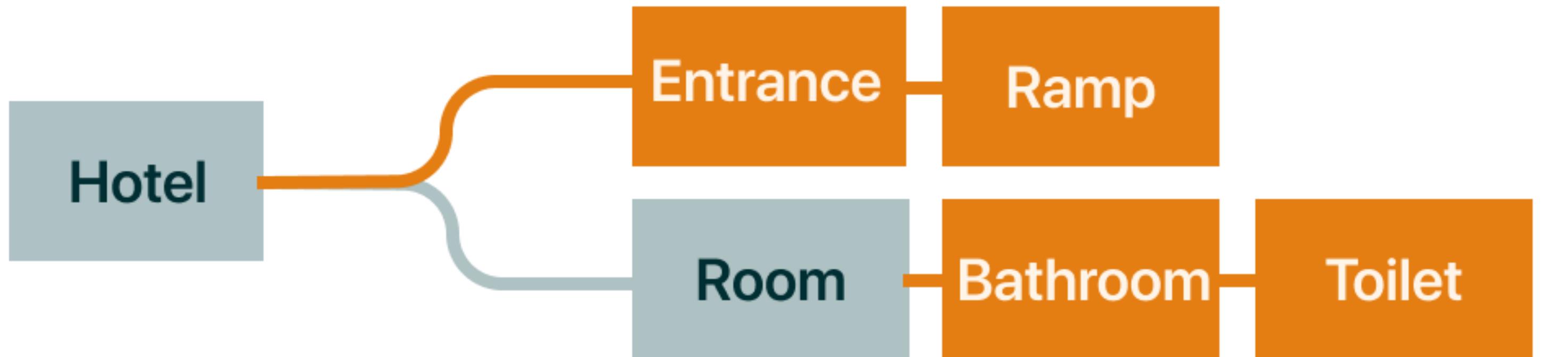
Where to get physical a11y data?

OpenStreetMap



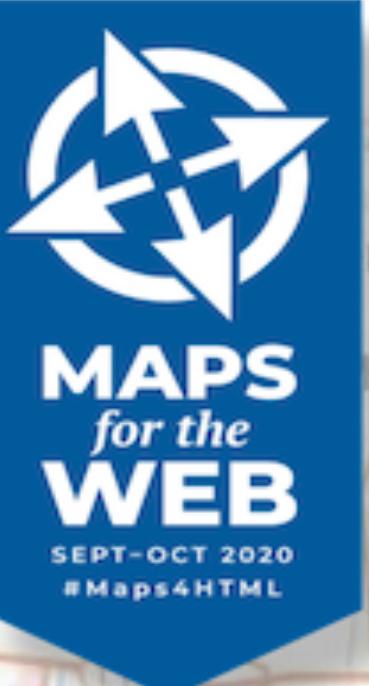
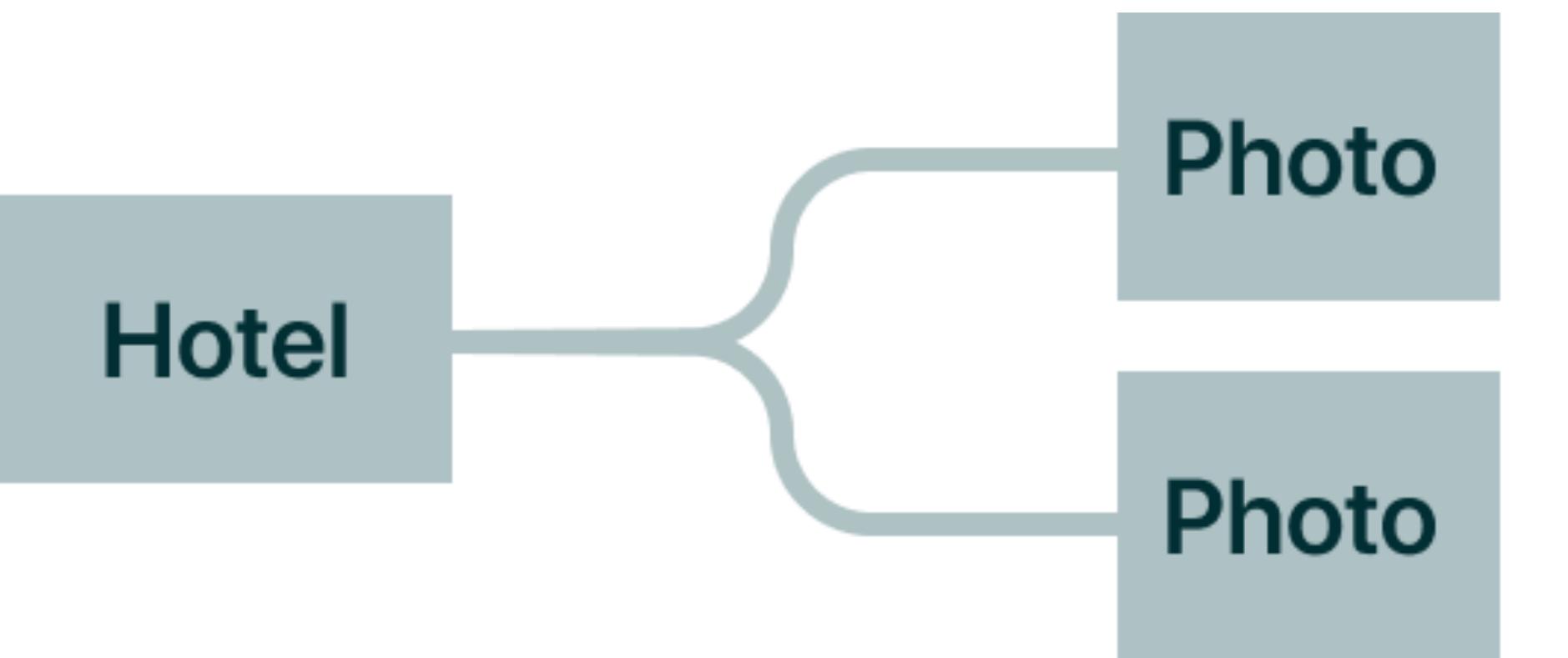
Where to get physical a11y data?

wheelmap.org



Where to get physical a11y data?

Hotel booking platform



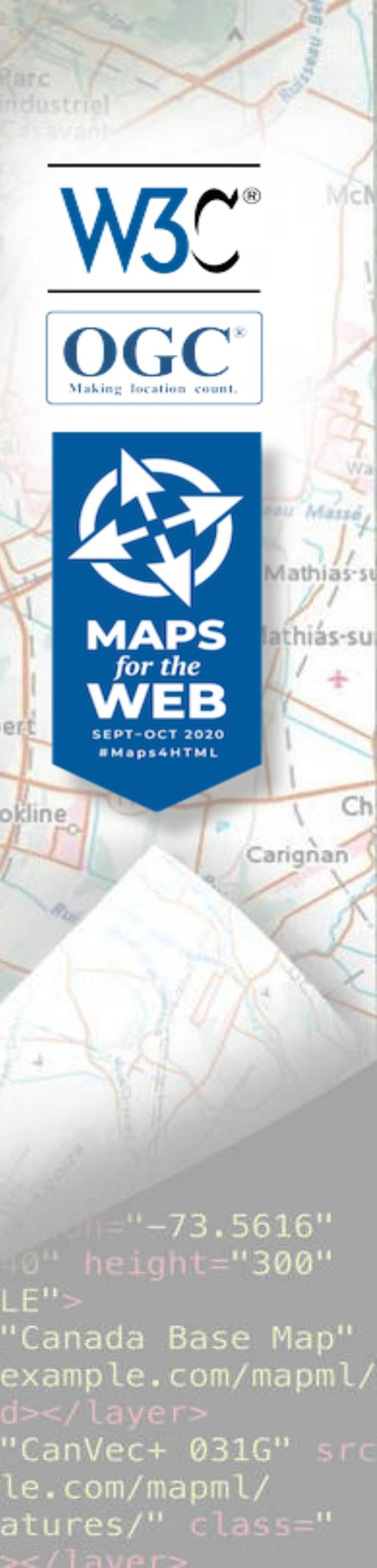
Where to get physical a11y data?



accessibility.cloud

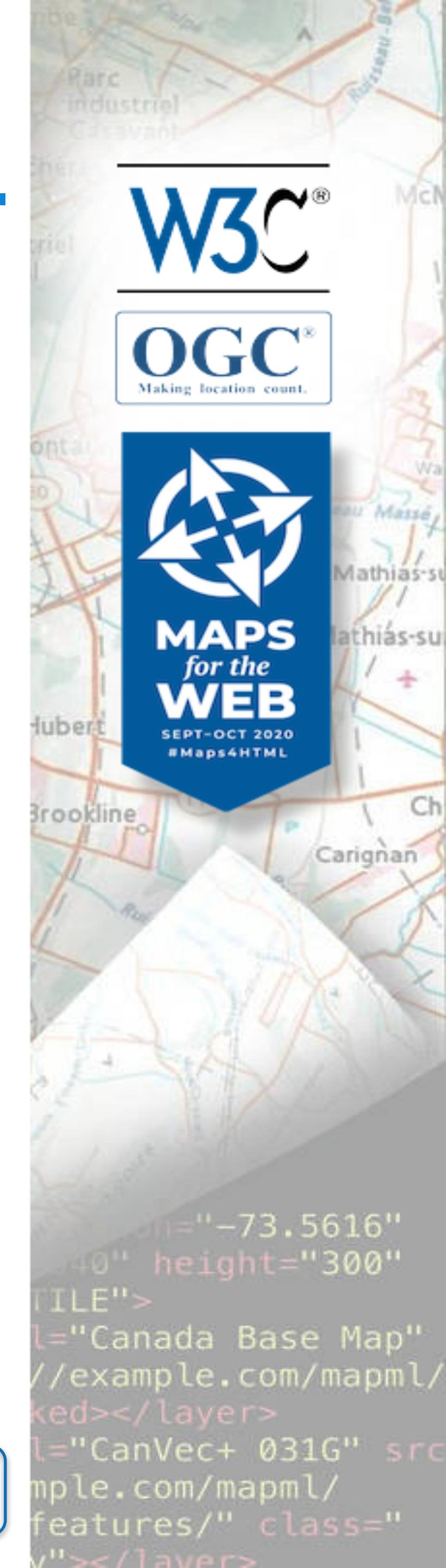
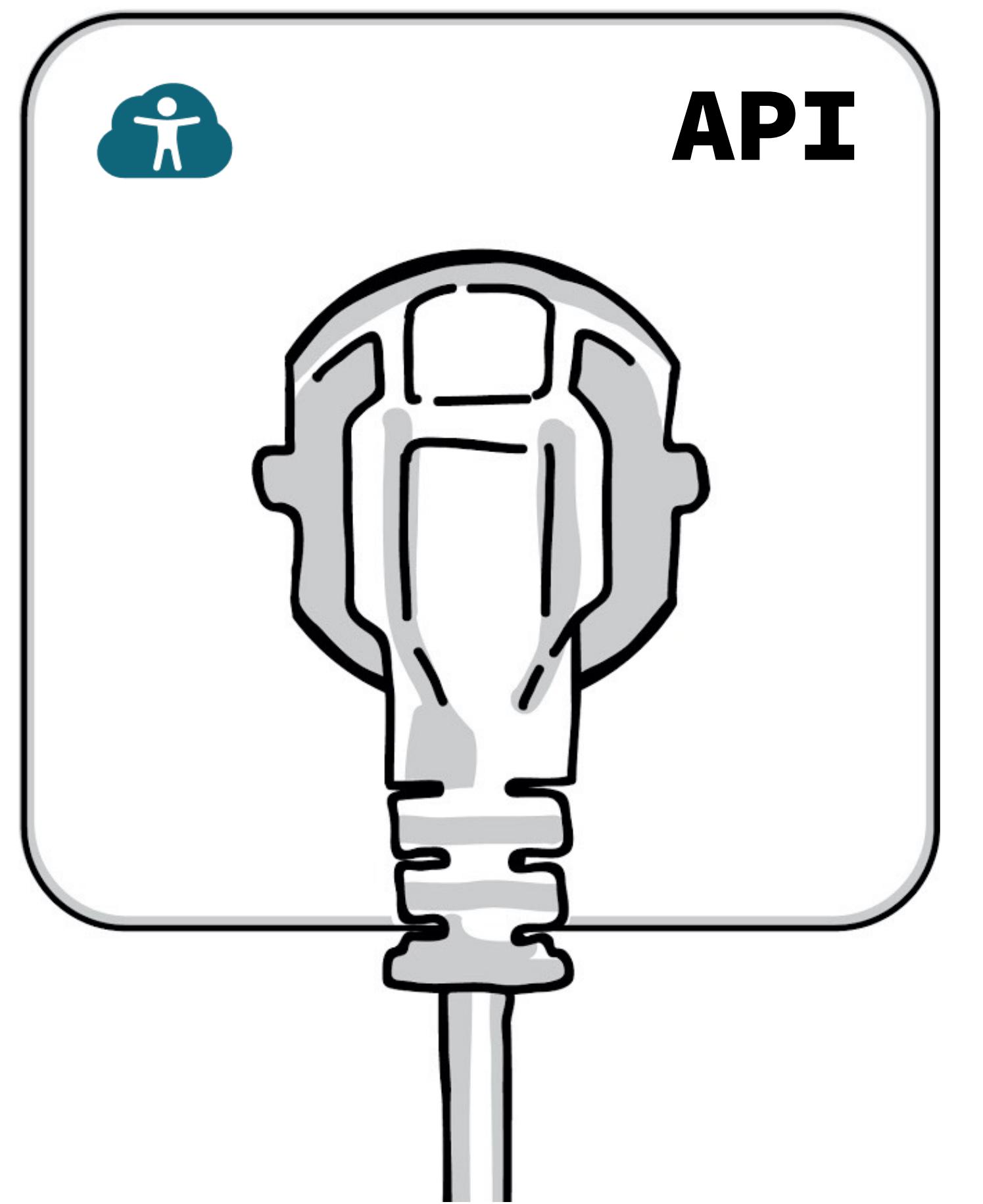
<https://accessibility.cloud>

(14)

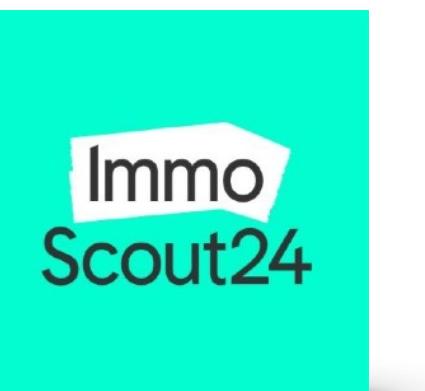
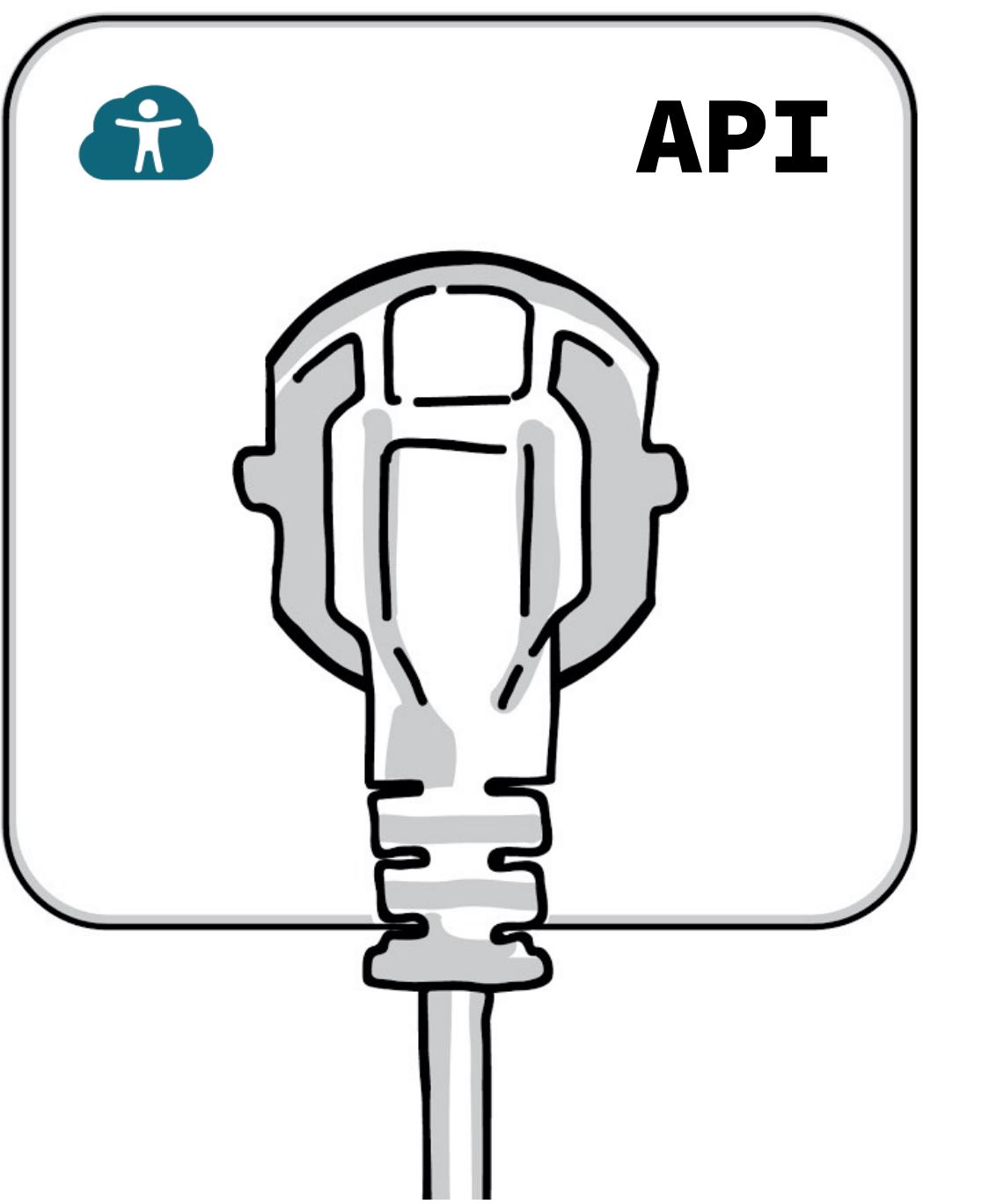


Where to get physical a11y data?

```
$ curl -v https://accessibility-cloud.freetls.fastly.net/place-infos.json?\nappToken\=YOUR_APP_TOKEN_HERE&latitude\=48.2435\&longitude\=16.3974\&accuracy\=1000\&include\nSourceIds\=QGf3sjbSxSpkeNHFm&includeRelated=source | jq .
```



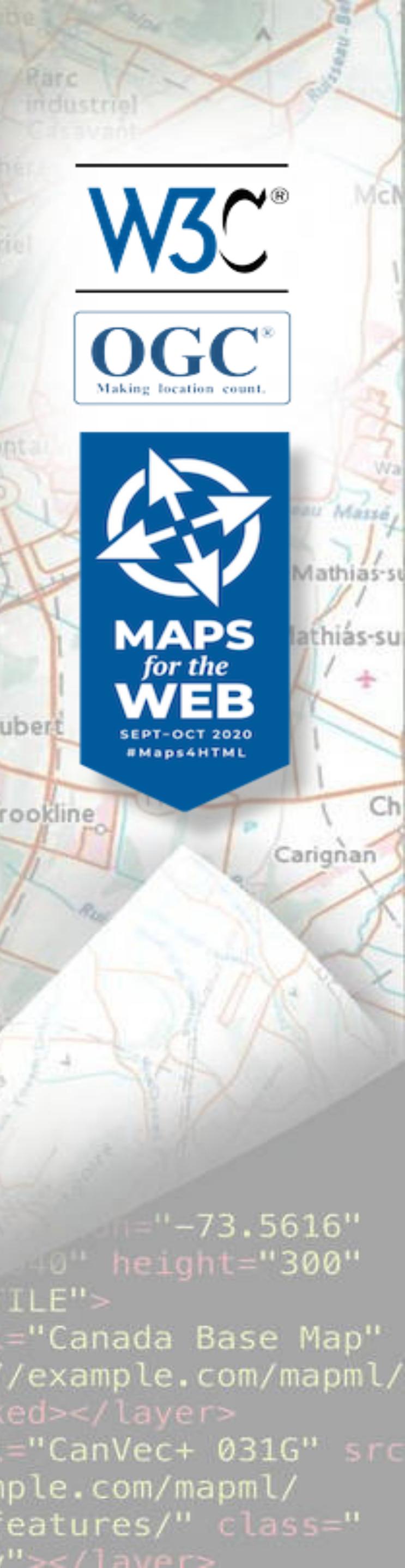
Where to get physical a11y data?



W3C®

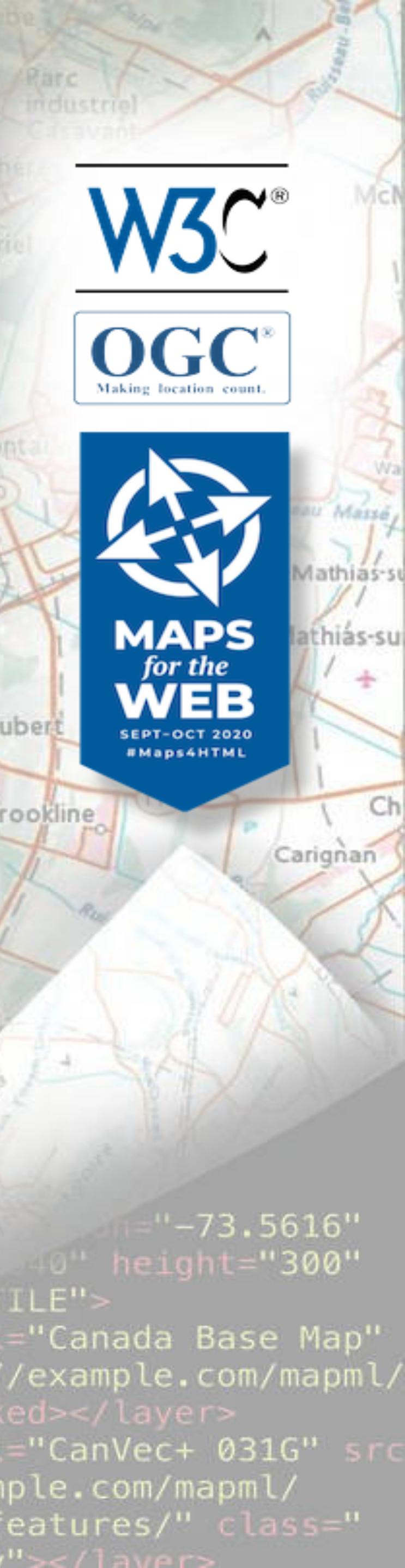
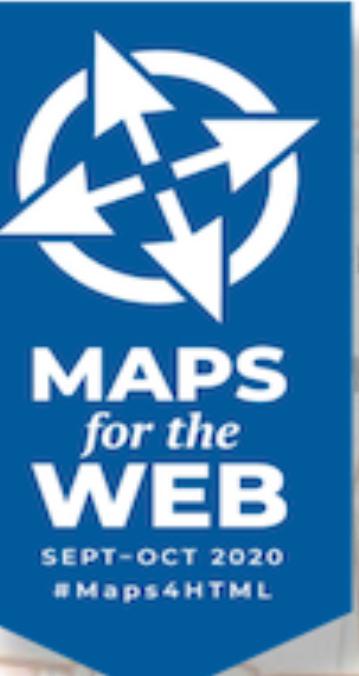
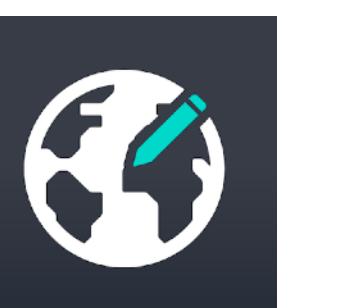
OGC®
Making location count.

MAPS
for the
WEB
SEPT-OCT 2020
#Maps4HTML

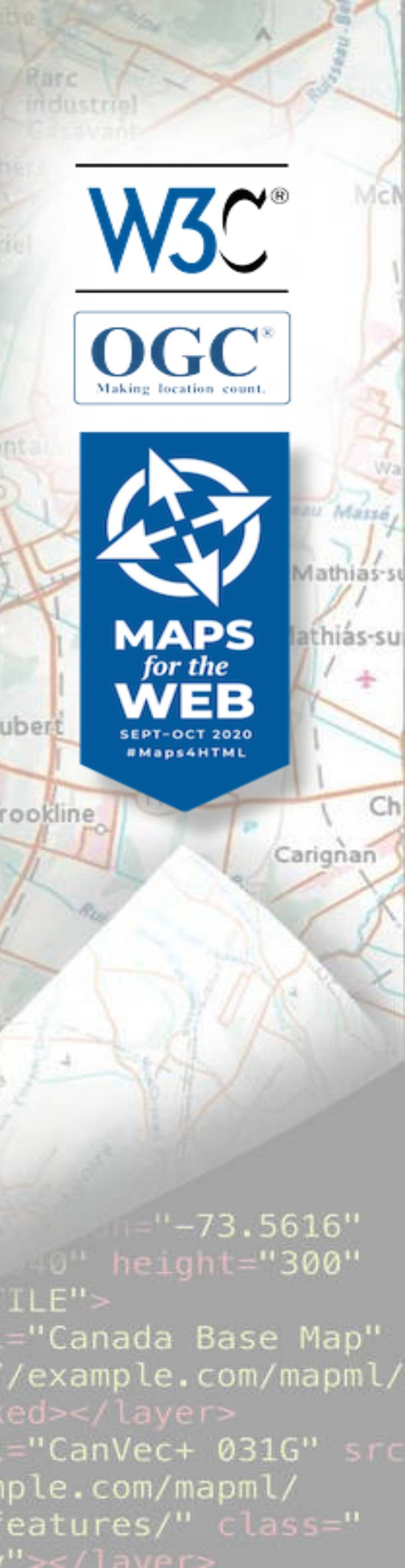


79 organizations

...contribute 1.3M places and 3.8K real-time elevators to Wheelmap via accessibility.cloud.



Accessibility vocabulary varies...



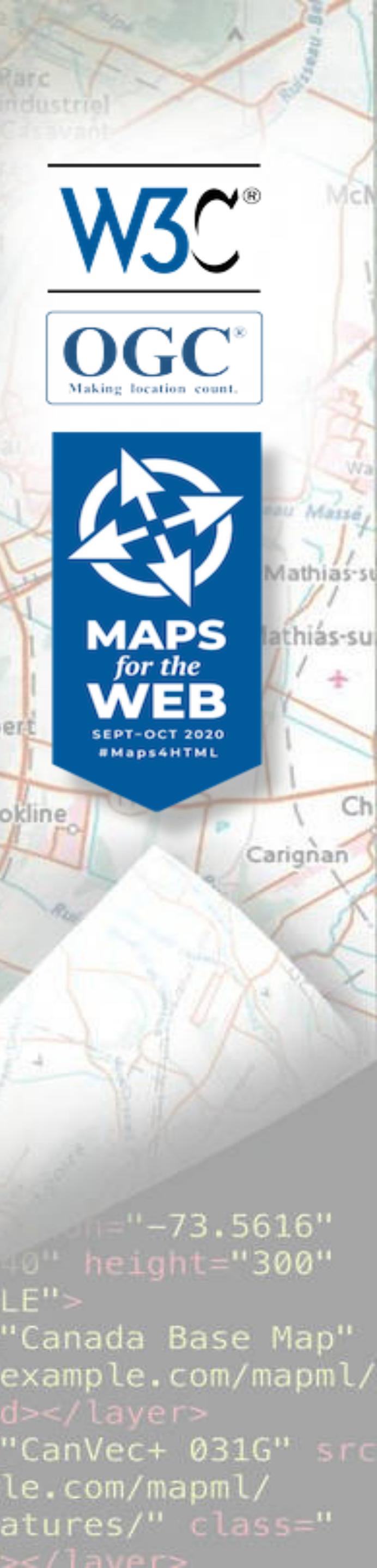
...so we need to harmonize data.



A11yJSON

<https://a11yjson.org>

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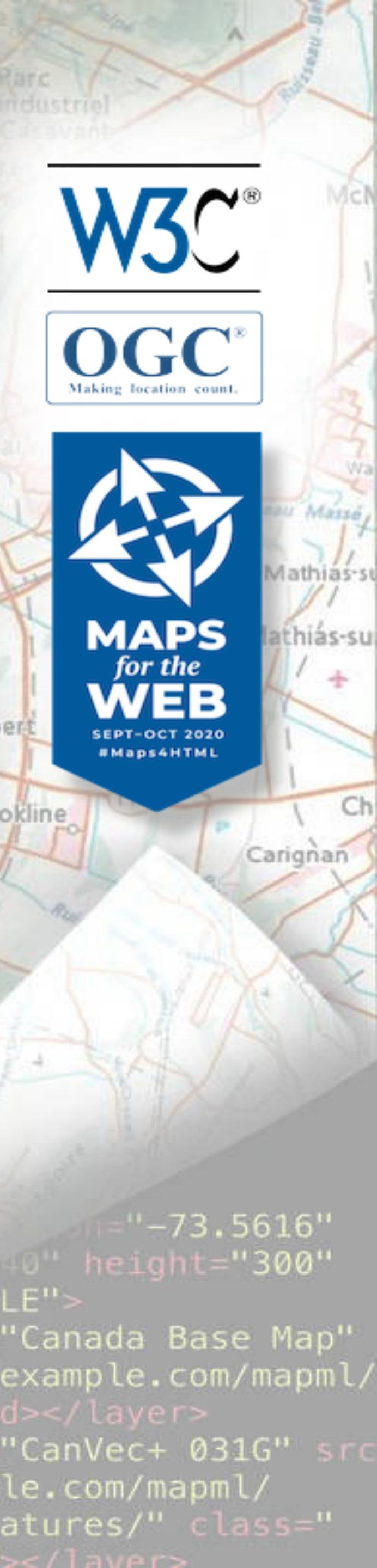


A11yJSON example

```
{  
  "geometry": { "type": "Point", "coordinates": [2.376757, 48.898991] },  
  "properties": {  
    "category": "cinema",  
    "name": "Ciné XY",  
    "accessibility": {  
      "entrances": [  
        { "name": "30th St", "isMainEntrance": true, "isLevel": false },  
        { "name": "Side gate", "hasFixedRamp": true }  
      ],  
      "accessibleWith": {  
        "wheelchair": true  
      },  
      "animalPolicy": {  
        "allowsGuideDogs": true  
      }  
    }  
  }  
}
```

<https://a11yjson.org>

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A11yJSON interface specs

Accessibility

AnimalPolicy

Elevator

Escalator

FoldingHandles

Ground

Media

Mirror

Parking

Pathways

Payment

PersonalProfile

PlaceInfo

Quantity

Ramp

Restroom

Room

Shower

Staff

Stairs

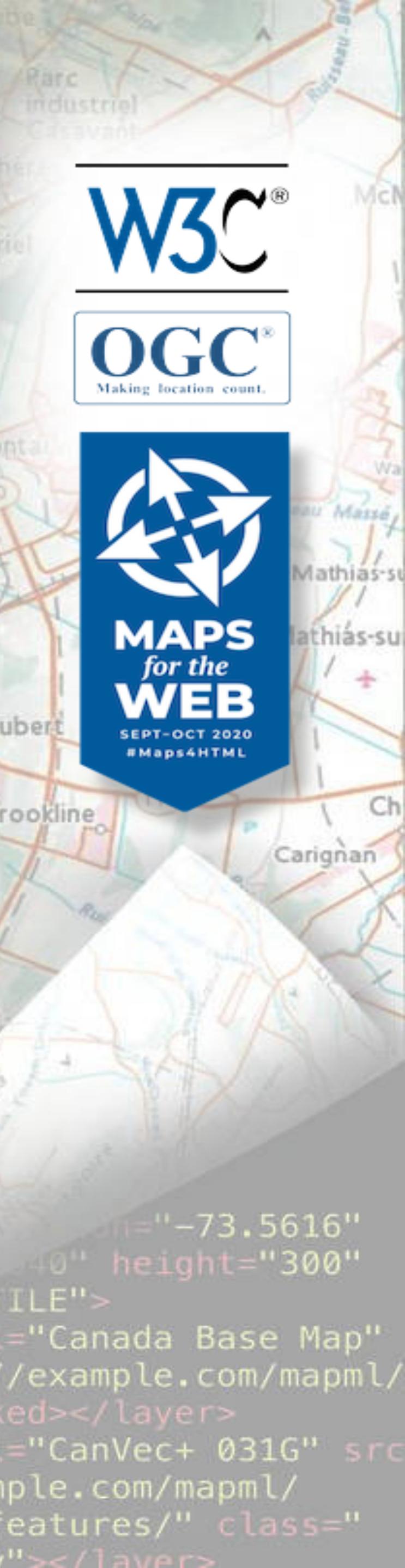
Tables

Toilet

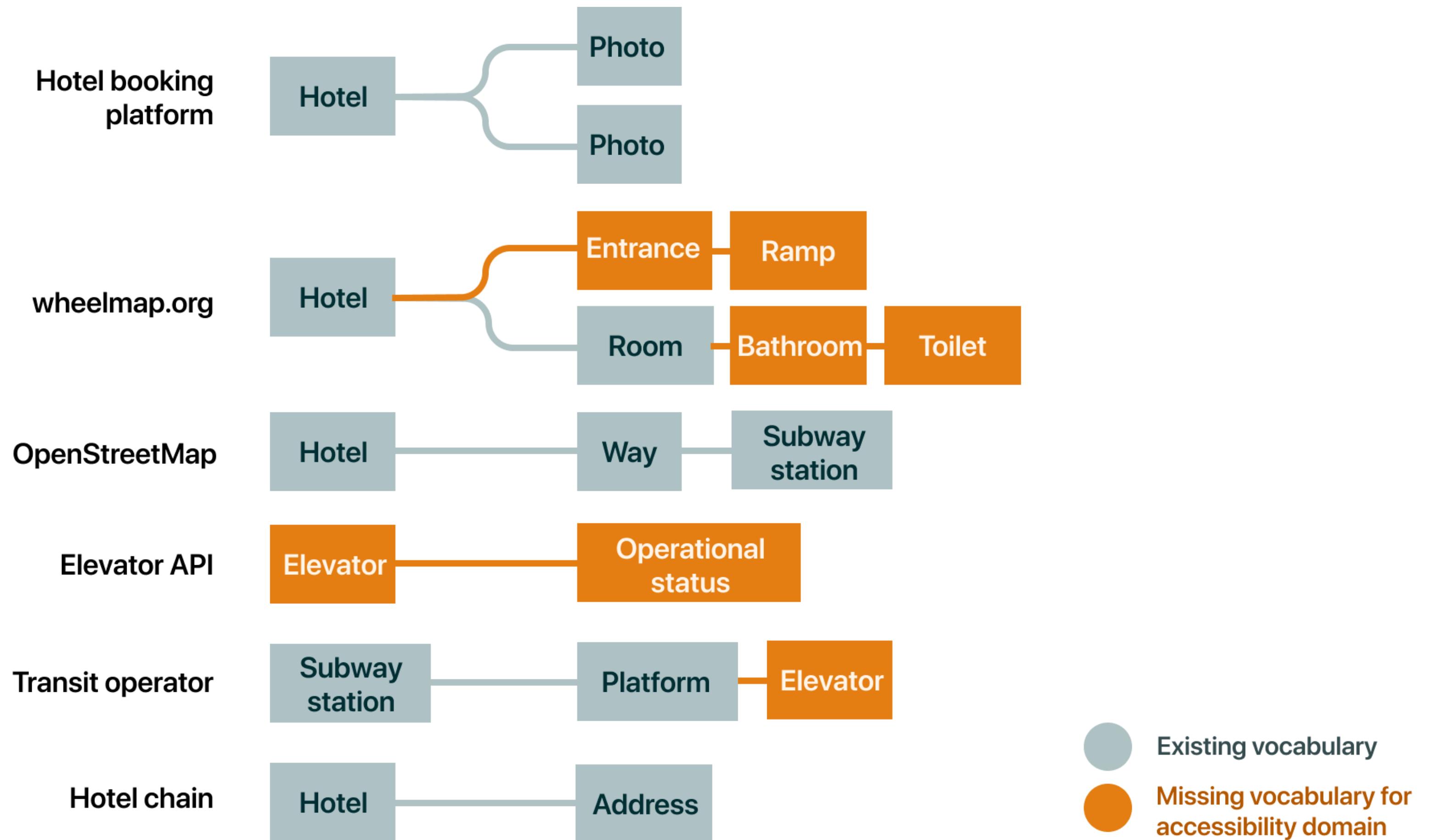
WashBasin

WheelchairParking

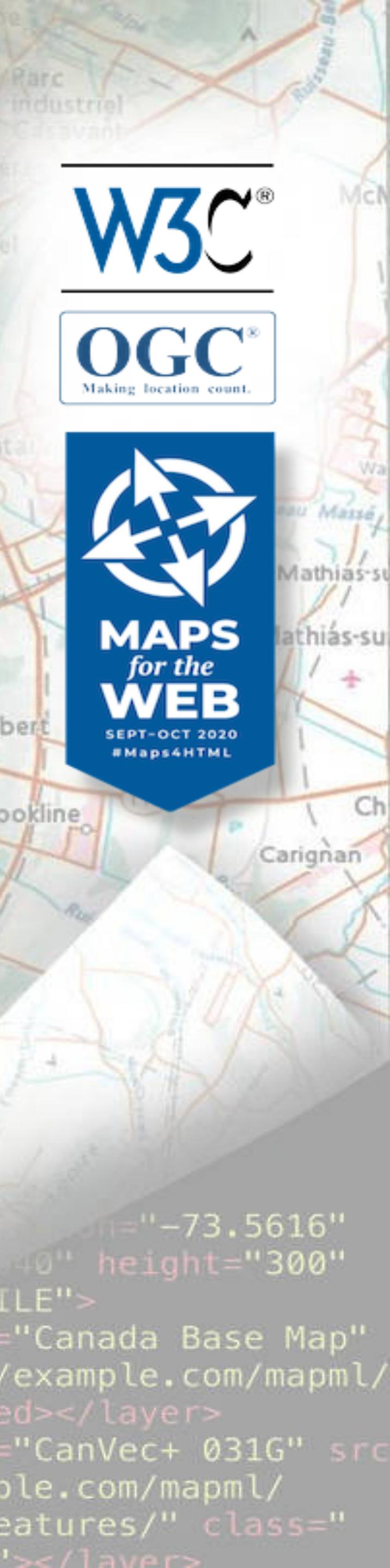
WheelchairPlaces



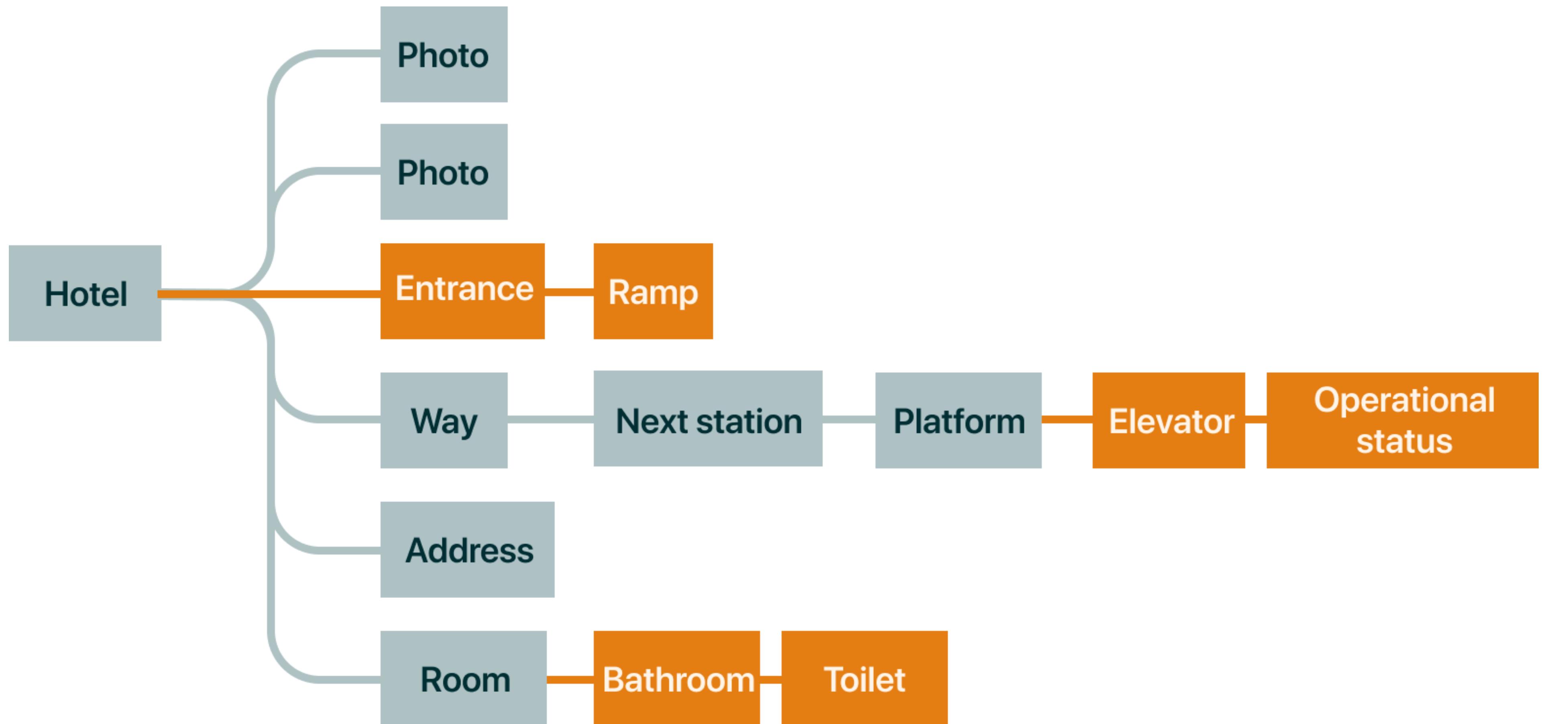
A user doesn't want this...



(Data about the same place from different sources/websites) [22]

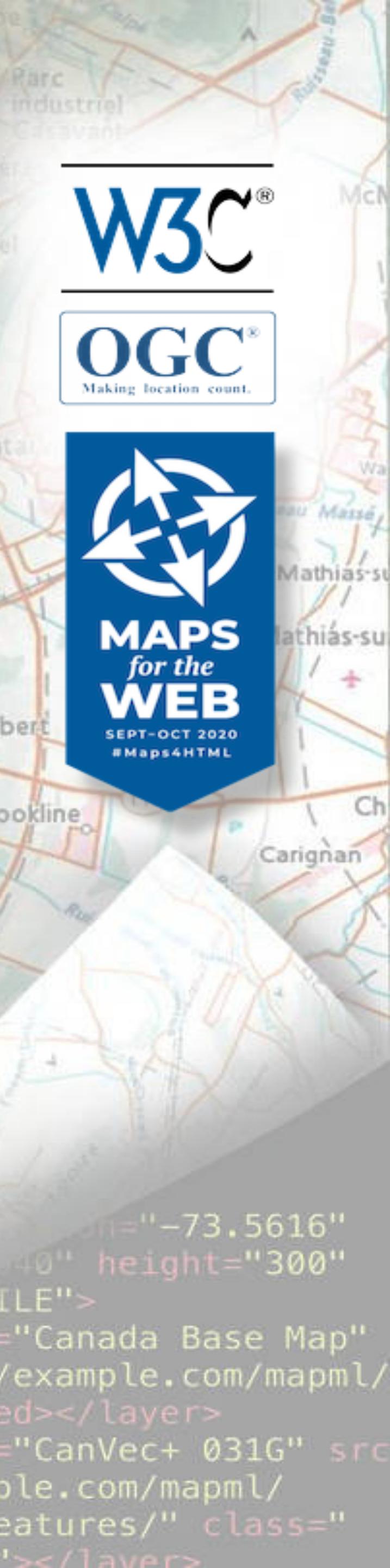


...but this.



(= All data discoverable in the same UX context)

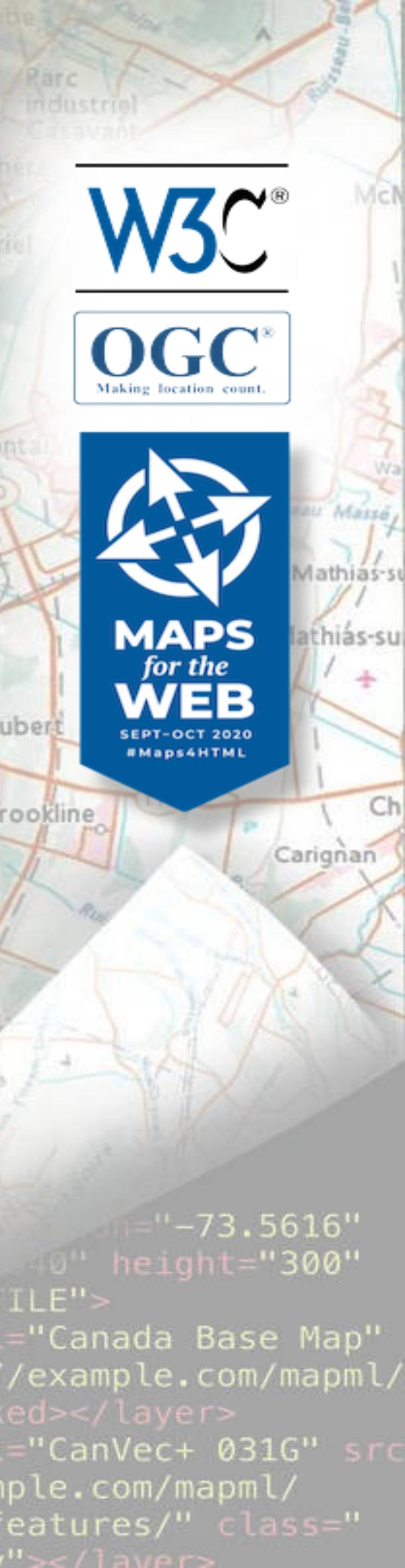
{ 23 }



This is what Linked Data is for.

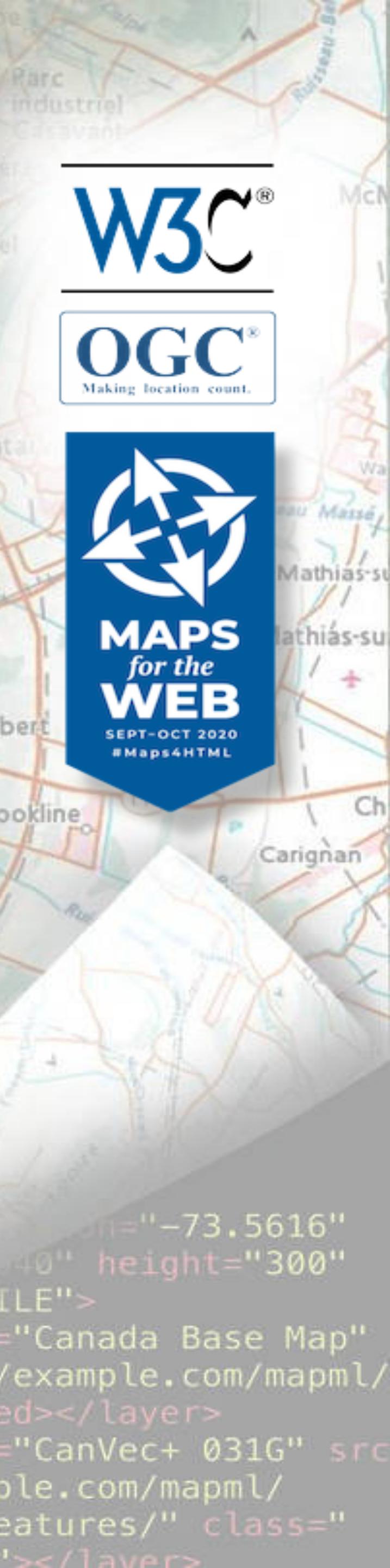
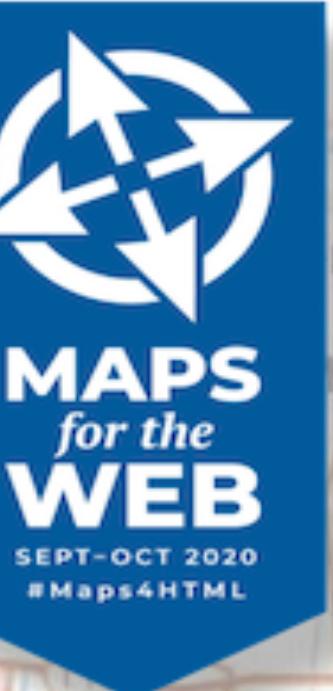


<https://schema.org>



So... how to describe physical a11y?

This is not standardized yet.

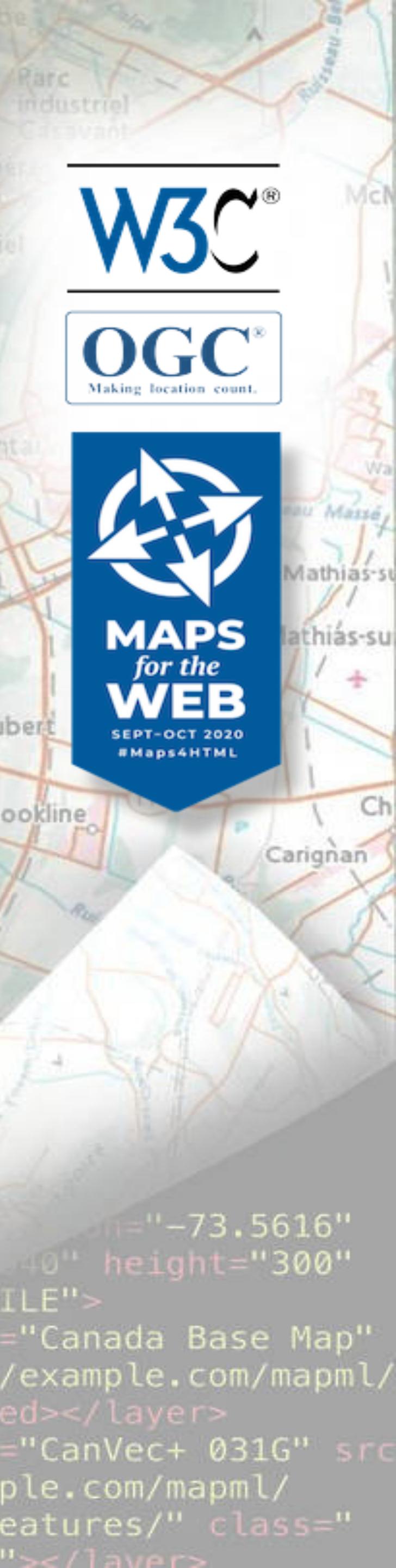


```
    <img alt="Map of Canada with various layers and labels" data-bbox="0 0 1000 1000"/>  
    <!-- Map layers -->  
    <!-- Canada Base Map -->  
    <!-- CanVec+ 031G -->
```

Example 1: Allow semantic info in MapML

```
<mapml>
  <head>...</head>
  <body>
    <feature vocab="https://schema.org" typeof="Place">
      <meta property="name" content="An awesome hotel 🏨" />
      <meta property="amenityFeature" typeof="LocationFeatureSpecification">
        <meta property="name" content="Wheelchair-accessible Sauna" />
        <meta property="value" content="True" />
      </meta>
    </meta>
    <geometry>...</geometry>
    <properties>...</properties>
  </feature>
</body>
</mapml>
```

<https://github.com/Maps4HTML/MapML-Proposal>



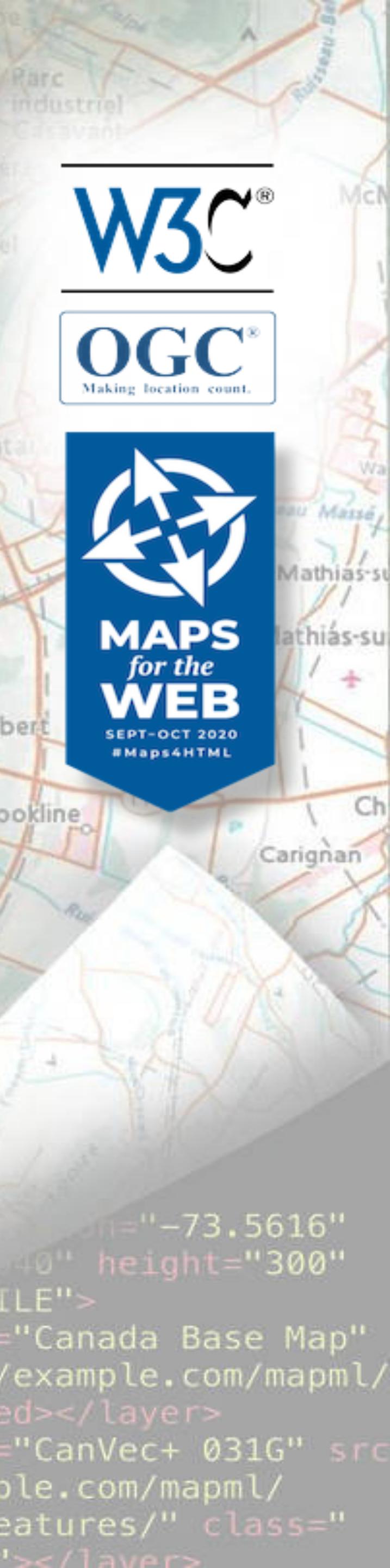
Example 2: Add A11yJSON in CityJSON

```
"CityObjects": {  
    "id-1": {  
        "type": "Building",  
        "children": ["id-2"]  
    },  
    "id-2": {  
        "type": "BuildingPart",  
        "parents": ["id-1"],  
        "accessibility": {  
            "accessibleWith": {  
                "wheelchair": true  
            }  
        }  
    }  
}
```

<https://cityjson.org>

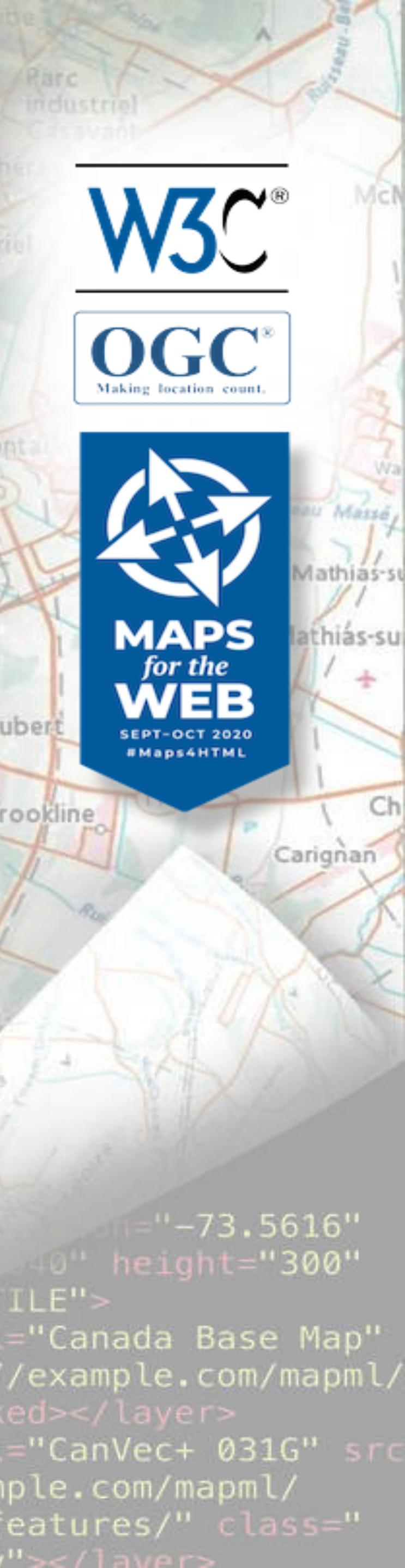


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Maps4Web + semantic data + browser extensions = 😍

- Ranking places by accessibility incentivizes businesses to improve their accessibility
- Colorize place markers using a traffic light system (green = accessible, red = not accessible)
- Add indoor map context links to places
- Augment maps with accessibility features and hazards:
 - accessible toilets
 - elevators (with realtime operational status)
 - (in)accessible sidewalks, ramps, and stairs
 - environment noise levels
- Allow voice assistants to understand what map features mean

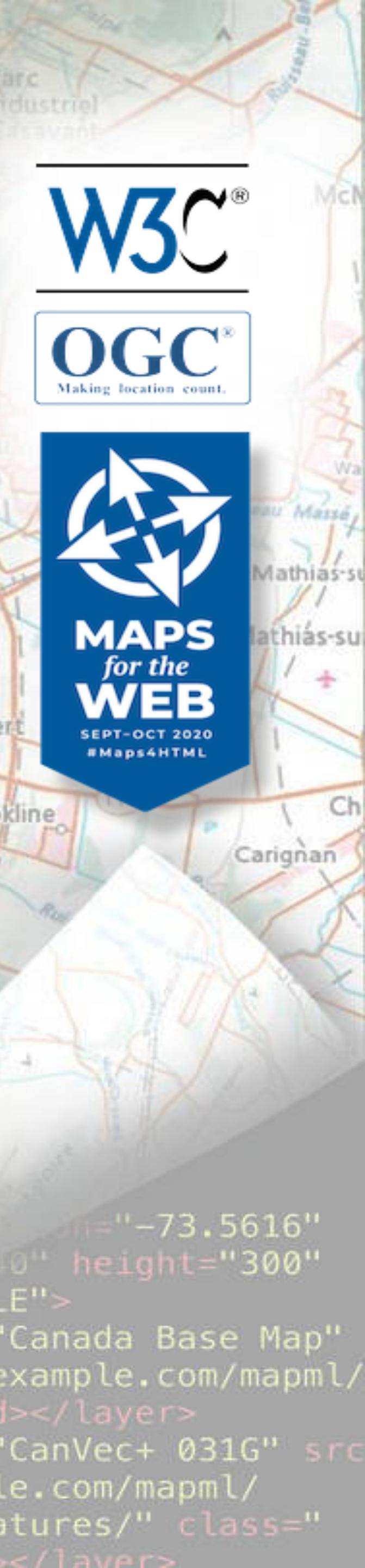


Health profiles and privacy



- A11y features need an extra layer of protection
- Like location, accessibility augmentation should be allowed/denied on a per-website basis
- Browsers / plugins should not reveal a user's health conditions to websites

User intent vs. map author intent

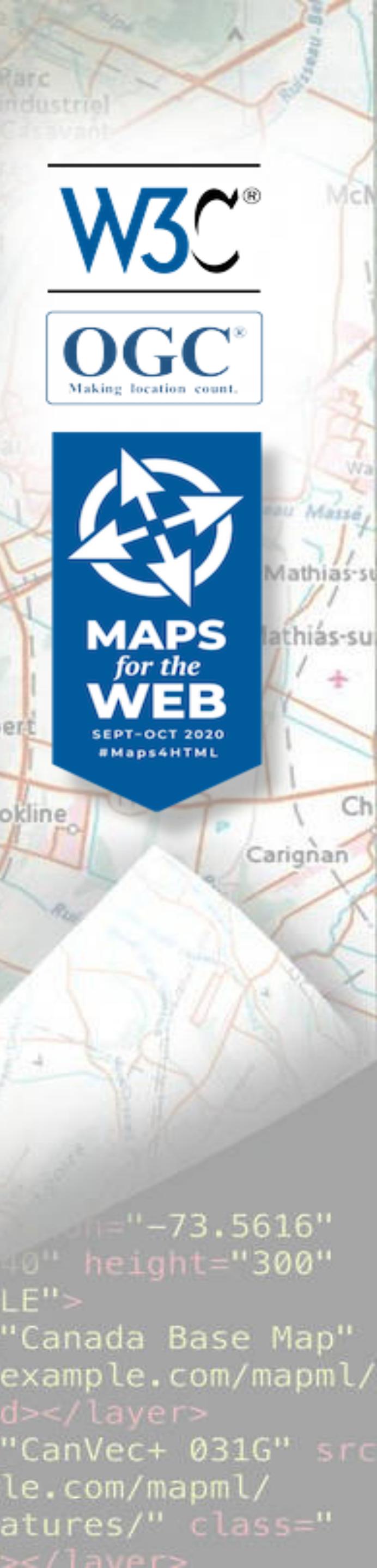


- ARIA labels as hints for assistive tech
- Example declarations:
 - “The visual style of this <feature> is important to understand the map content”
 - “This <map> is a geodata visualization”
 - “This <map> is made for discovering places”

How you can help

Participate in schema.org GitHub Issue #254!

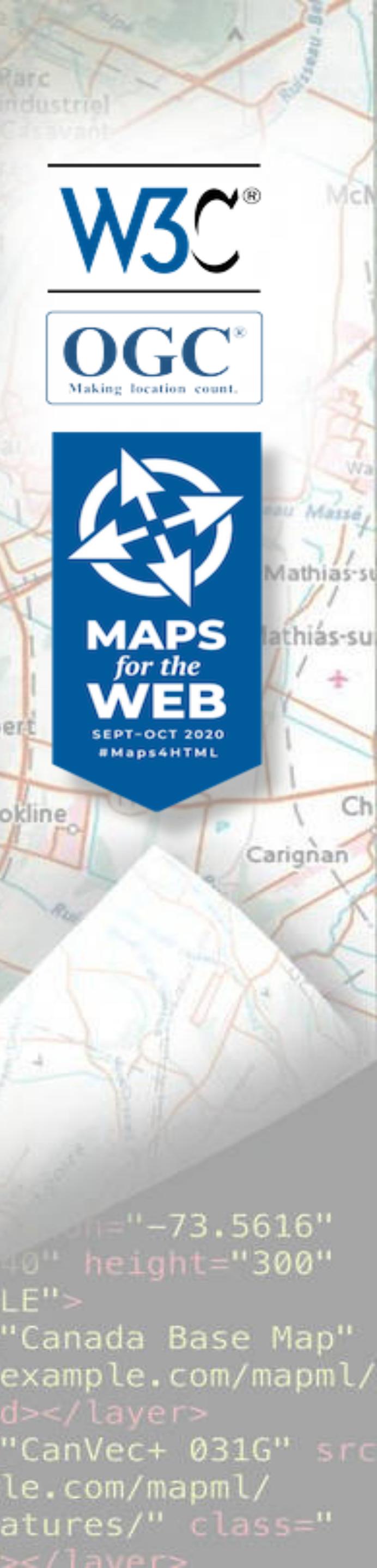
The screenshot shows a GitHub repository page for the schema.org organization. The repository name is 'schemaorg / schemaorg'. The 'Issues' tab is selected, showing 562 issues. The specific issue being viewed is '#254 Accessibility of places', which was opened by 'chaals' on 21 Jan 2015. The issue has 26 comments. A comment from 'chaals' on 21 Jan 2015 suggests adding simple properties to describe accessibility characteristics of places. The issue has 6 likes. The labels applied to this issue are 'no-issue-activity', 'schema.org vocab', and 'status:work expected'. The assignee is 'danbri'. The repository has 385 stars, 3.8k forks, and 697 open pull requests.



How you can help

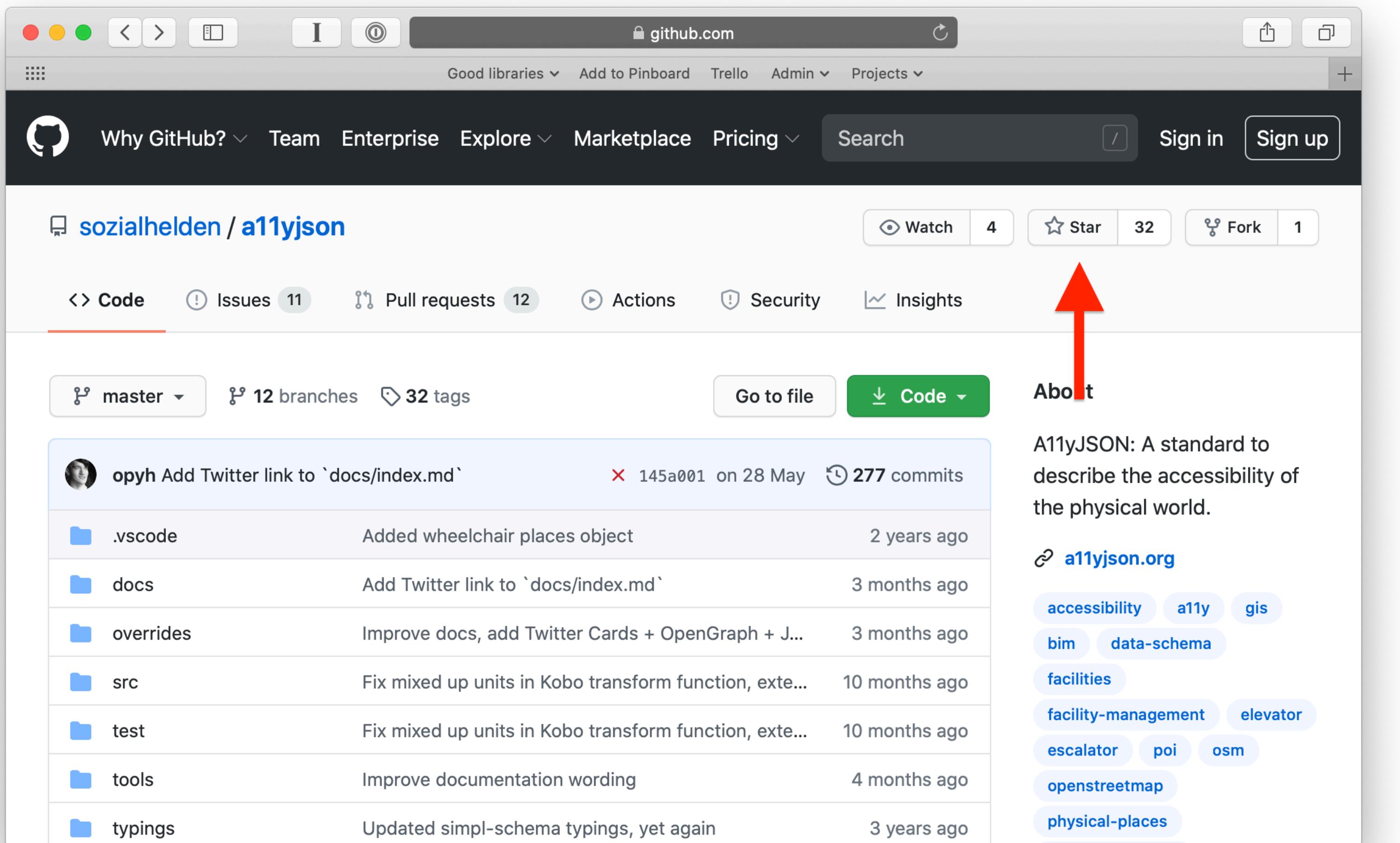
Participate in the [W3C LDA CG!](#)

The screenshot shows the homepage of the W3C Linked Data for Accessibility Community Group. At the top, there's a navigation bar with links for "Good libraries", "Add to Pinboard", "Trello", "Admin", and "Projects". Below the navigation is a header with the W3C logo and a "COMMUNITY & BUSINESS GROUPS" banner. The main content area features a section titled "LINKED DATA FOR ACCESSIBILITY COMMUNITY GROUP" with a mission statement. It includes a note about community group roles and a "No Reports Yet Published" section with a "PUBLISH REPORTS" button. A "Tools for this group" sidebar lists "Mailing List" (two options), "IRC", "RSS", and "Contact This Group". Another sidebar, "Get involved", explains how anyone can join. At the bottom, there's a "JOIN OR LEAVE THIS GROUP" button and a list of "Chairs" (Sebastian Felix Zappe and Holger Dieterich) with their profile pictures.



How you can help

Give A11yJSON a  on GitHub!



A screenshot of a GitHub repository page for 'sozialhelden/a11yjson'. The page shows the repository's main interface with a list of recent commits. A large red arrow points upwards from the bottom of the page towards the 'Star' button in the top right corner of the header. The 'Star' button is currently highlighted with a blue outline, indicating it has been clicked or is being interacted with.

sozialhelden / a11yjson

Code Issues 11 Pull requests 12 Actions Security Insights

master 12 branches 32 tags Go to file Code

opyh Add Twitter link to `docs/index.md` 145a001 on 28 May 277 commits

.vscode Added wheelchair places object 2 years ago

docs Add Twitter link to `docs/index.md` 3 months ago

overrides Improve docs, add Twitter Cards + OpenGraph + J... 3 months ago

src Fix mixed up units in Kobo transform function, exte... 10 months ago

test Fix mixed up units in Kobo transform function, exte... 10 months ago

tools Improve documentation wording 4 months ago

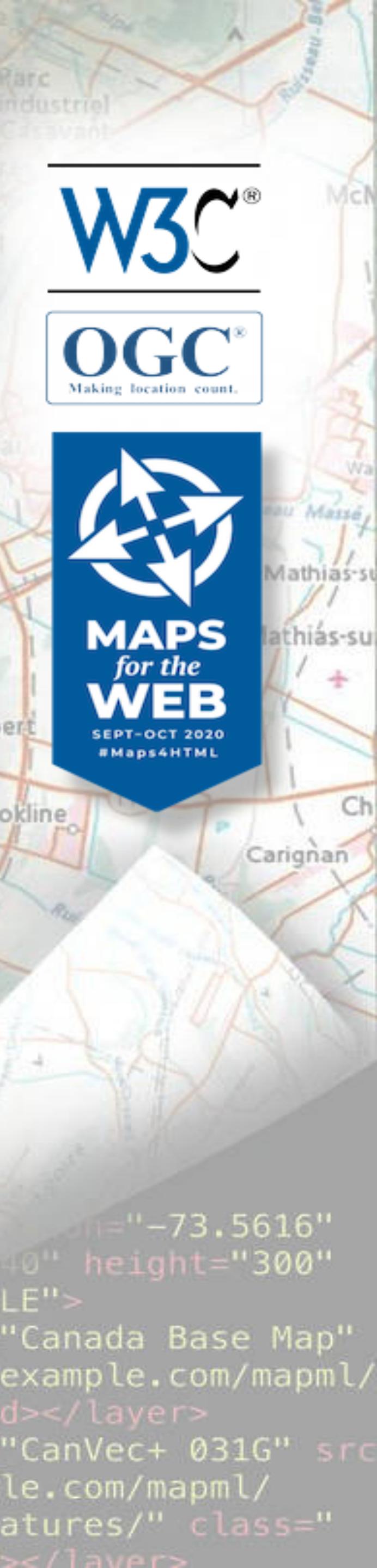
typings Updated simpl-schema typings, yet again 3 years ago

About

A11yJSON: A standard to describe the accessibility of the physical world.

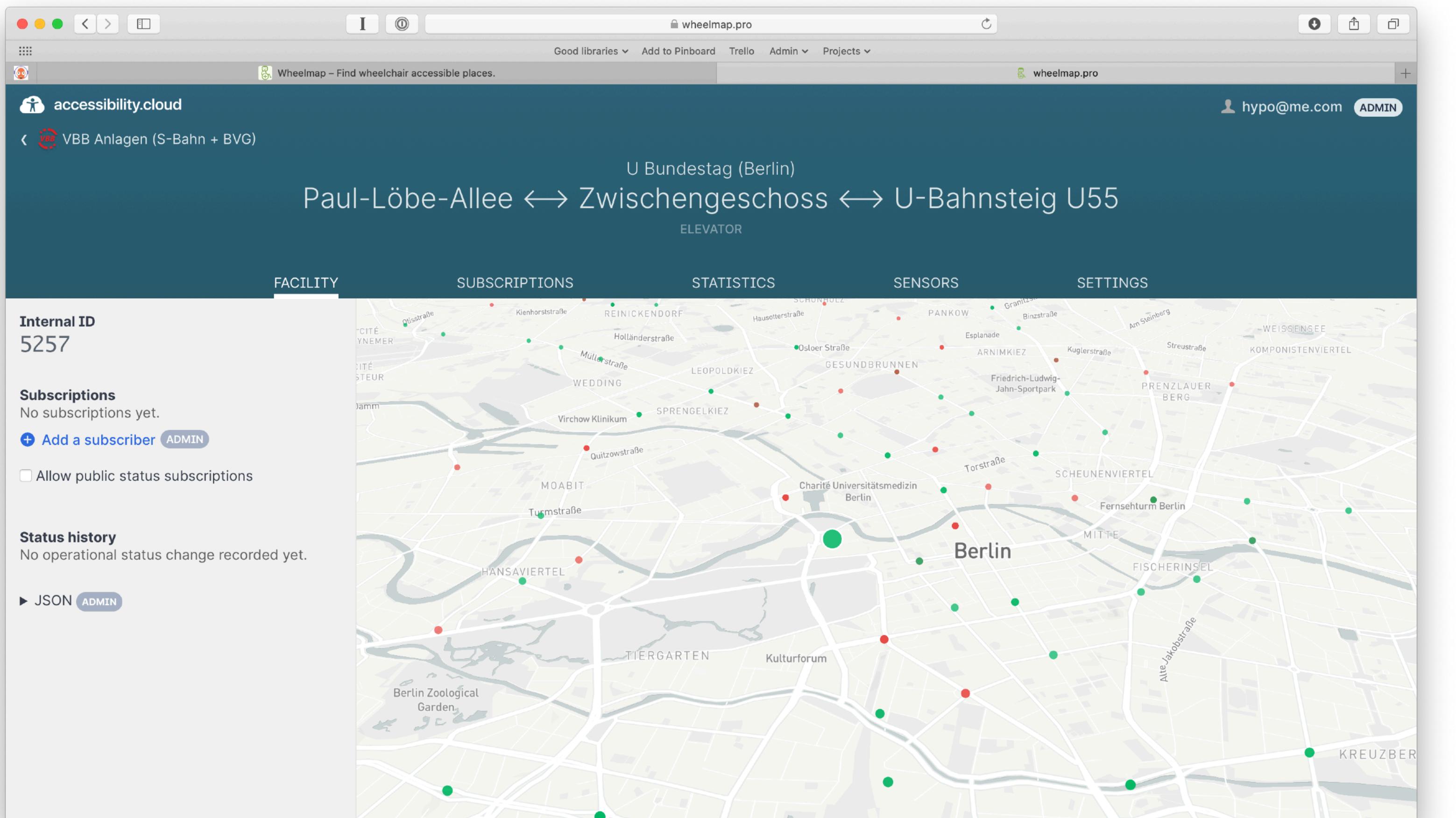
a11yjson.org

accessibility a11y gis
bim data-schema
facilities
facility-management elevator
escalator poi osm
openstreetmap
physical-places

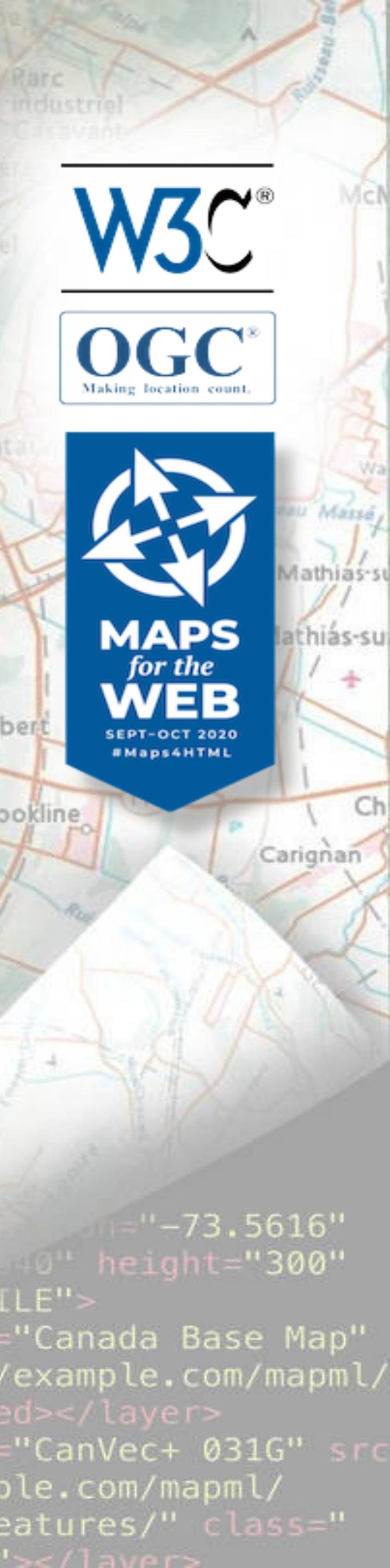


How you can help

Add place and elevator/escalator realtime datasets on [accessibility.cloud!](#)



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THANK YOU!

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holger@sozialhelden.de ([Twitter](#))

Monday, Sep 28, 2020

W3C/OGC Joint Workshop Series on Maps for the Web
[w3.org/2020/maps/](https://www.w3.org/2020/maps/)

