

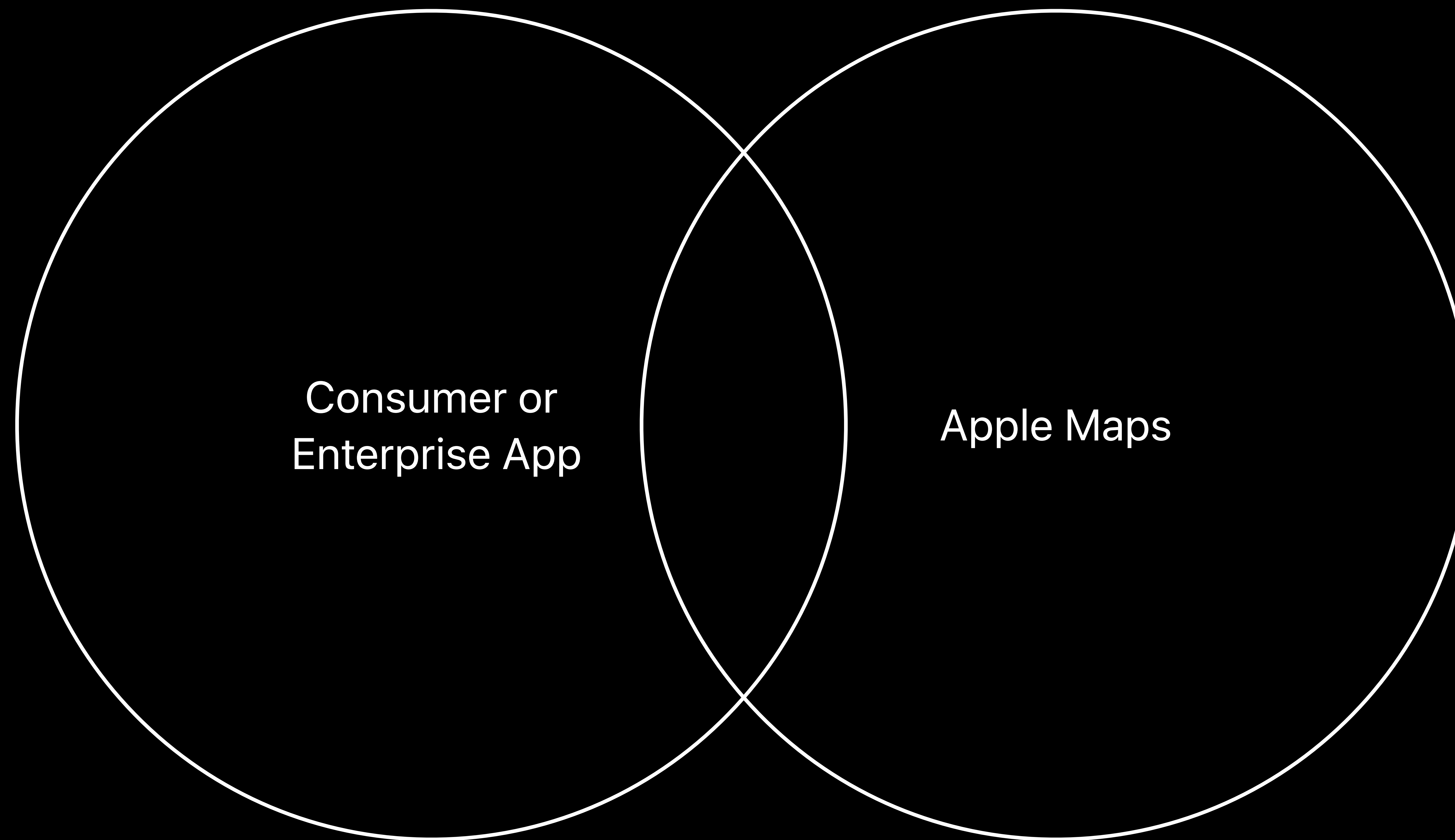
#WWDC19

Introducing the Indoor Maps Program

Yuval Kossovsky, Indoor Maps Program

Consumer or
Enterprise App

Apple Maps



Consumer or
Enterprise App

Apple Maps



Sortidas Departures Salidas Terminal B

Horario	Destino	Aerolínea	Estado
18:00	AMSTERDAM	FR	OK
20:15	BRUSELAS	OV	OK
20:20	OSTENDE	FR	OK
20:20	MADRID	OV	OK
20:25	FRANKFURT	FR	OK
20:25	DUBLIN	OV	OK
20:40	AMSTERDAM	FR	OK
20:45	BRUXELLES	OV	OK
20:50	BRUXELLES	OV	OK
21:00	BRUXELLES	OV	OK

Sortidas Departures Salidas Terminal B

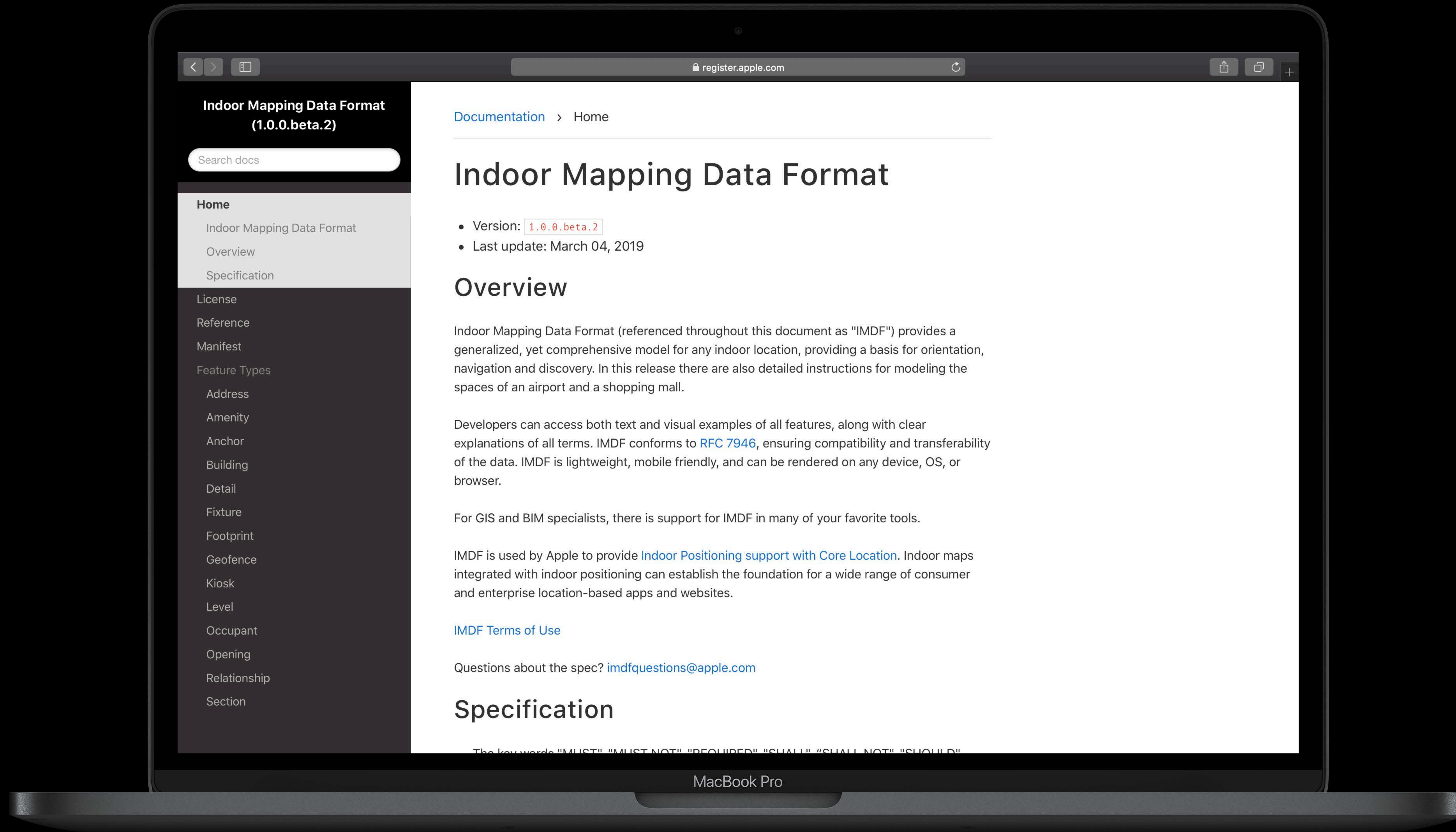
Horario	Destino	Aerolínea	Clase	Estado
21:15	DUBLIN	OV	6304 6771	OK
21:20	BRUXELLES	OV	7700 3413	OK
21:30	BOLONIA	OV	6300 6771	OK
21:30	BRUXELLES	OV	4400 3413	OK
21:35	P. HALLEROD	OV	6300 6771	OK
21:55	BRUXELLES	OV	1700 3413	OK
21:55	SEVILLA	OV	6300 6771	OK
21:55	BUCAREST	OV	3170 3413	OK
21:55	CLUJ NAPOCA	OV	3400 3413	OK
22:20	OPORTO	OV	4507 6771	OK







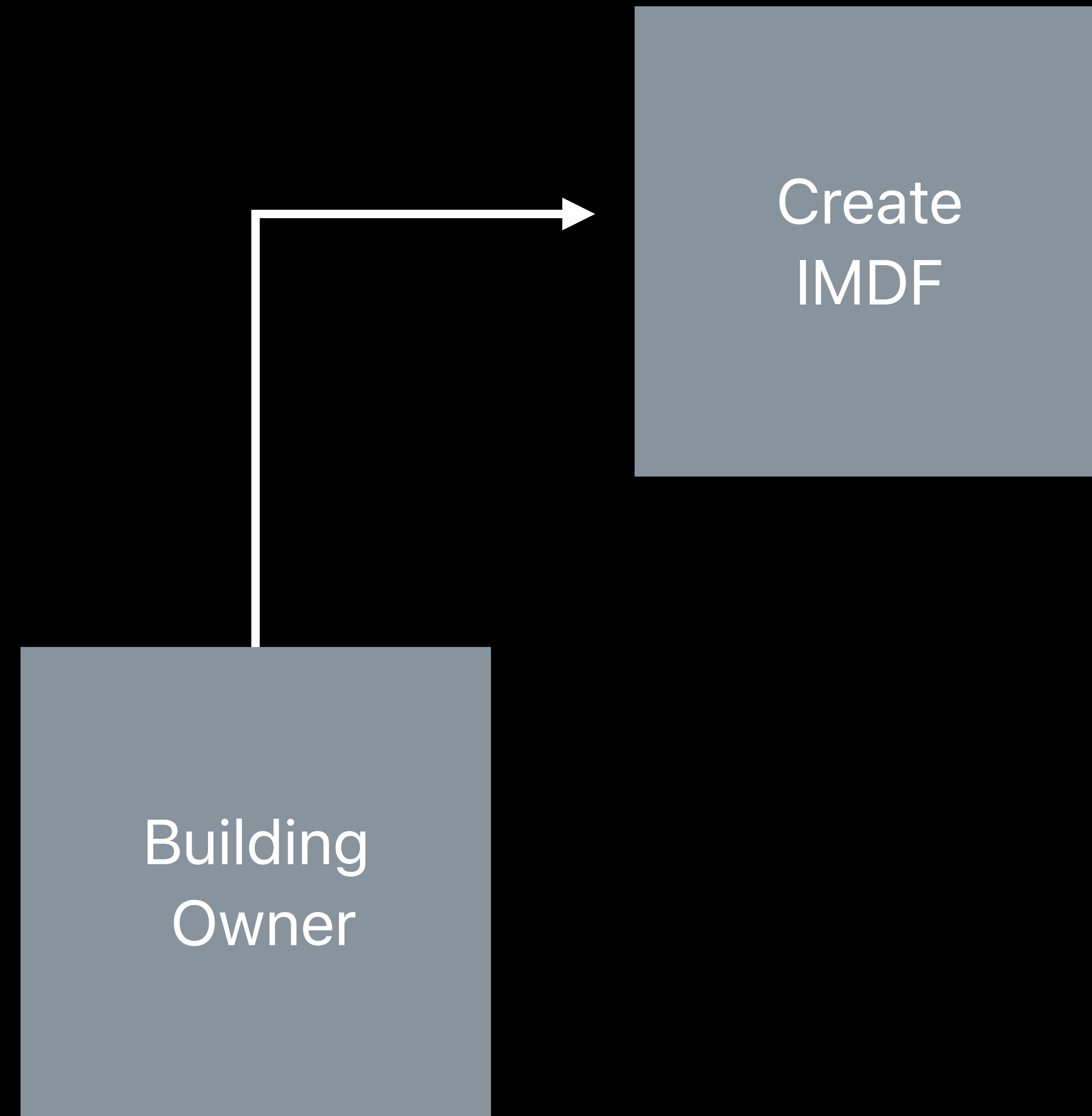


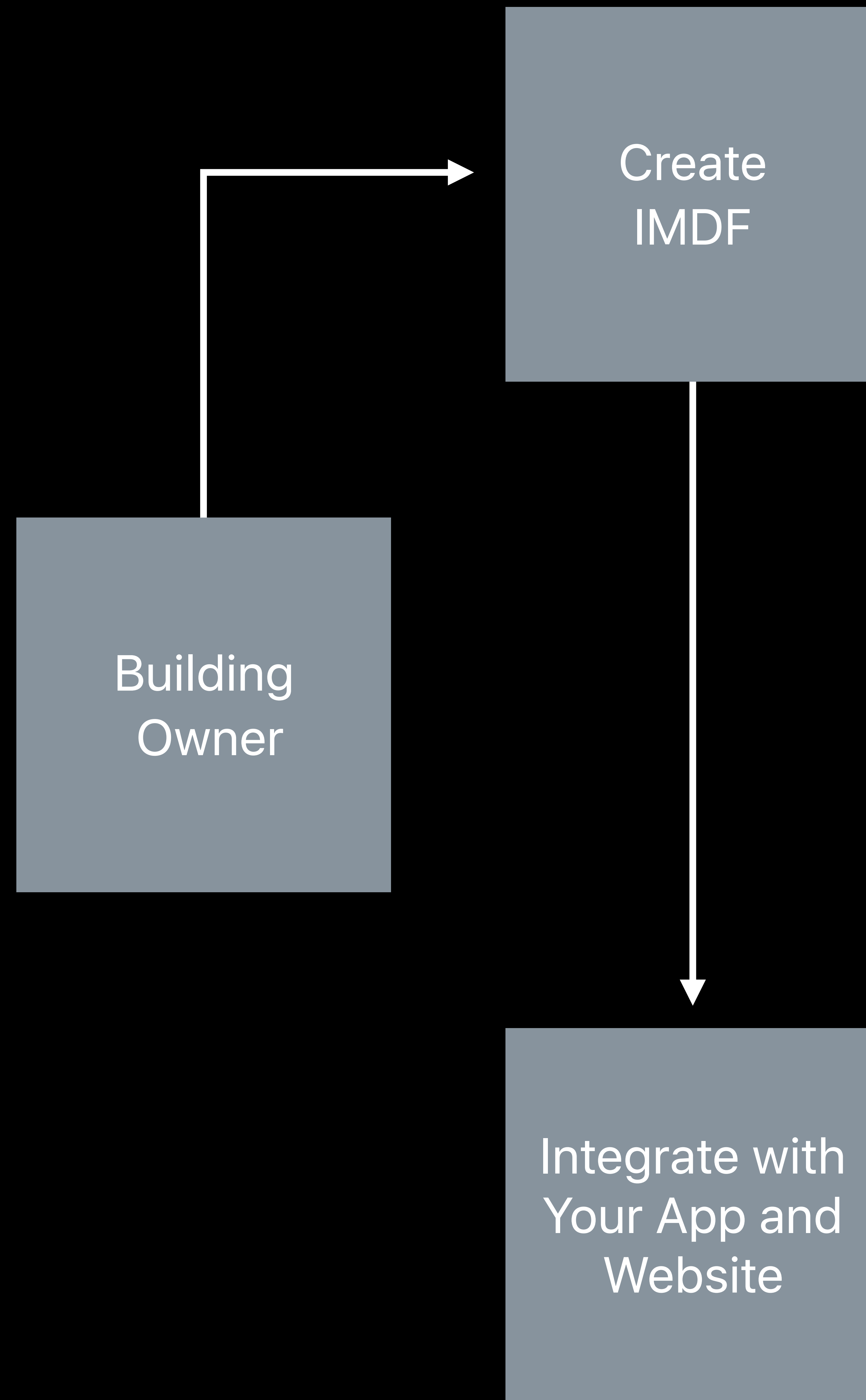


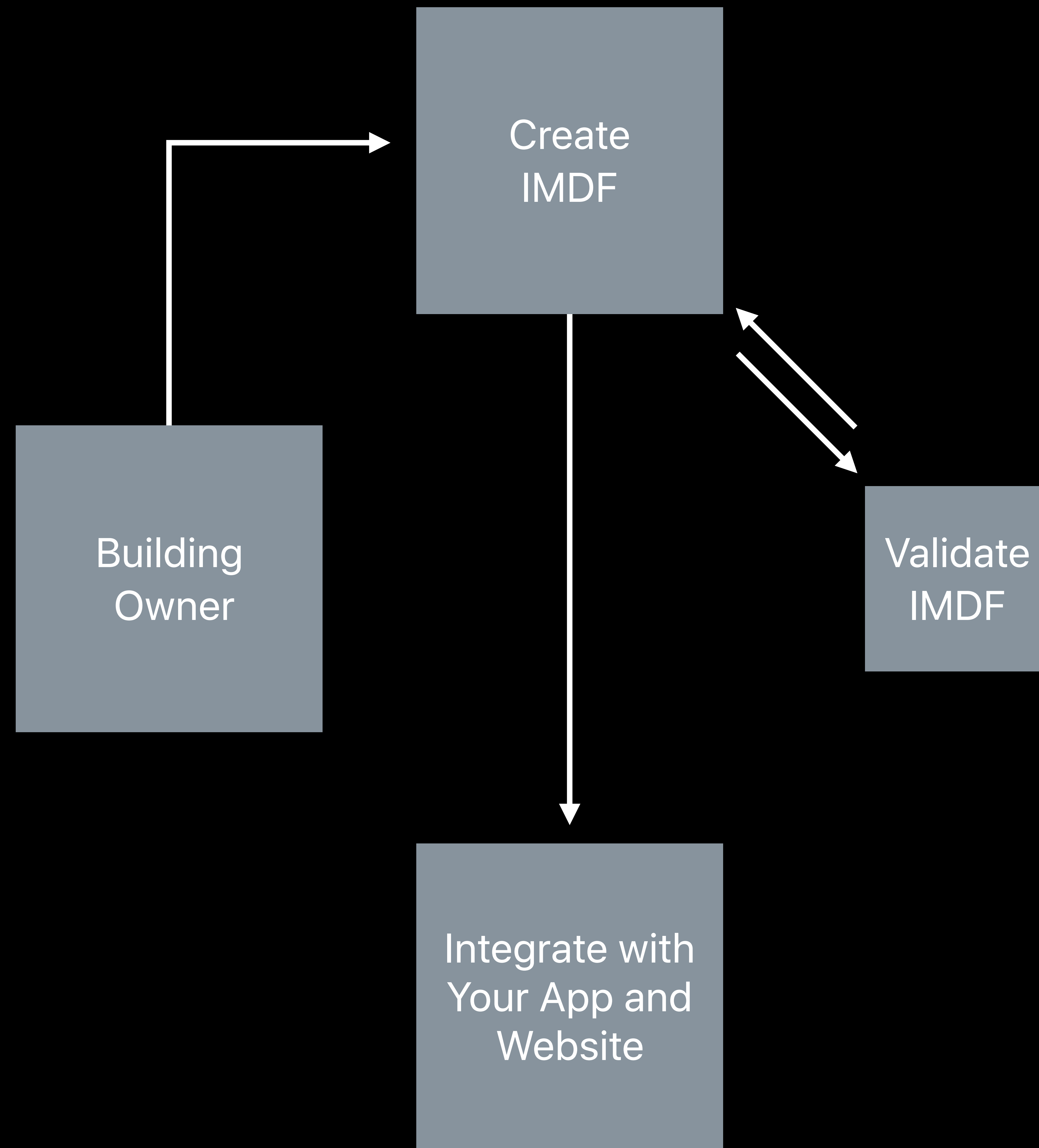
register.apple.com/resources/imdf



Building
Owner

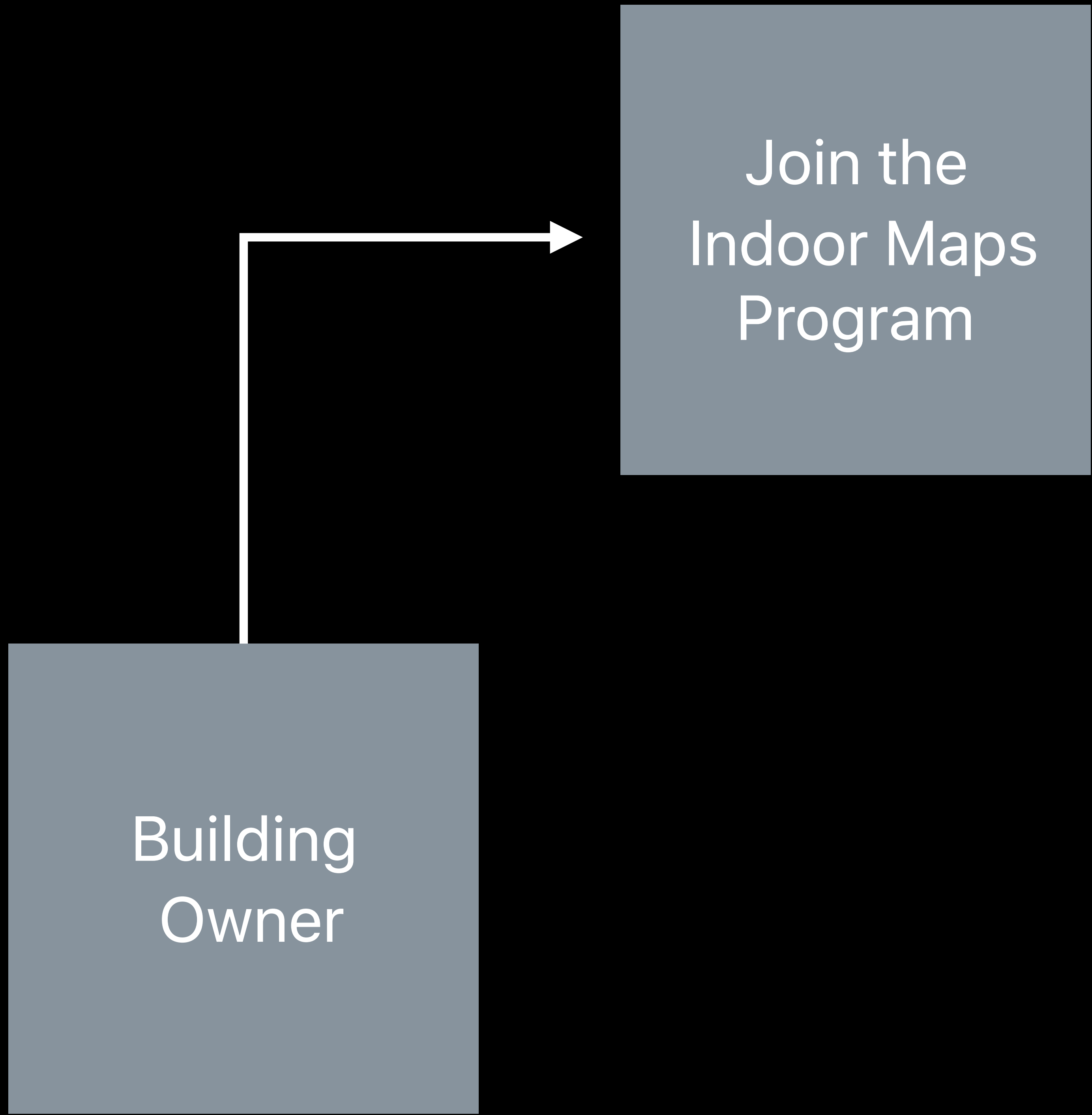


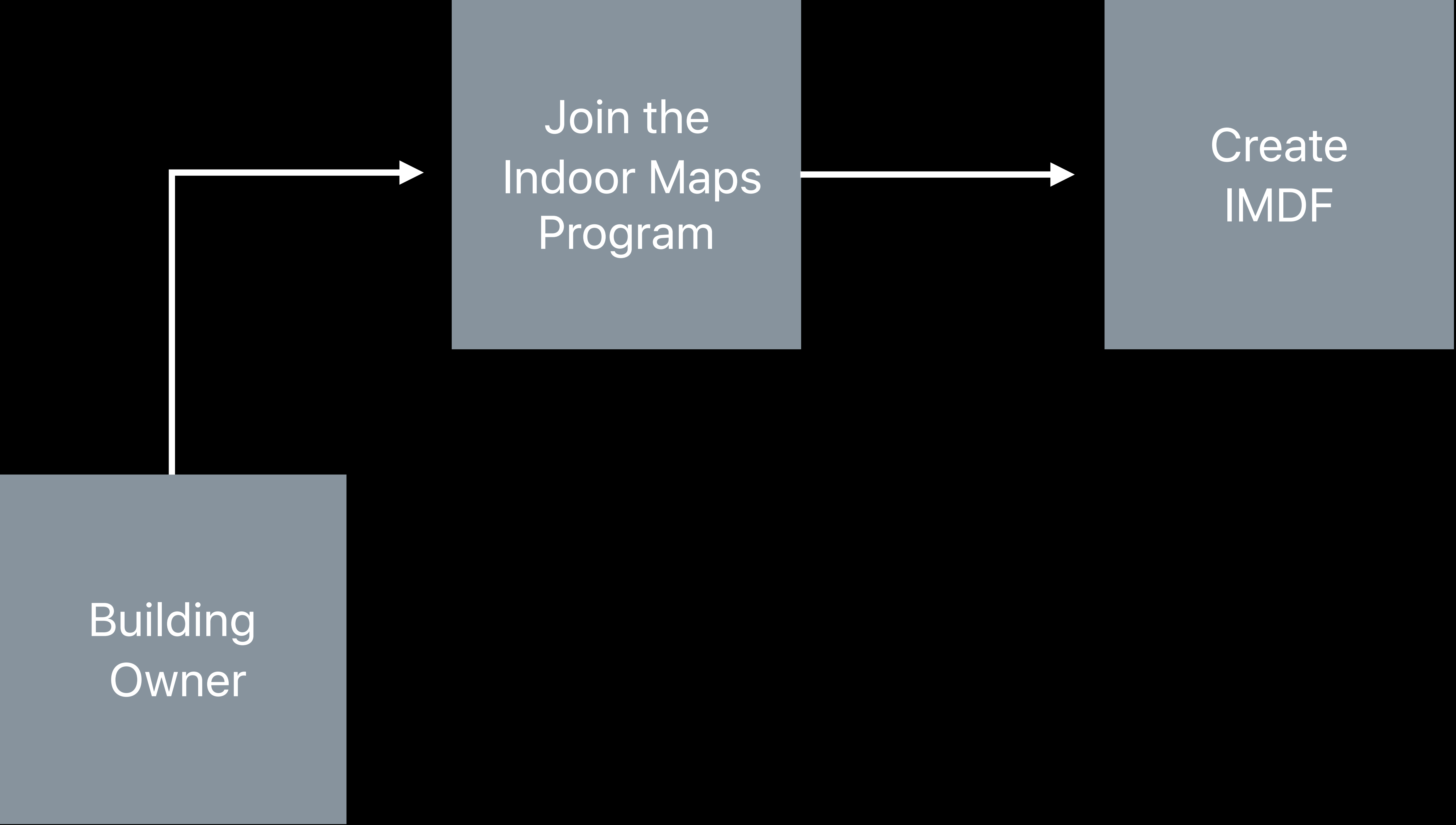


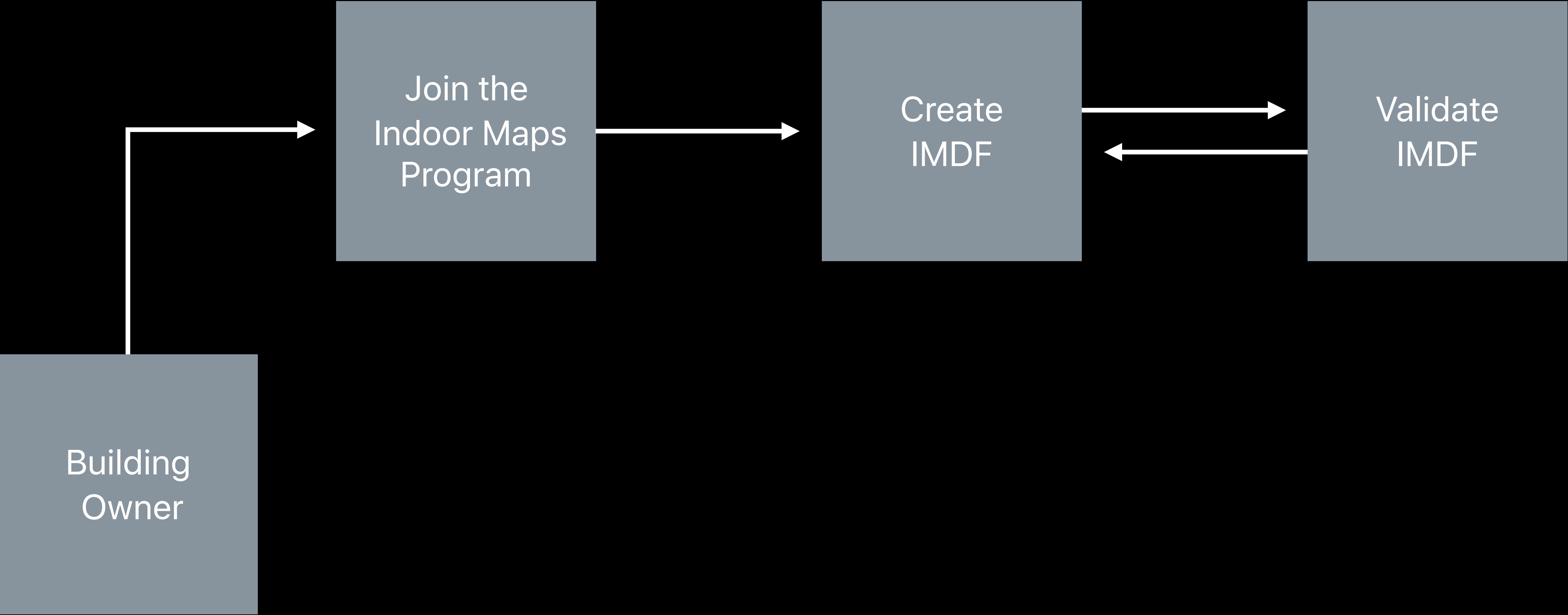


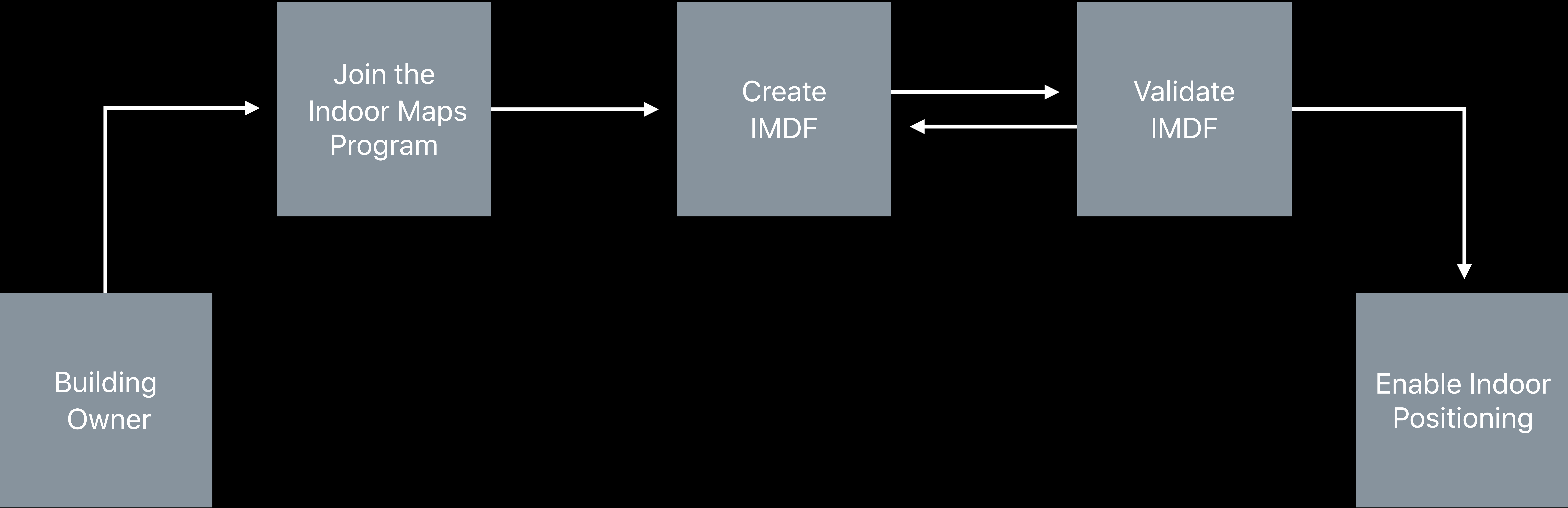


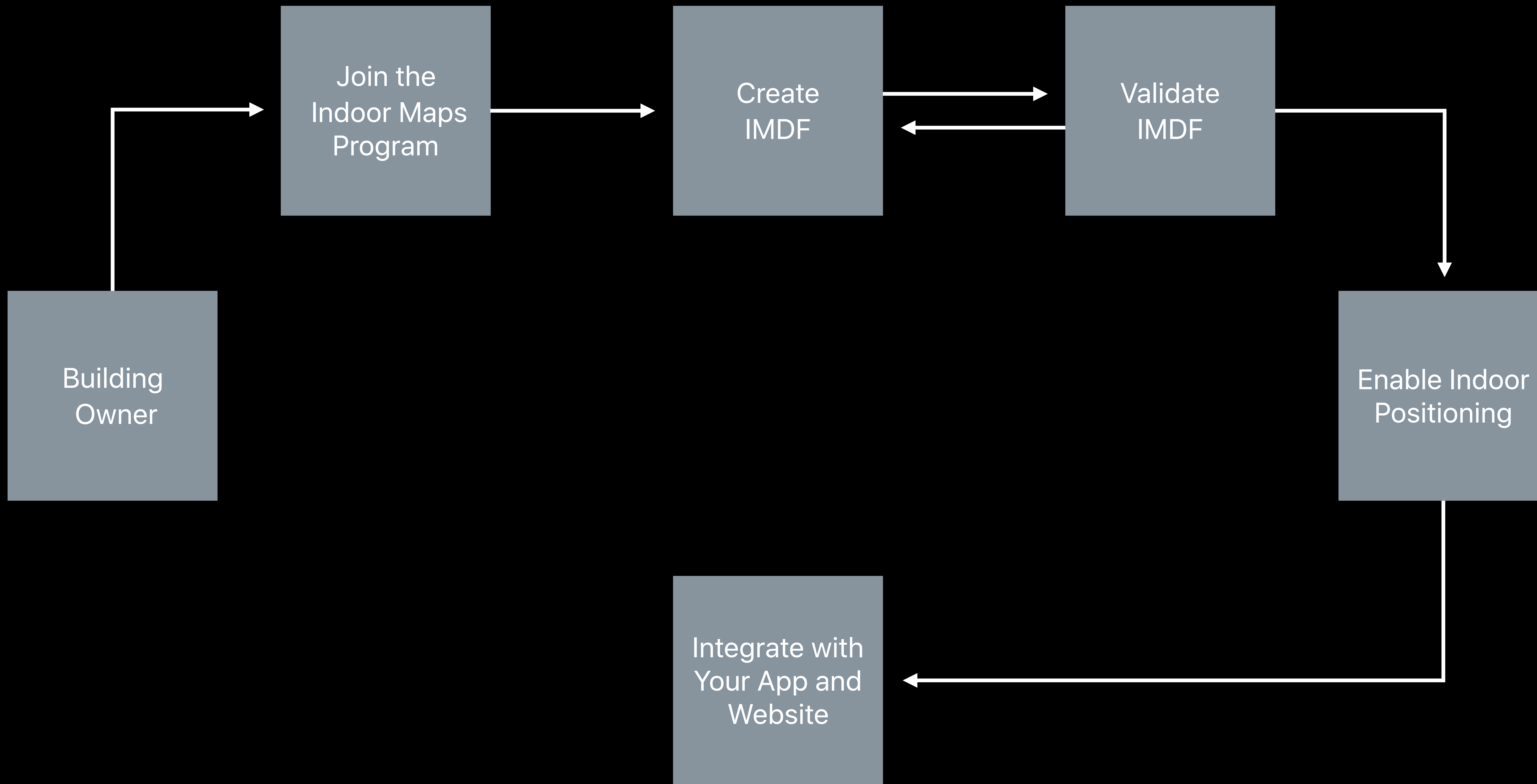
Building
Owner

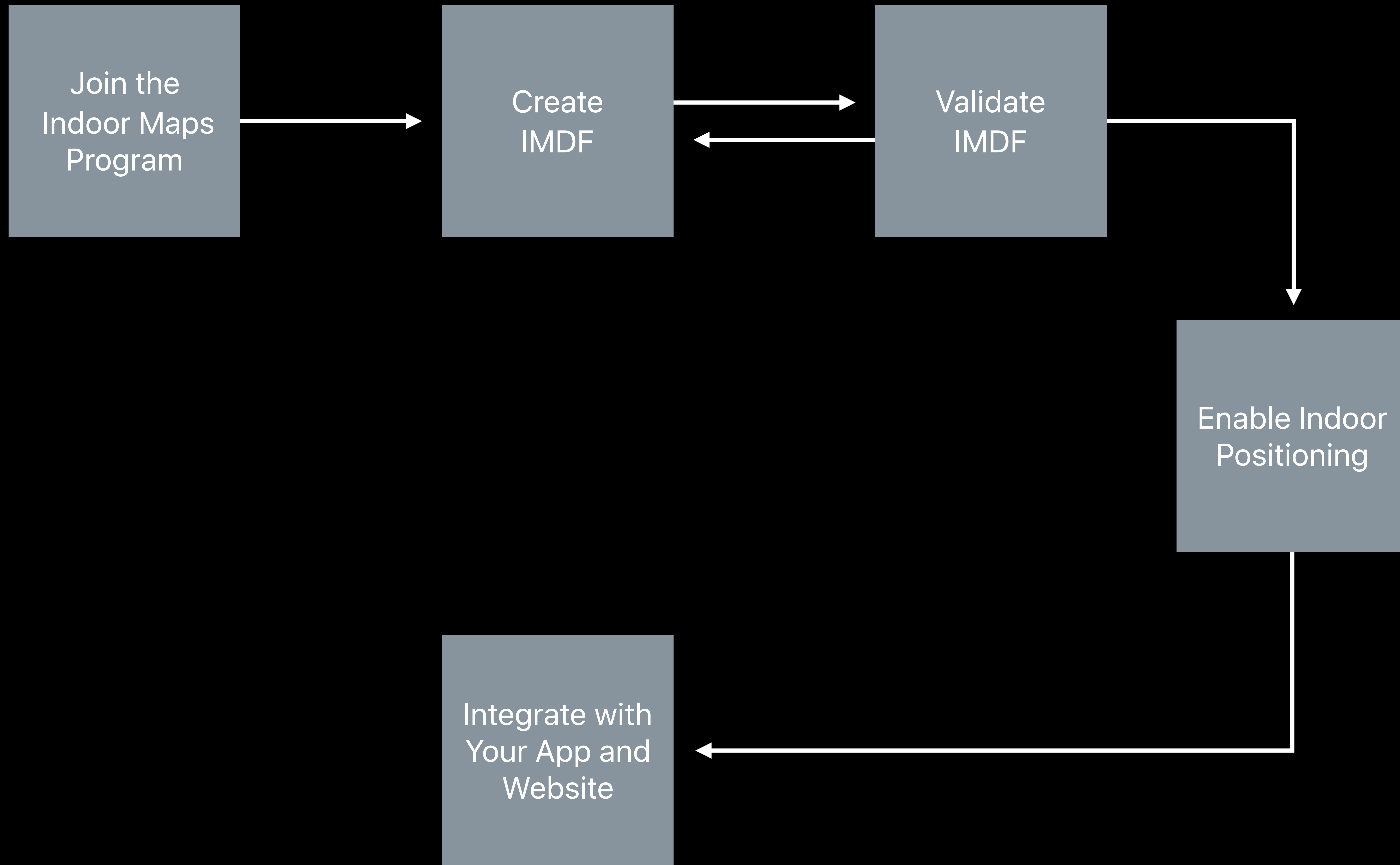


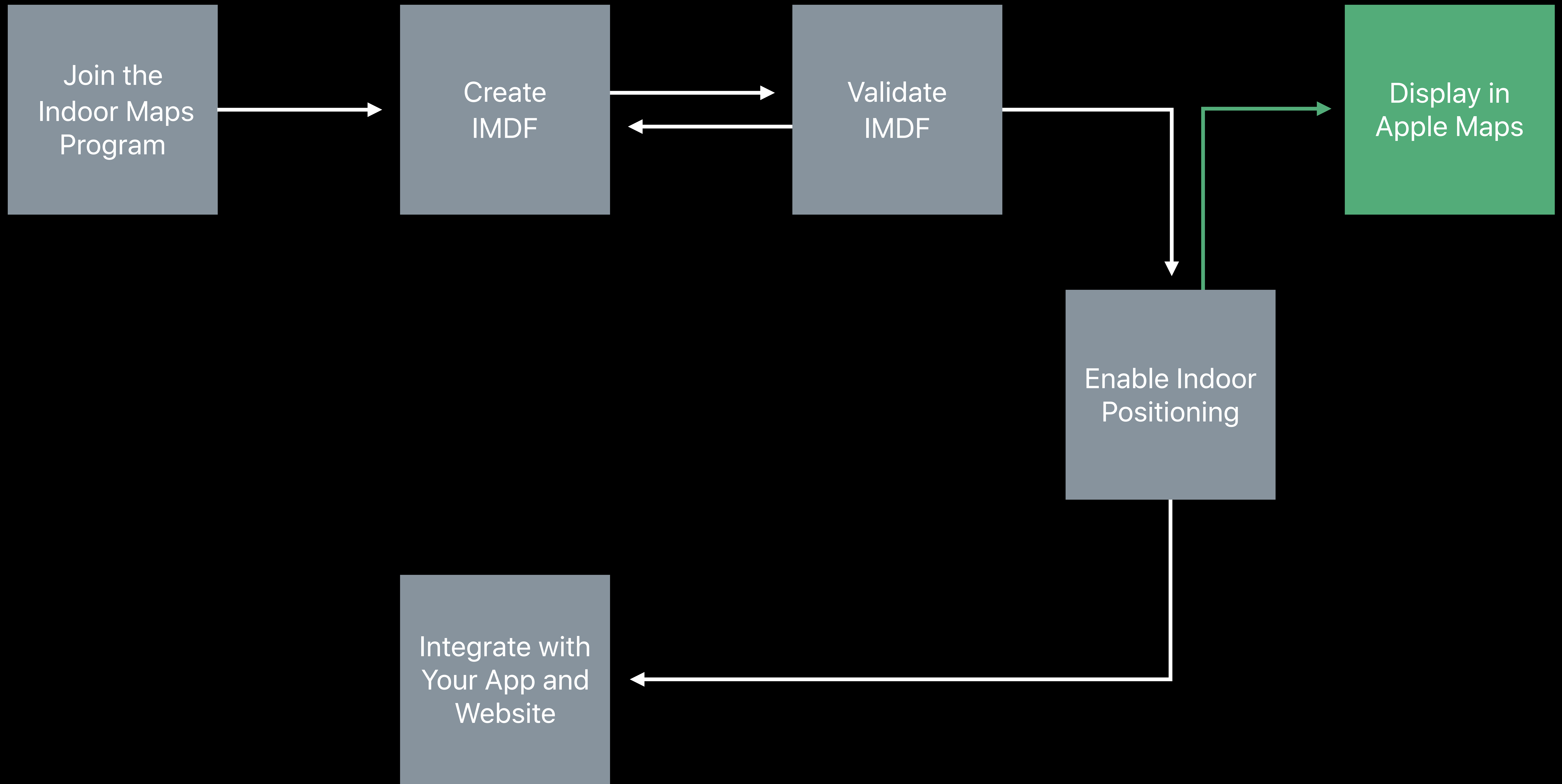


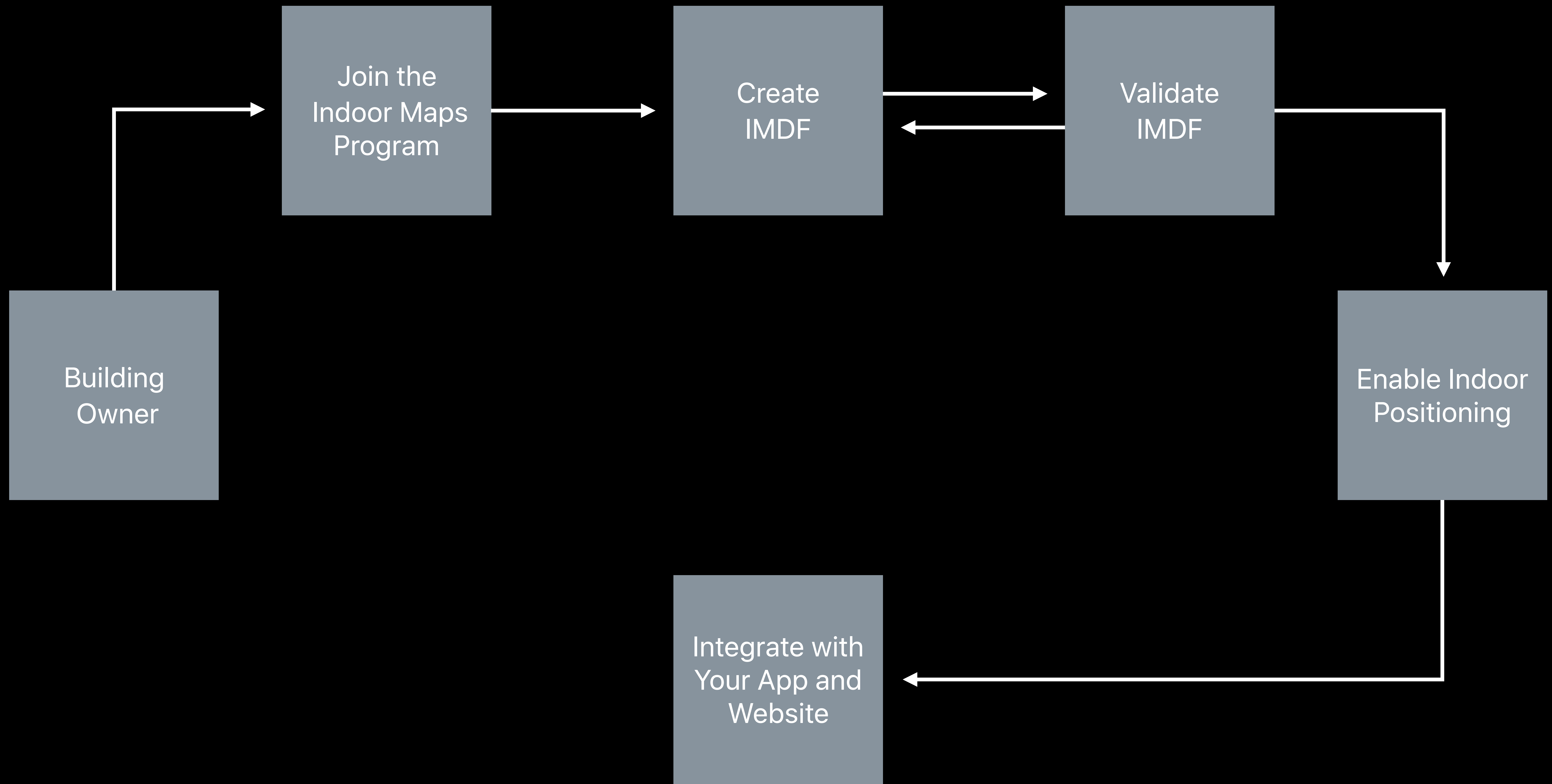


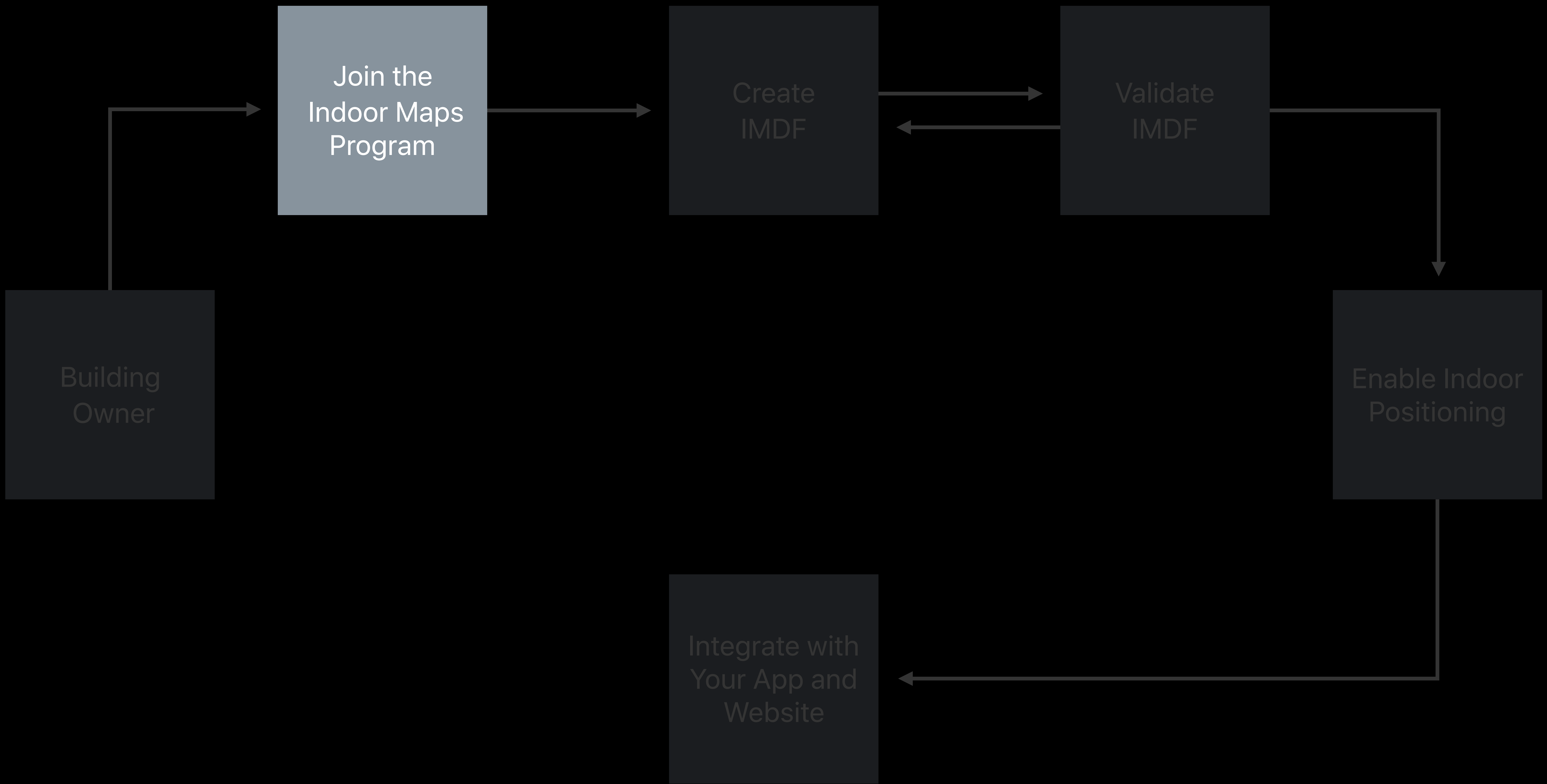












Indoor Maps

Easily create detailed maps of your indoor spaces and let visitors see where they are right in your app. Organizations with large public and private spaces like airports, shopping centers, arenas, hospitals, universities, and private office buildings can register for the Indoor Maps Program. Indoor maps are built using industry standard tools and require only your existing Wi-Fi network to enable GPS-level location accuracy so visitors can navigate your spaces with ease.

Get started



Create standards-based indoor maps

Indoor Mapping Data Format (IMDF) provides a generalized, yet comprehensive data model for any indoor location, creating a basis for orientation, navigation and discovery. IMDF is output as an archive of GeoJSON files. We also provide an easy to use IMDF Sandbox so anyone can view and make minor edits to their IMDF.

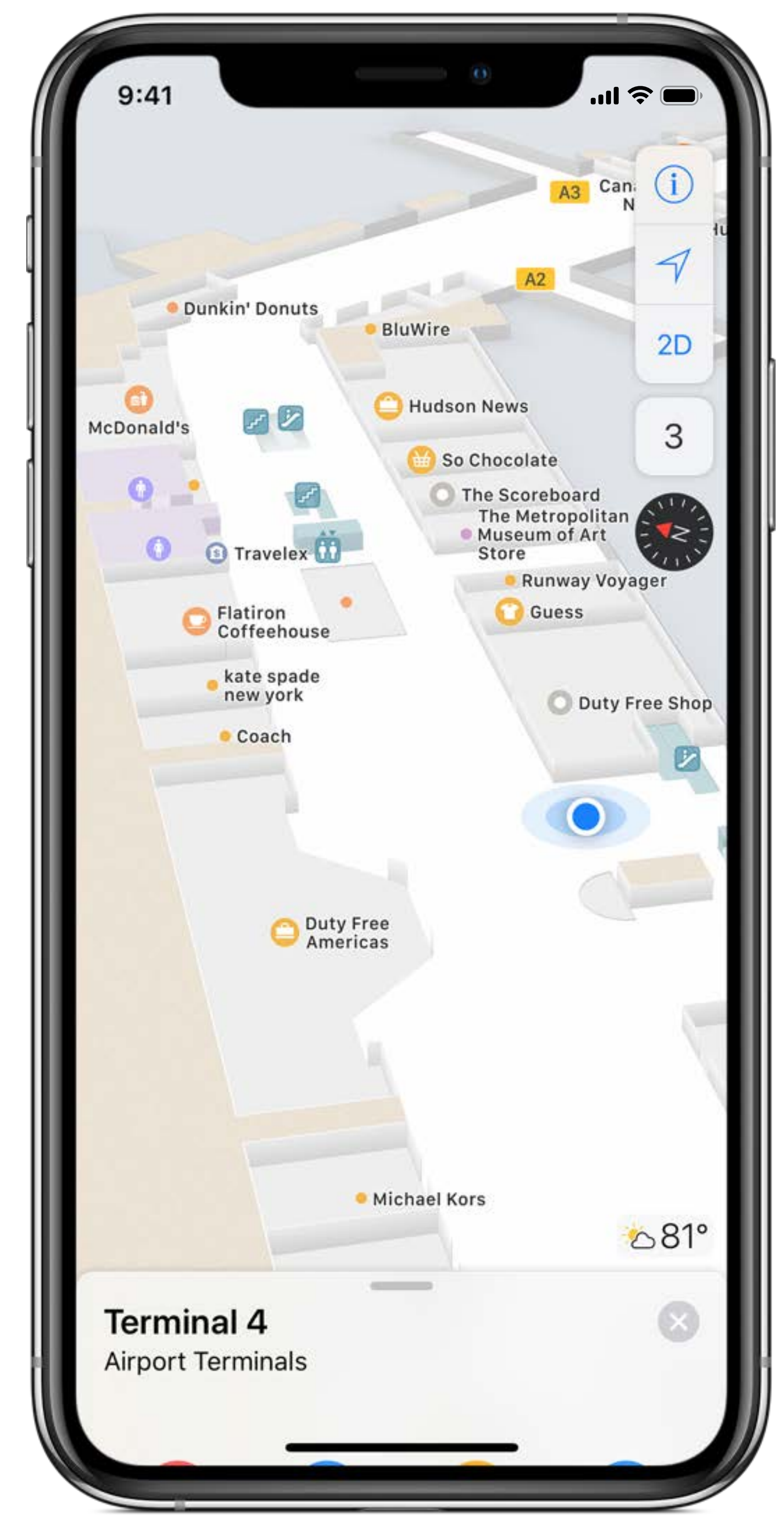
Get started with IMDF [Learn more](#)



Enable indoor positioning

Apple's indoor positioning technology passively uses your existing Wi-Fi infrastructure and requires no additional hardware deployment. This technology achieves GPS-level accuracy in indoor spaces by using the radio frequency (RF) patterns of your Wi-Fi access points. After creating an indoor map using IMDF, simply perform an RF survey of your spaces using Apple's Indoor Survey app to enable this technology.

[< Back](#)

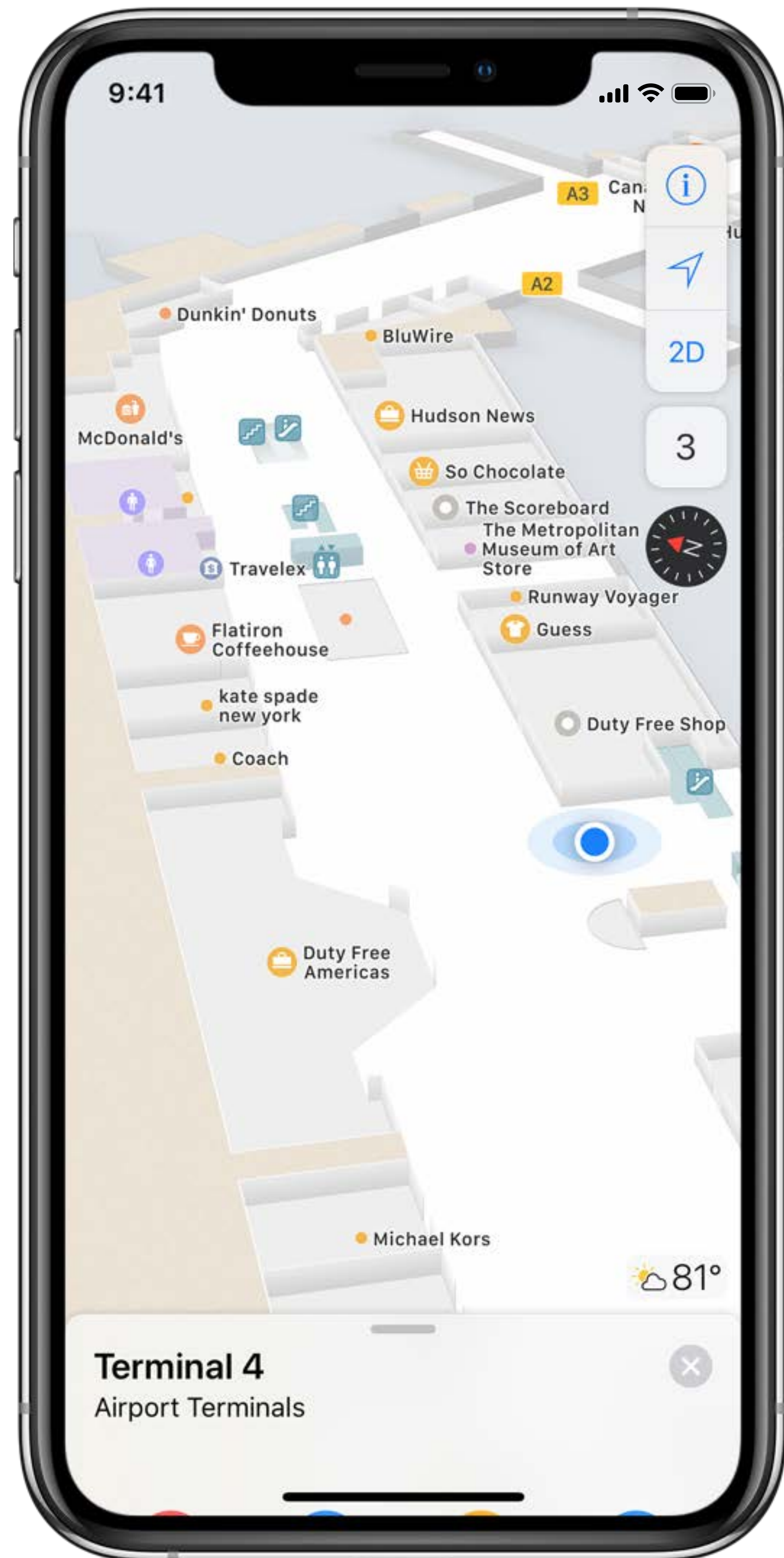


Indoor Maps

Enable your customers to find locations, services, and shops inside the public areas of your property.

Add the "blue-dot" to the indoor maps inside your consumer or enterprise iOS apps.

[Apply](#)



Indoor Maps


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Add the "blue-dot" to the indoor maps inside your consumer or enterprise iOS apps.


Apply


Connected Services

[Manage services](#)

 Indoor Maps Program
Indoor Maps

Victoria Airport Auth...



 Organization

 Team Members

Victoria Airport Authority

[← Back](#)

Team Members +

-  **Alexis Kay**
Administrator ●
-  **Suzanne Steele**
Administrator ●



No team member selected



Invite a team member

Choose which type of team member to invite

- Individual**
Invite a single person to join this organization
- Organization**
Invite another organization to join

Cancel

Next

Your Progress

- Invite a team member
- Personal Details
- Roles and Permissions




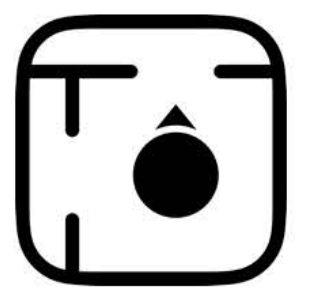

Alexis Kay

Roles and Permissions

Choose access privileges

- No access privileges
This team member will be a contact person without access
- Assign access privileges
Allow this team member to sign into this organization account

Selected roles (5)

-  Administrator
Full organization permissions
-  Reader
Can view all profiles and service accounts
-  Team Members - HR Administrator
Can view and edit team members
-  Indoor Maps - Map Maker
Can read and upload Indoor Maps
-  Indoor Maps - Surveyor
Can read Indoor Maps and access Survey app

Your Progress

- Invite a team member
- Personal Details
- Roles and Permissions

Cancel

Next

Alexis Kay

Venue Permissions

Choose venues

- All organization venues
This team member will have access to all venues your organization has
- Custom venues
This team member will have access to custom chosen venues

🔍 Search for venues...

-  Administrative Building 1
1640 Electra Blvd, Sidney
-  Administrative Building 2
1640 Electra Blvd, Sidney

Selected venues (1)

-  Victoria International Airport
1640 Electra Blvd, Sidney

Your Progress


- Invite a team member
- Personal Details
- Roles and Permissions

Cancel

Next



Connected Services

[Manage services](#)




Indoor Maps Program
Indoor Maps

Victoria Airport Auth...

-  Organization
-  Team Members

Claim your location

 This building can be enabled with Apple Indoor Positioning using an IMDF your organization creates. The indoor map for this property is eligible for display in Apple Maps.

Location Details

[Change Location](#)

LOCATION



Victoria International Airport
201-1640 Electra Blvd, Sidney

Apple has permission to add my indoor maps to Apple Maps

No Yes

Cancel

Request approval

Victoria Airport Authority

[Back](#)

Indoor Maps +

Search

Victoria International Airport
201-1640 Electra Blvd, Sidney

Victoria International Airport

Advanced ▾

STATUS

- File upload and validation** } Your file is being validated
- Geo-referencing
- Ready for survey
- Indoor Positioning is Live

Uploaded Files

+ Add File

FILE NAME ▾	DATE CREATED ▾	STATUS ▾	ACTIONS
Victoria_IMDF.imdf	05/28/2019	Validating	Open in IMDF Sandbox ↗ More ▾

- Download Victoria_IMDF.imdf
- Download IMDF validation report
- Download geo-referencing report
- Download geo-referenced IMDF
- [Open geo-ref. file in IMDF Sandbox ↗](#)
- Download indoor survey report

Location Details

LOCATION

Victoria International Airport
201-1640 Electra Blvd, Sidney

PERMISSION FOR
No

Additional Information

TEAM MEMBERS

Alexis Kay, Suzanne Steele

[View in Team Members ↗](#)

VENUE ID

08f76f15-02e5-11e8-876b-7b38153fa70f

[Upload API Documentation ↗](#)

Join the Indoor Maps Program

Best practices

Join the
Indoor Maps
Program

Join the Indoor Maps Program

Best practices

For large buildings, public or private

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Indoor Maps
Program

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Best practices

For large buildings, public or private

Enrollment includes organization verification

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Organization controls member access

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Some locations eligible to display in Apple Maps

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Program

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Best practices

For large buildings, public or private

Enrollment includes organization verification

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Some locations eligible to display in Apple Maps

Display IMDF using MapKit and MapKit JS

Join the
Indoor Maps
Program

Join the Indoor Maps Program

Best practices

For large buildings, public or private

Enrollment includes organization verification

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Some locations eligible to display in Apple Maps

Display IMDF using MapKit and MapKit JS

IMDF is used to enable indoor positioning

Join the
Indoor Maps
Program

Join the Indoor Maps Program

Best practices

For large buildings, public or private

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Organization controls member access

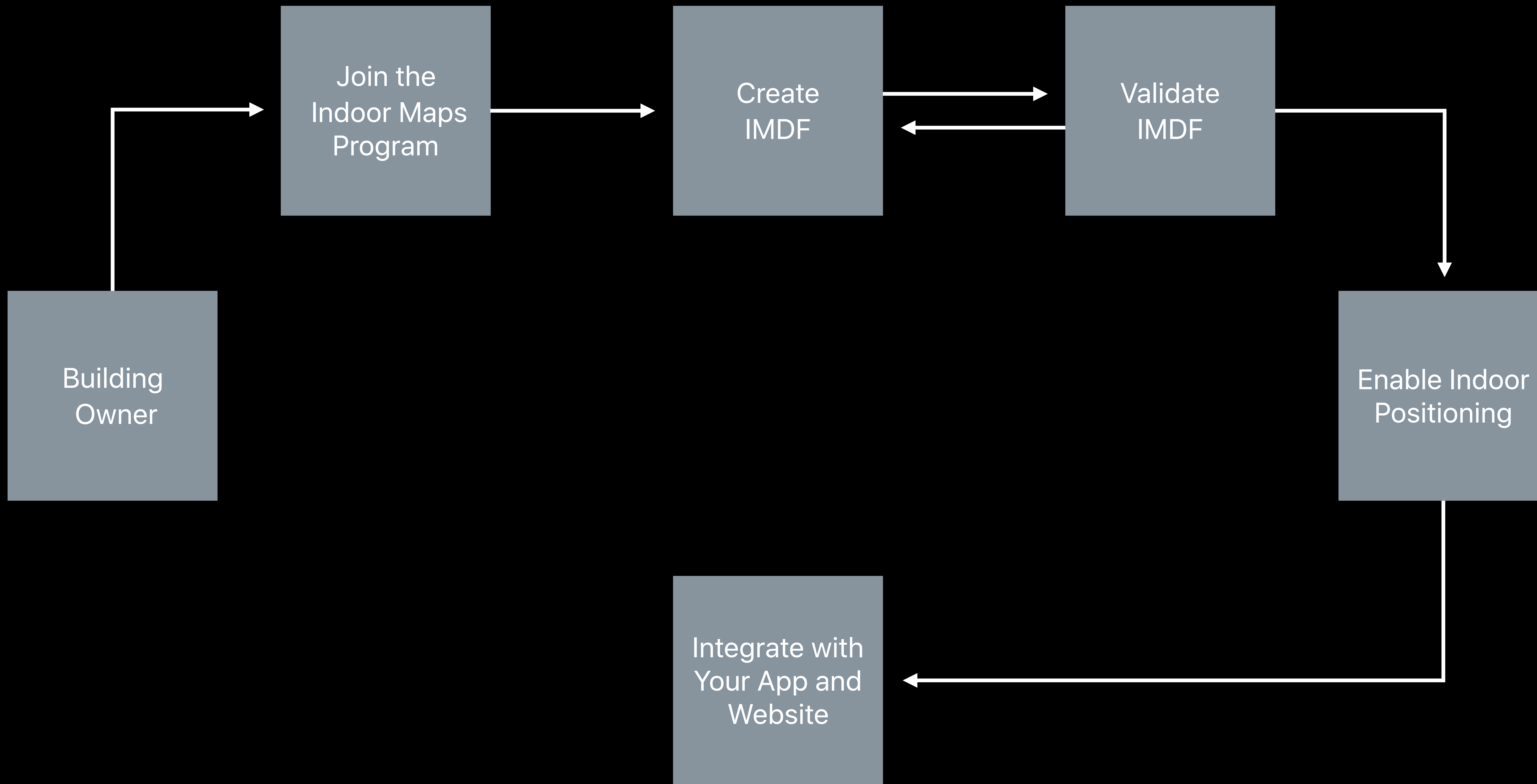
Some locations eligible to display in Apple Maps

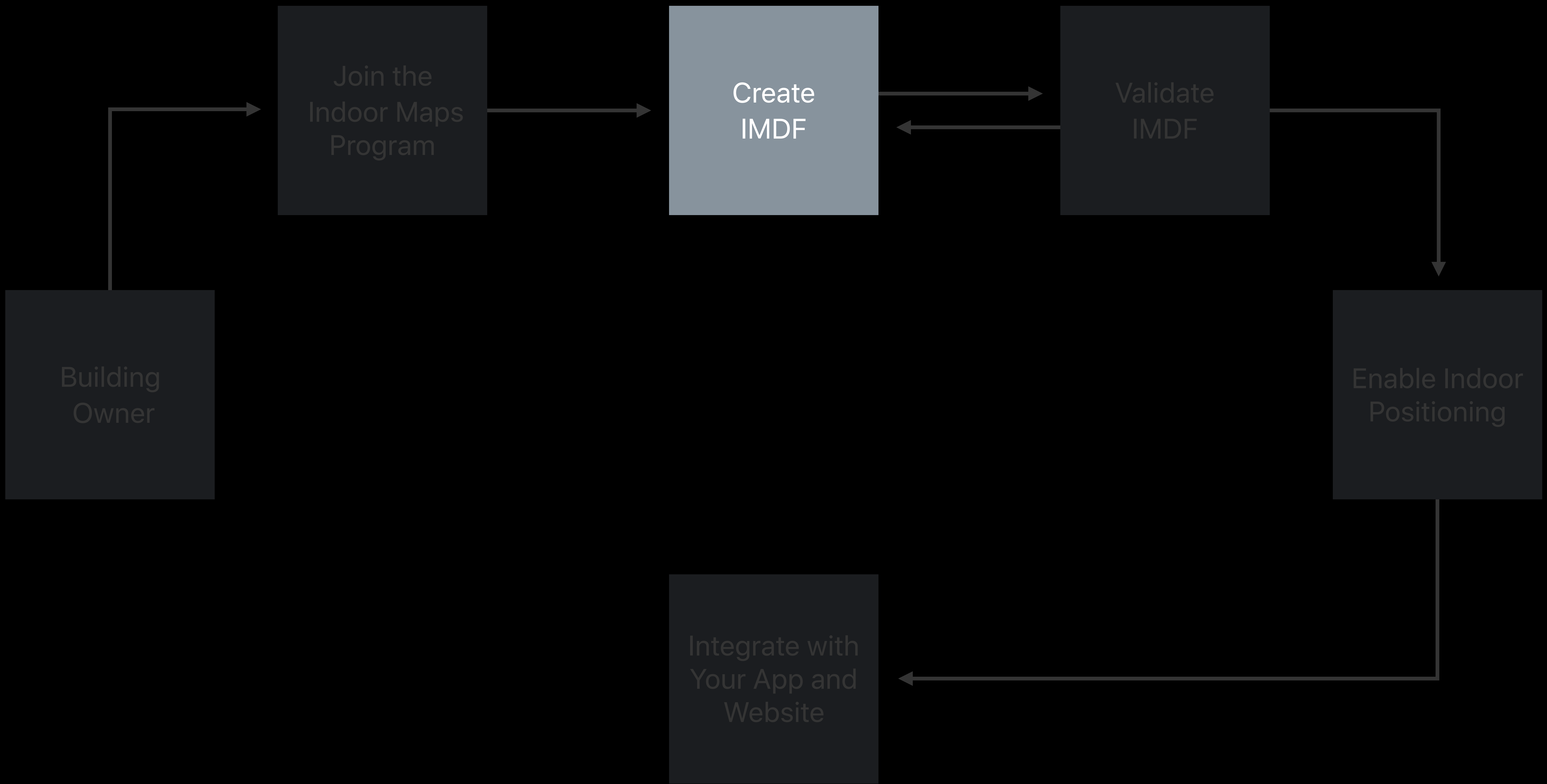
Display IMDF using MapKit and MapKit JS

IMDF is used to enable indoor positioning

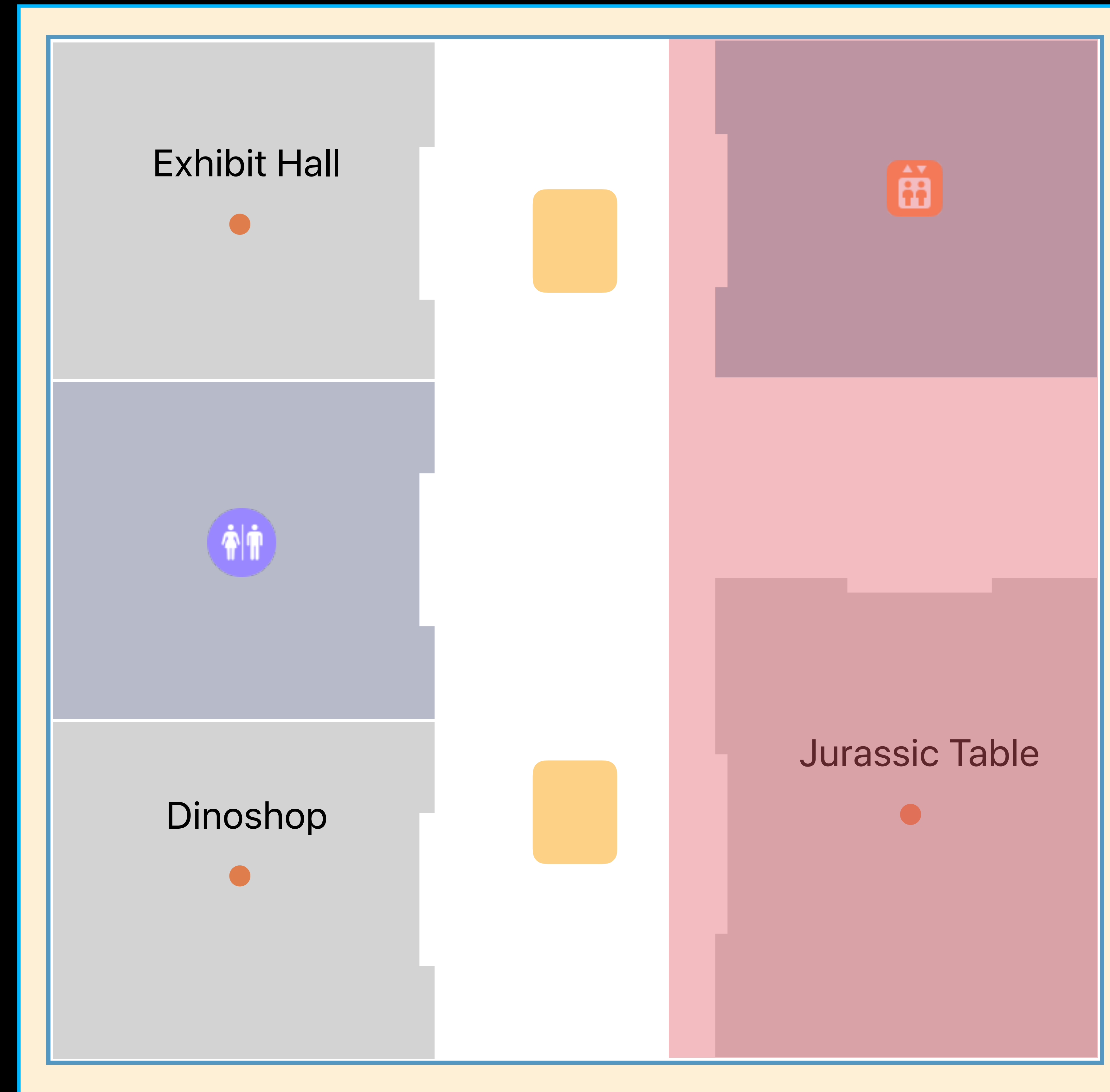
Use GIS, BIM and other tools to create IMDF

Join the
Indoor Maps
Program

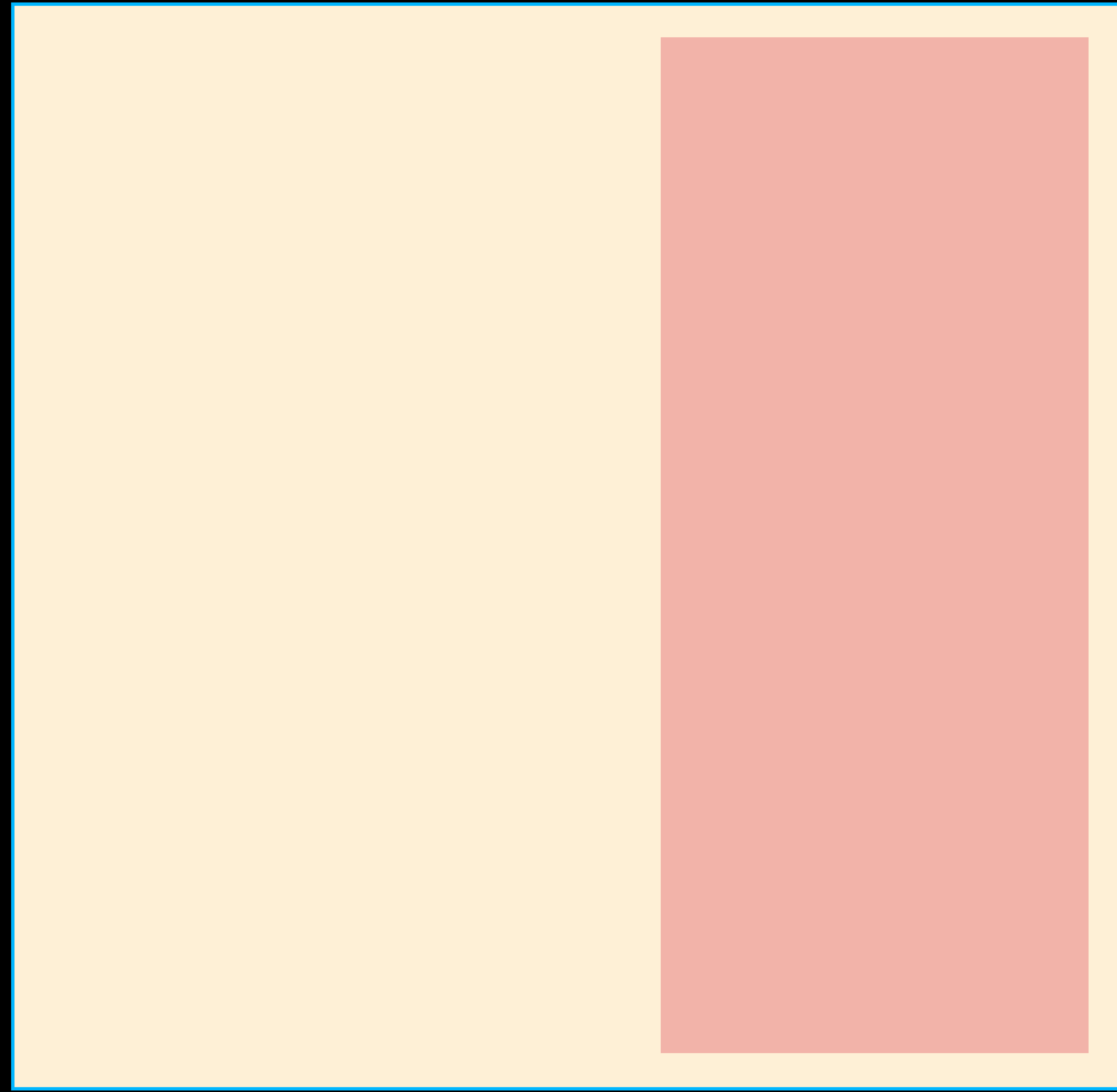




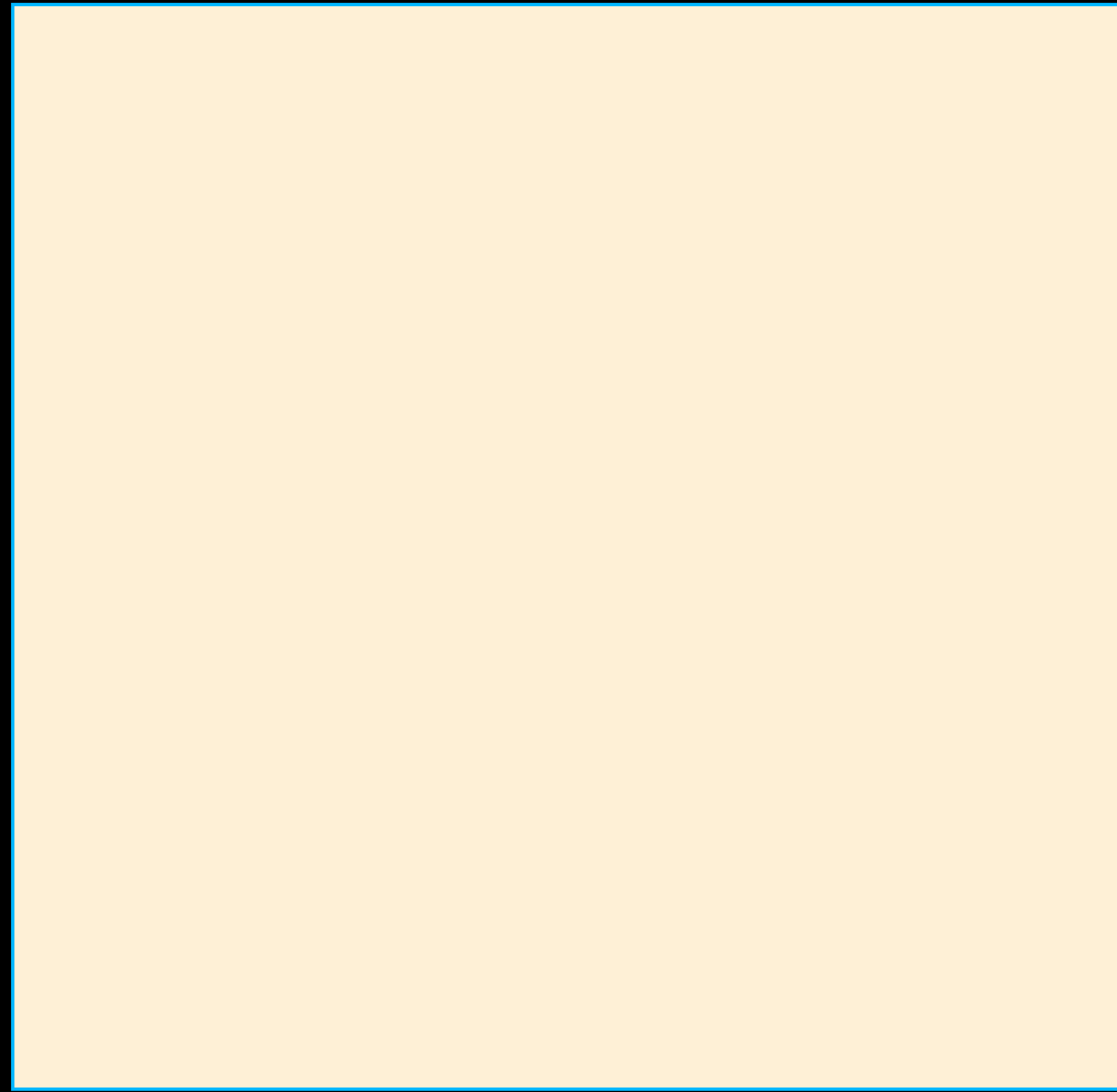
Indoor Map



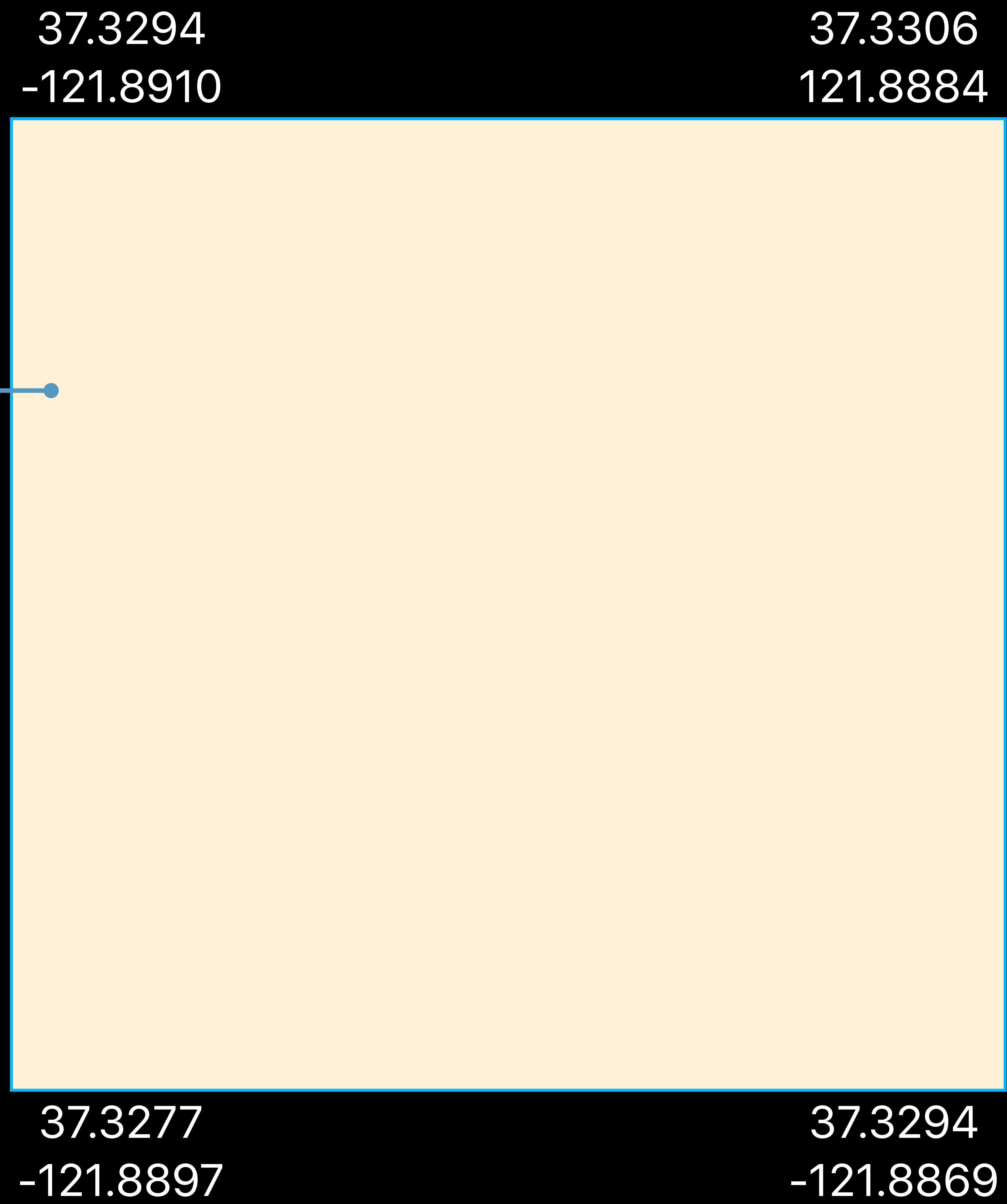
Indoor Map



Indoor Map



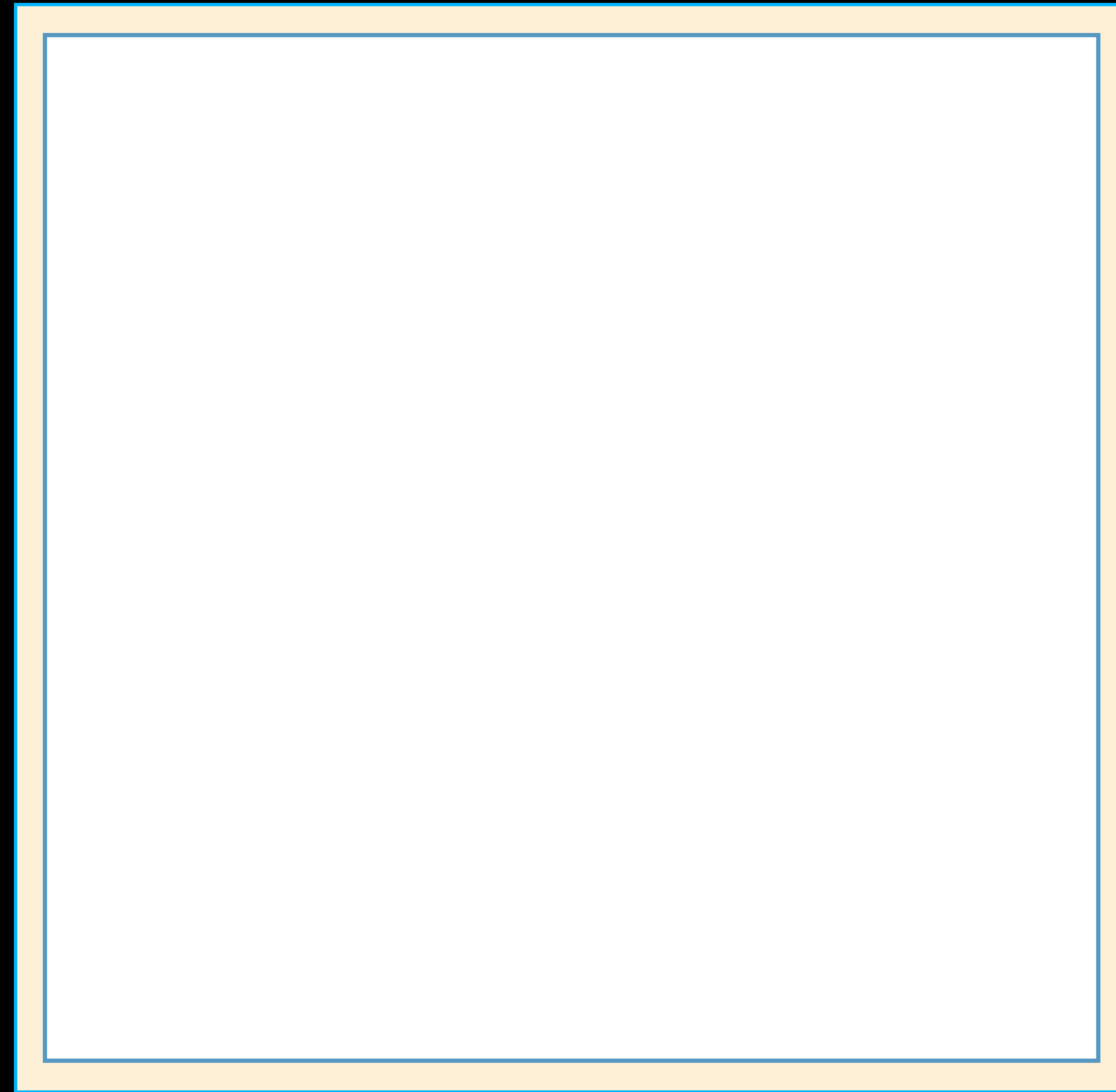
Indoor Map



Indoor Map

Building Footprint

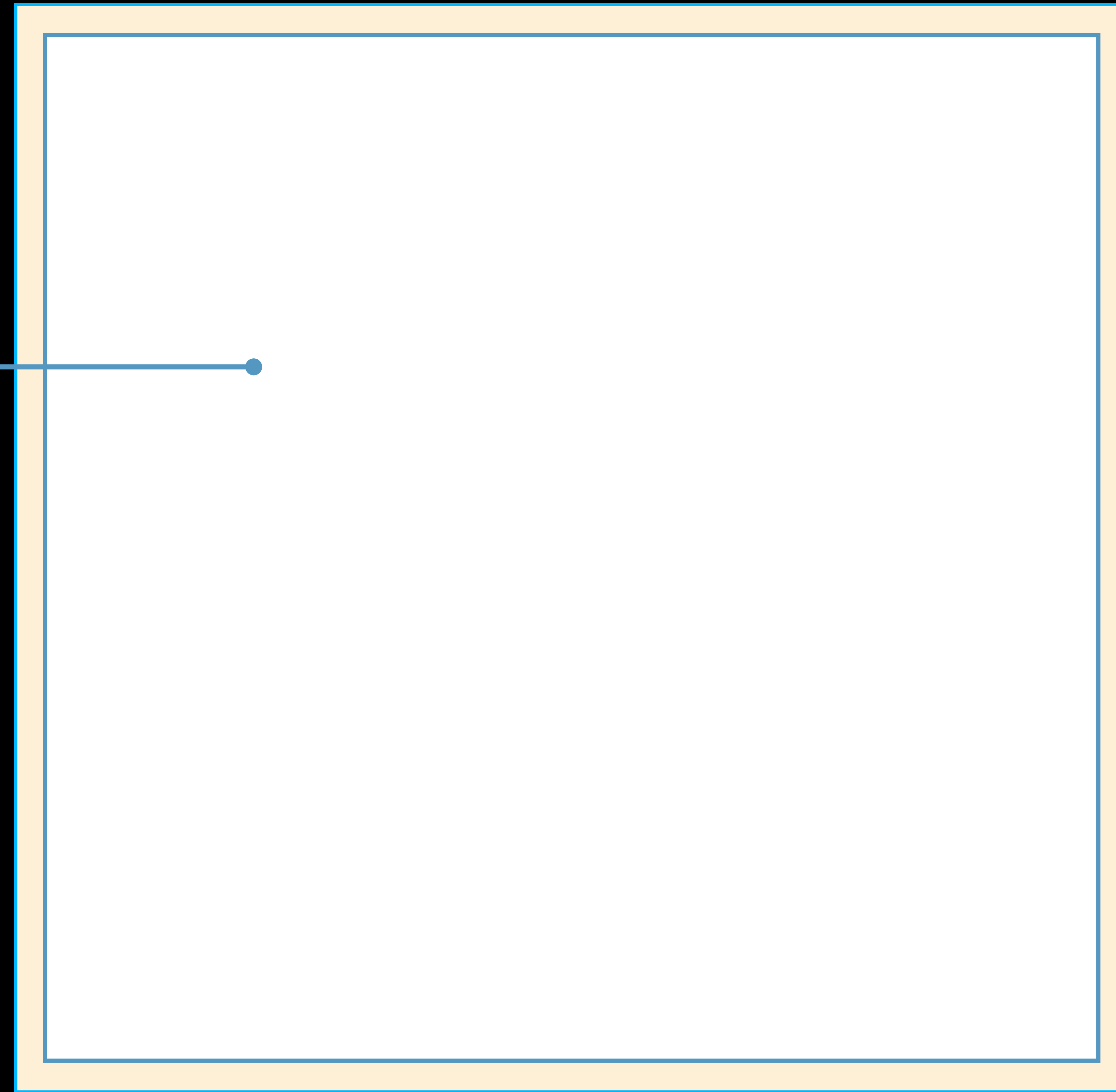
Level



Indoor Map

Building Footprint

Level

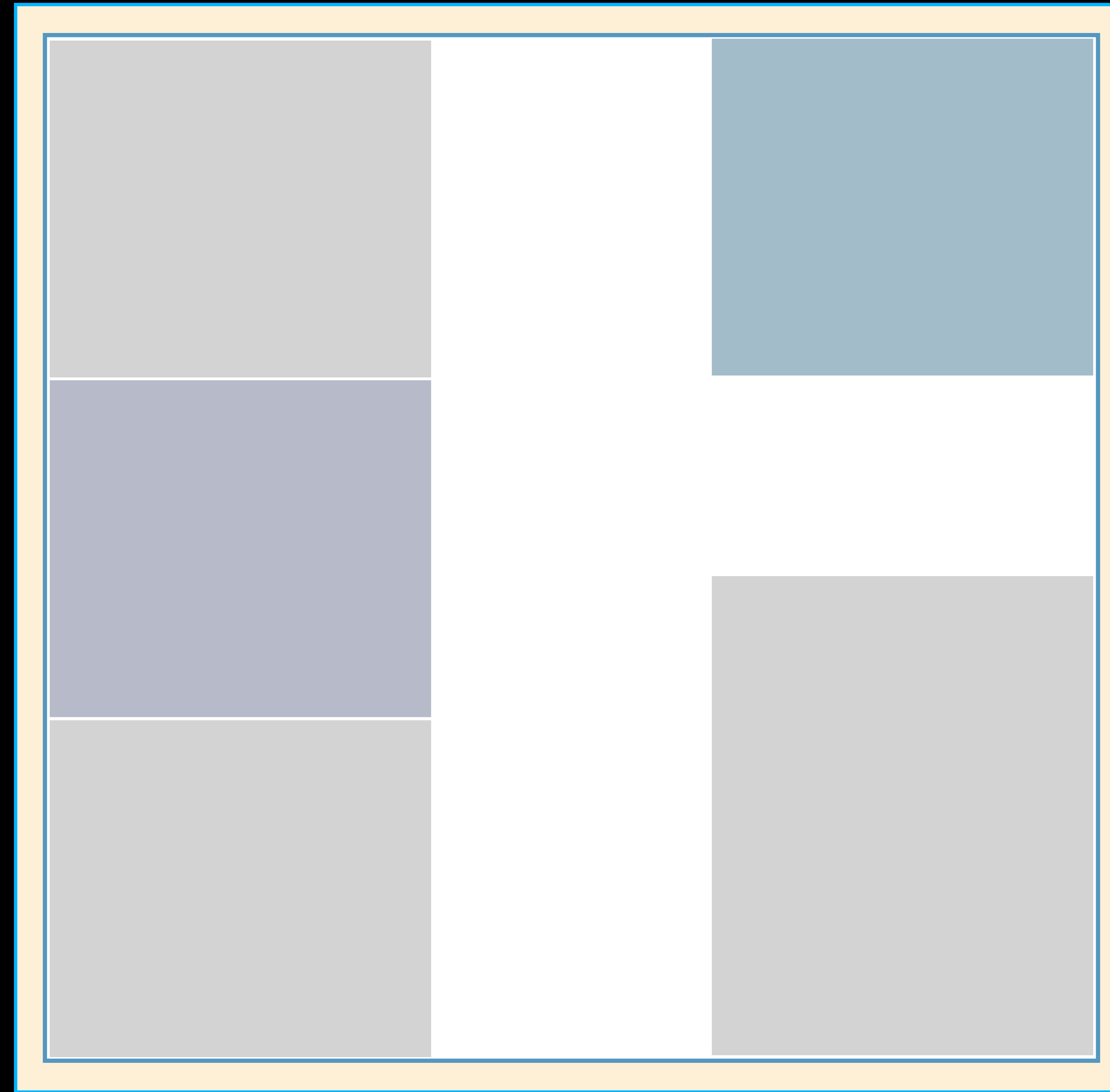


Indoor Map

Building Footprint

Level

Units

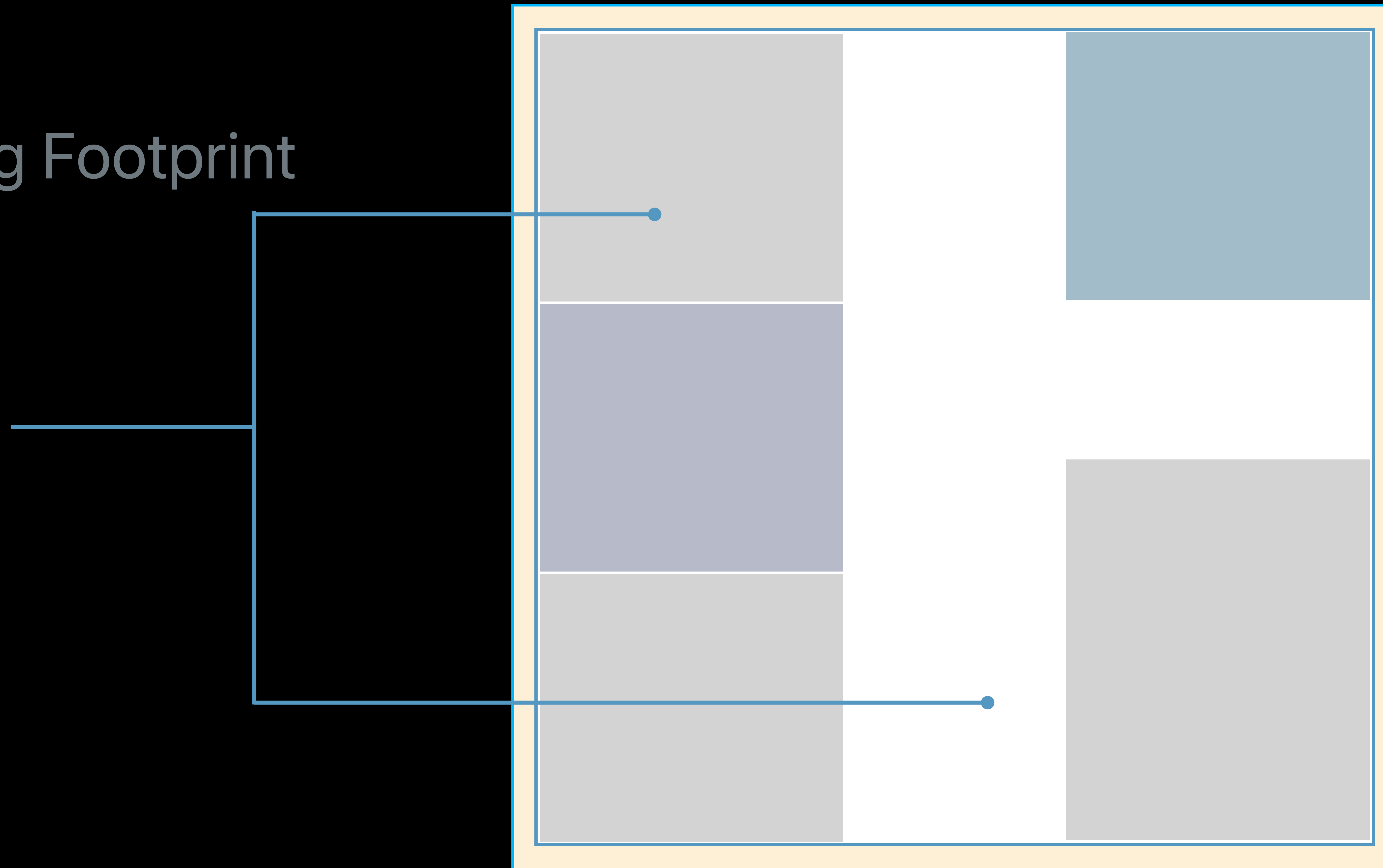


Indoor Map

Building Footprint

Level

Units



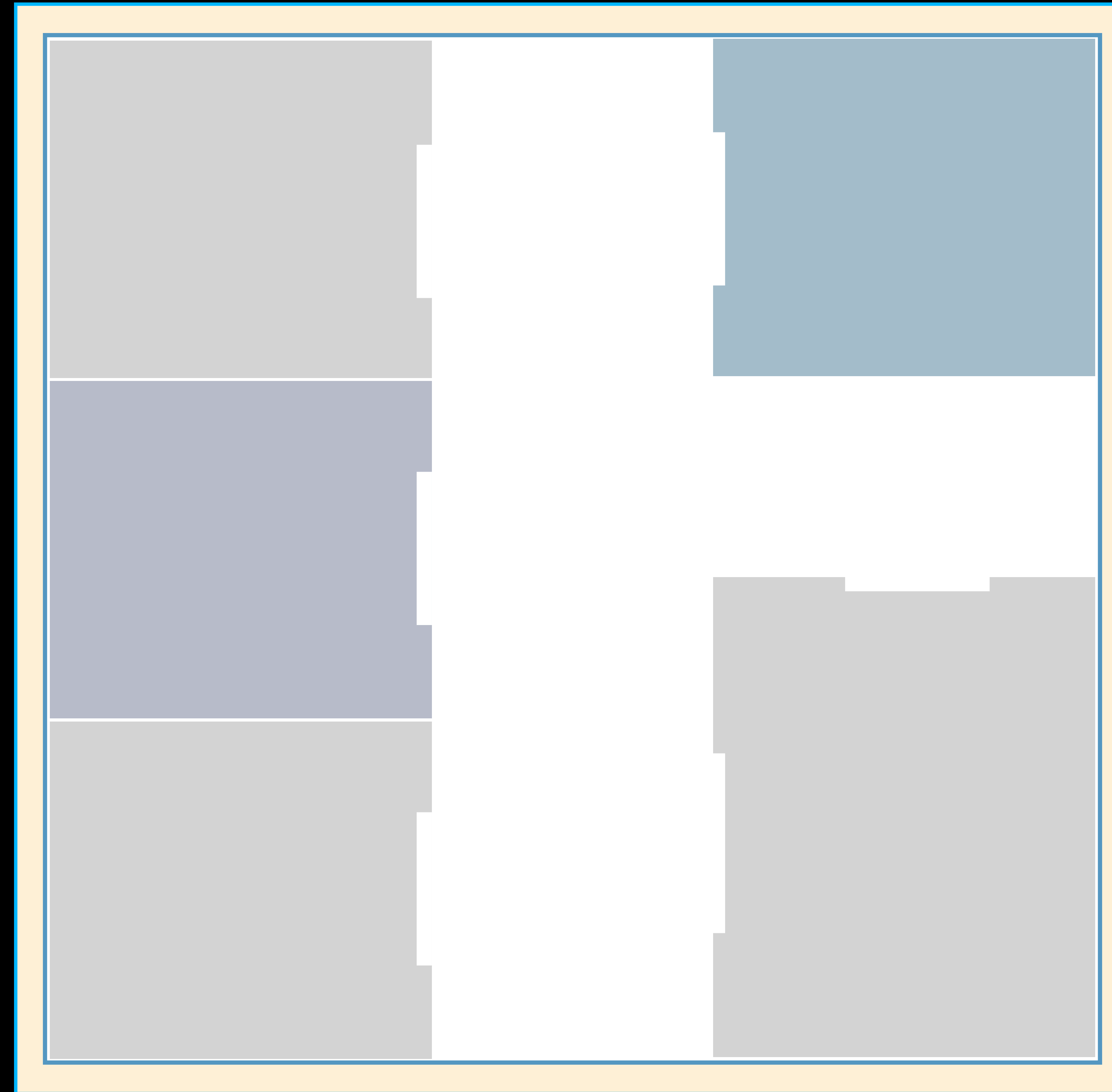
Indoor Map

Building Footprint

Level

Units

Openings



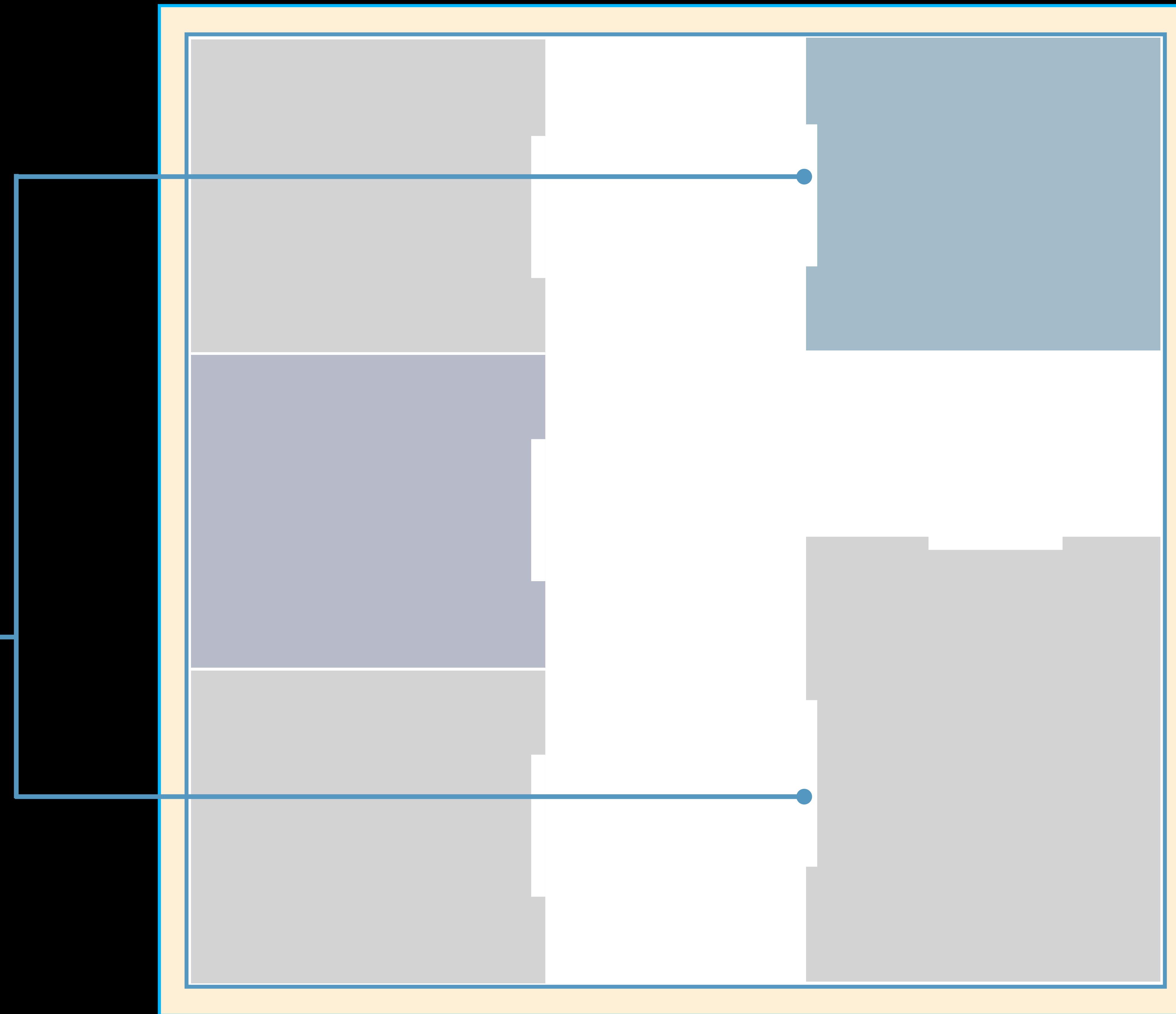
Indoor Map

Building Footprint

Level

Units

Openings



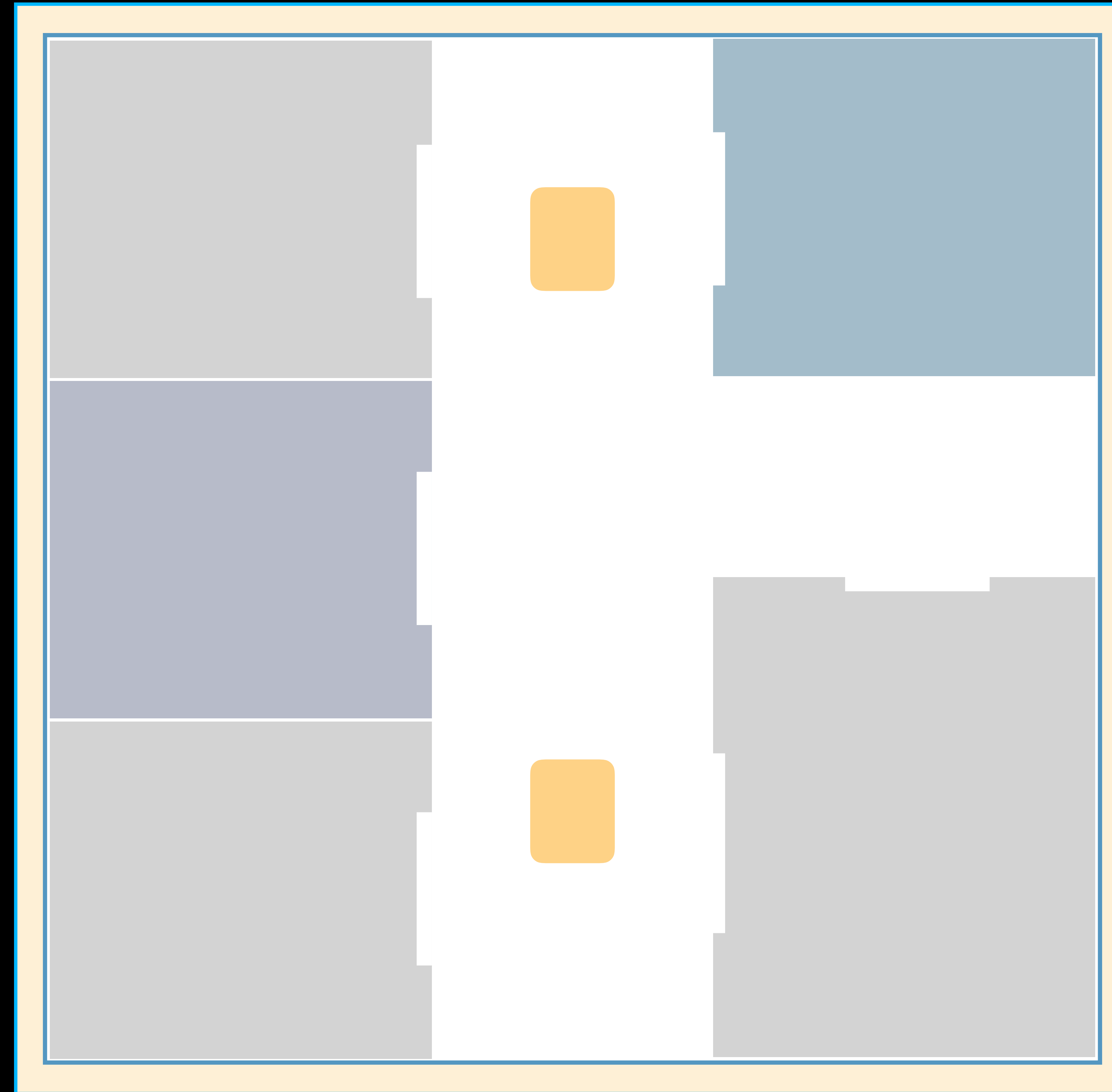
Indoor Map

Building Footprint

Level

Units

Openings



Kiosks

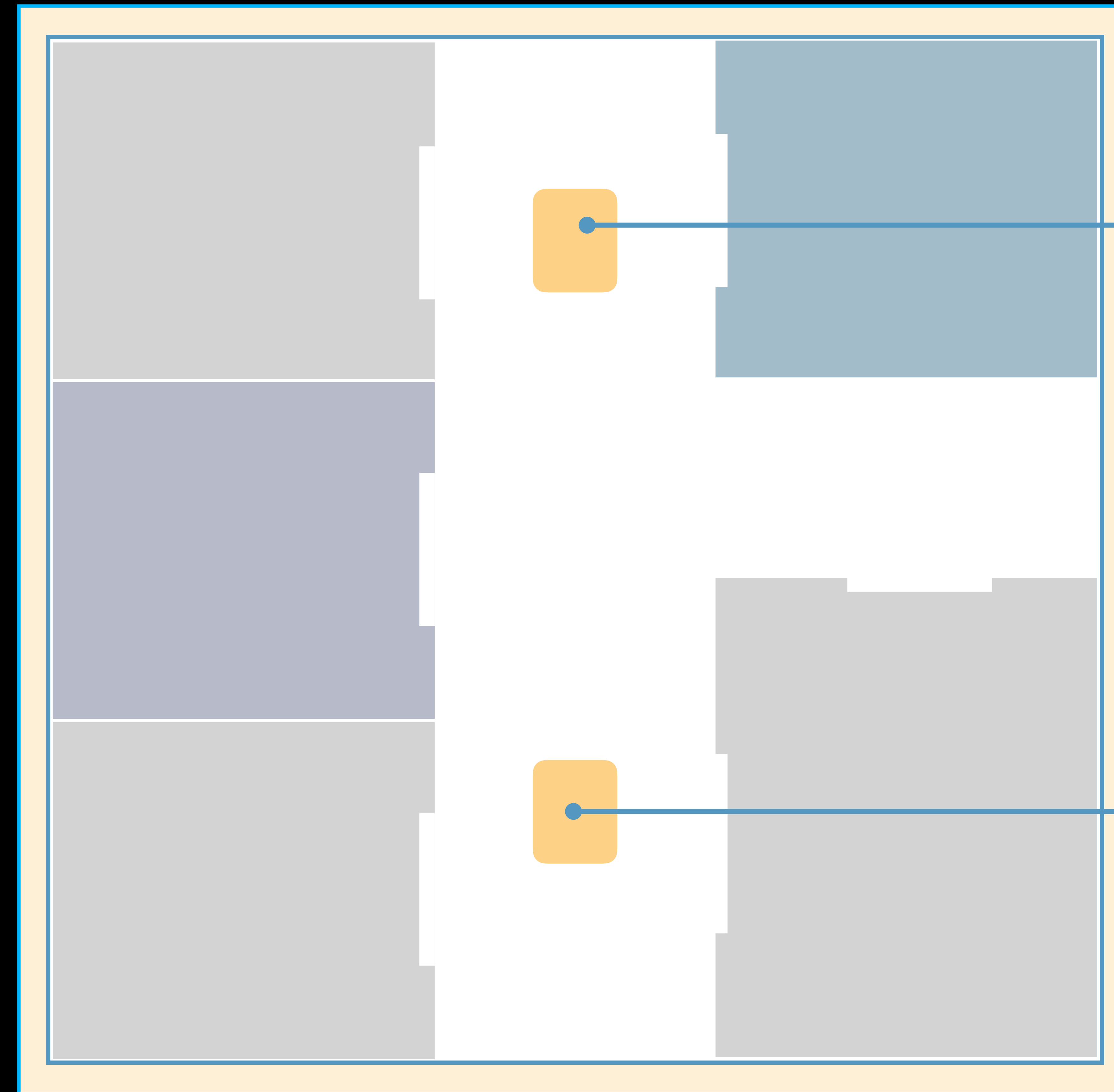
Indoor Map

Building Footprint

Level

Units

Openings



Kiosks

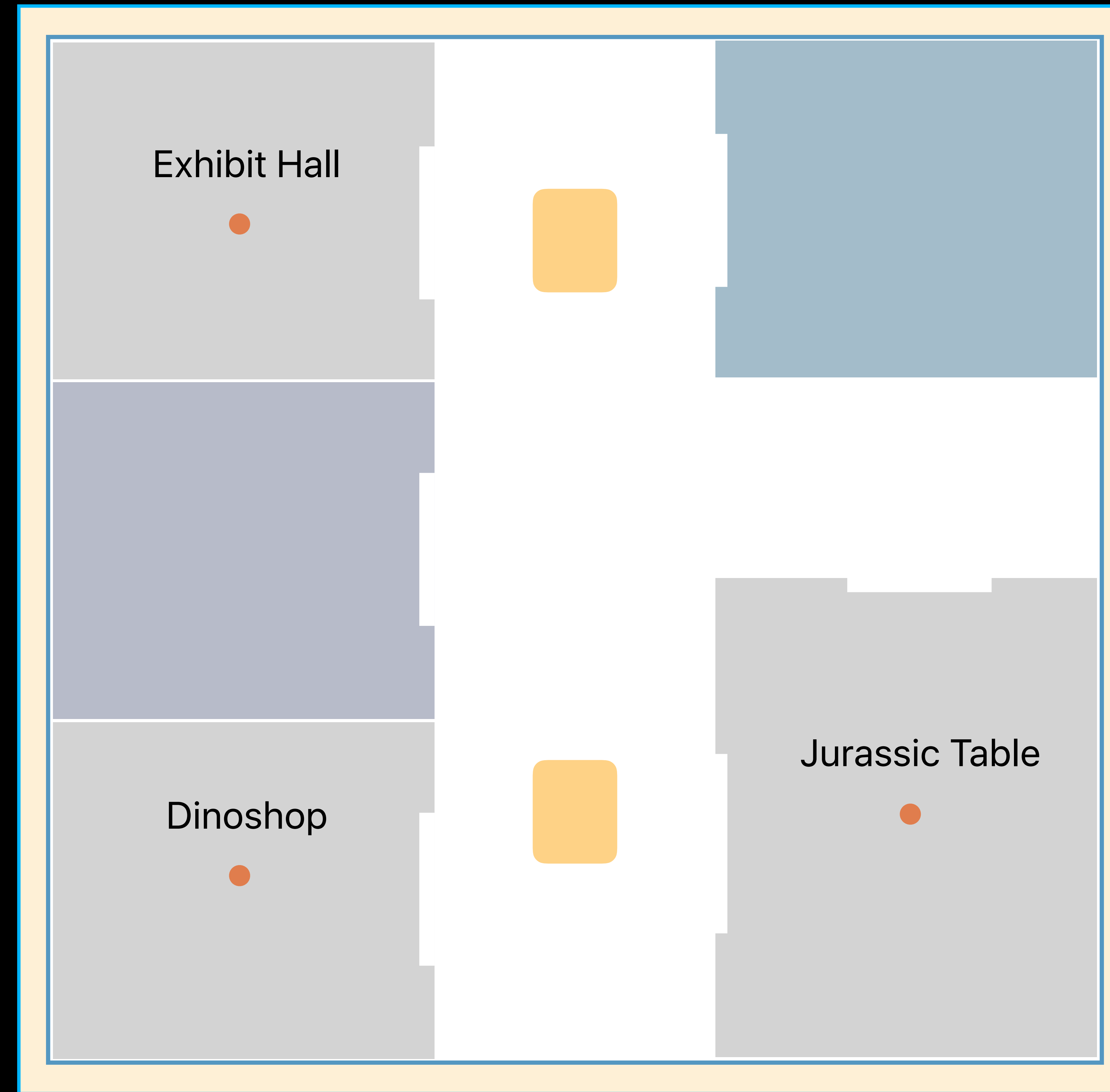
Indoor Map

Building Footprint

Level

Units

Openings



Kiosks

Labels

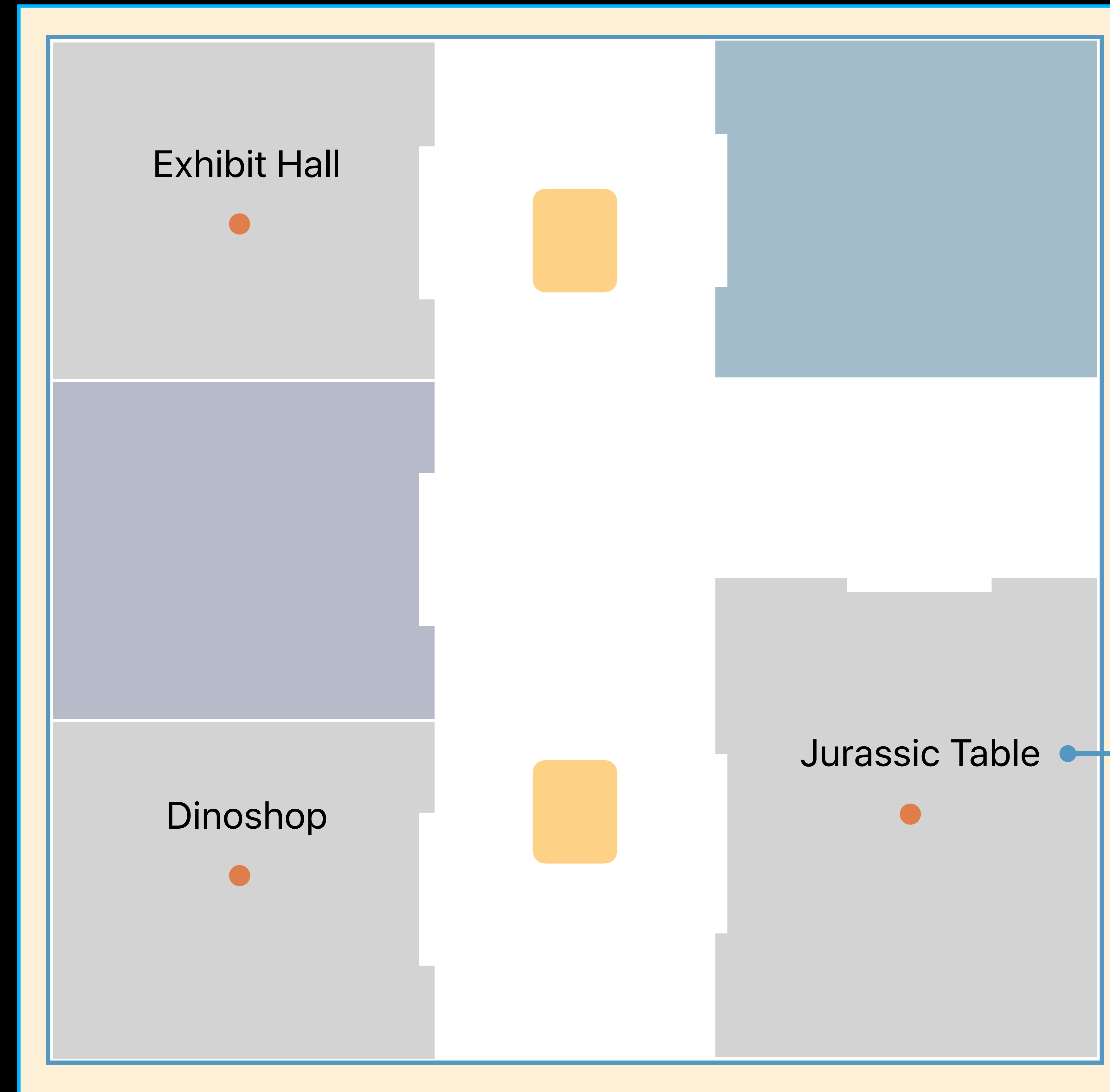
Indoor Map

Building Footprint

Level

Units

Openings



Kiosks

Labels

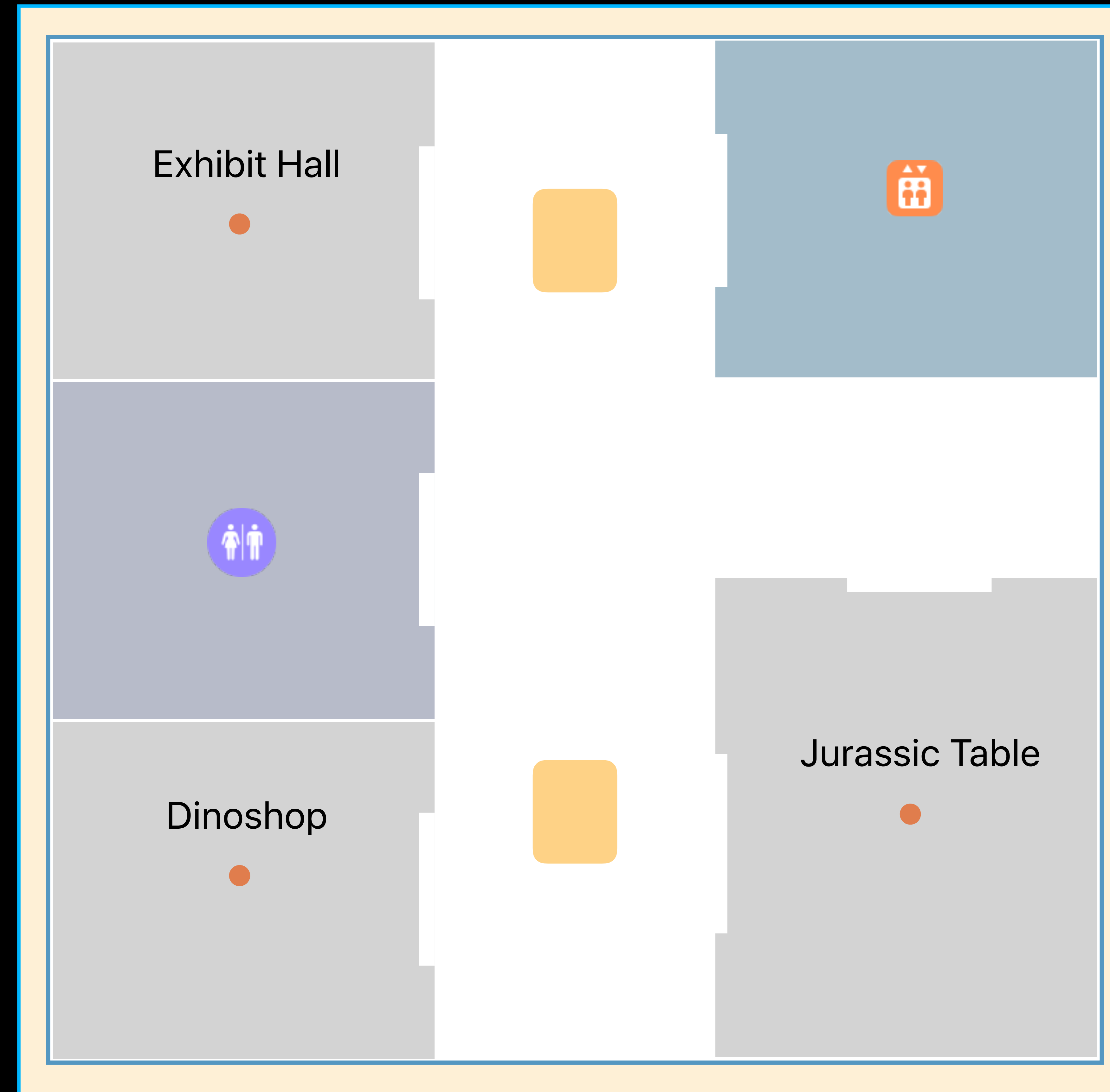
Indoor Map

Building Footprint

Level

Units

Openings



Kiosks

Labels and icons

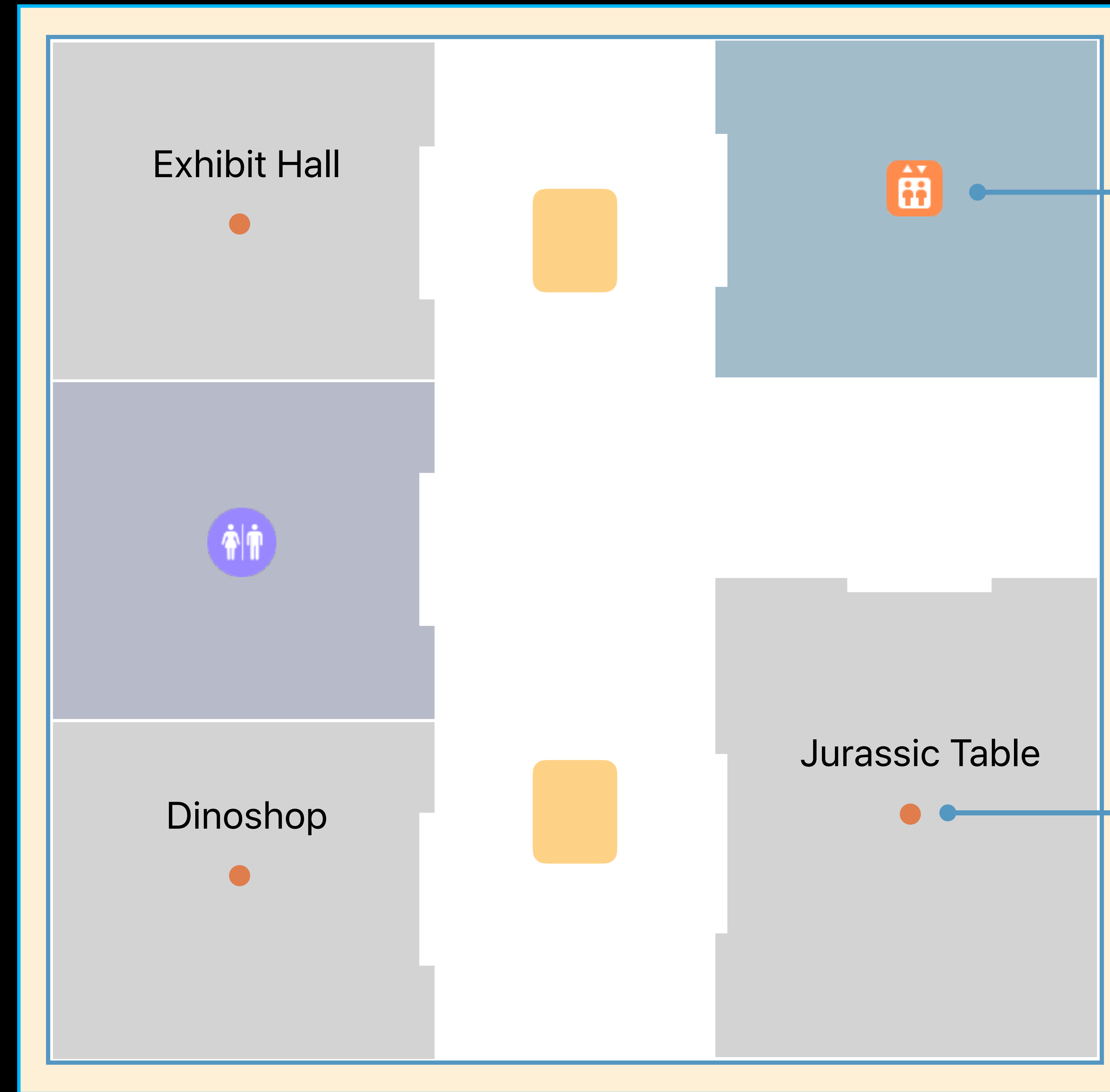
Indoor Map

Building Footprint

Level

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Openings



Kiosks

Labels and icons

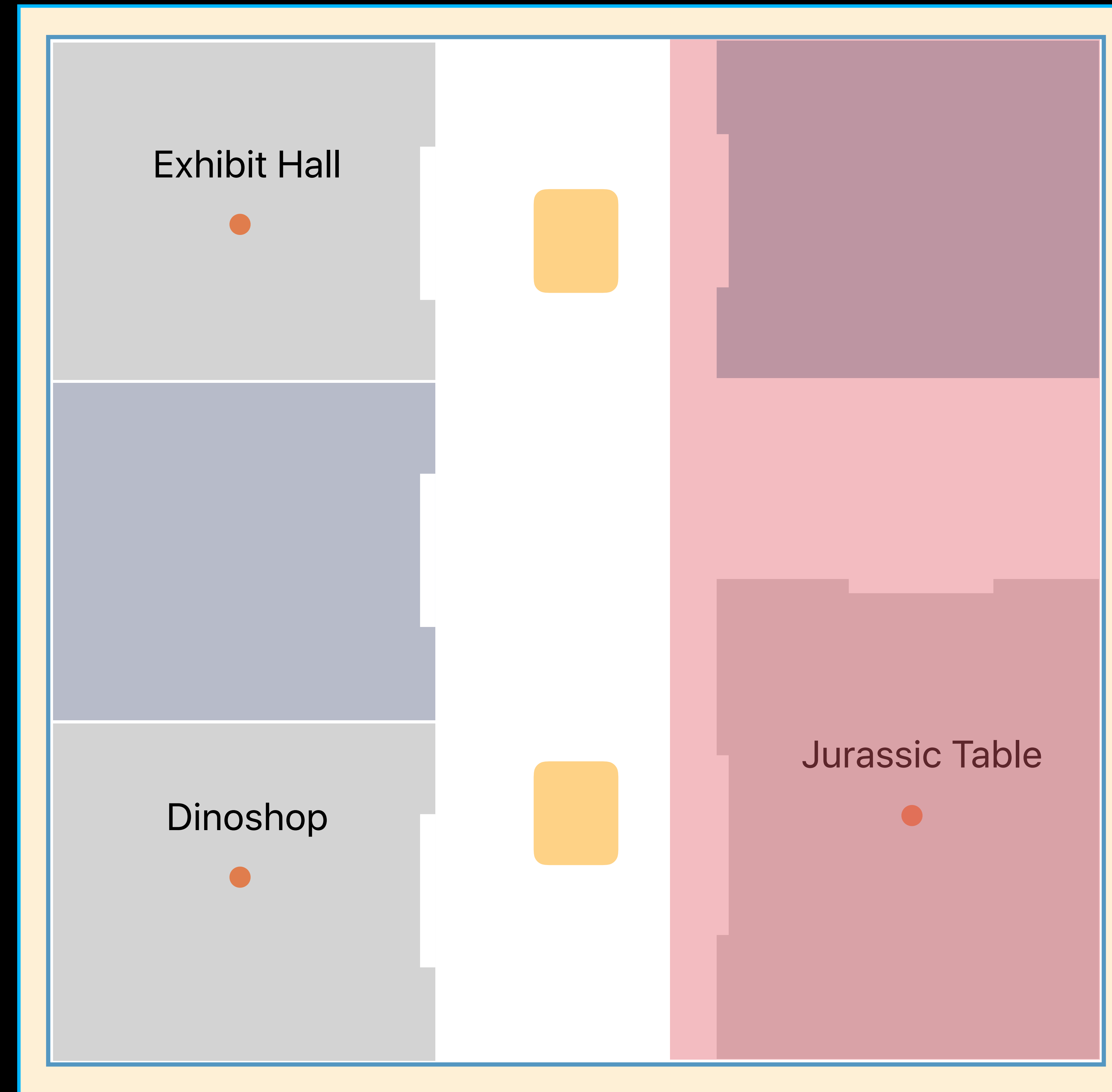
Indoor Map

Building Footprint

Level

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Openings



Kiosks

Labels and icons

Sections

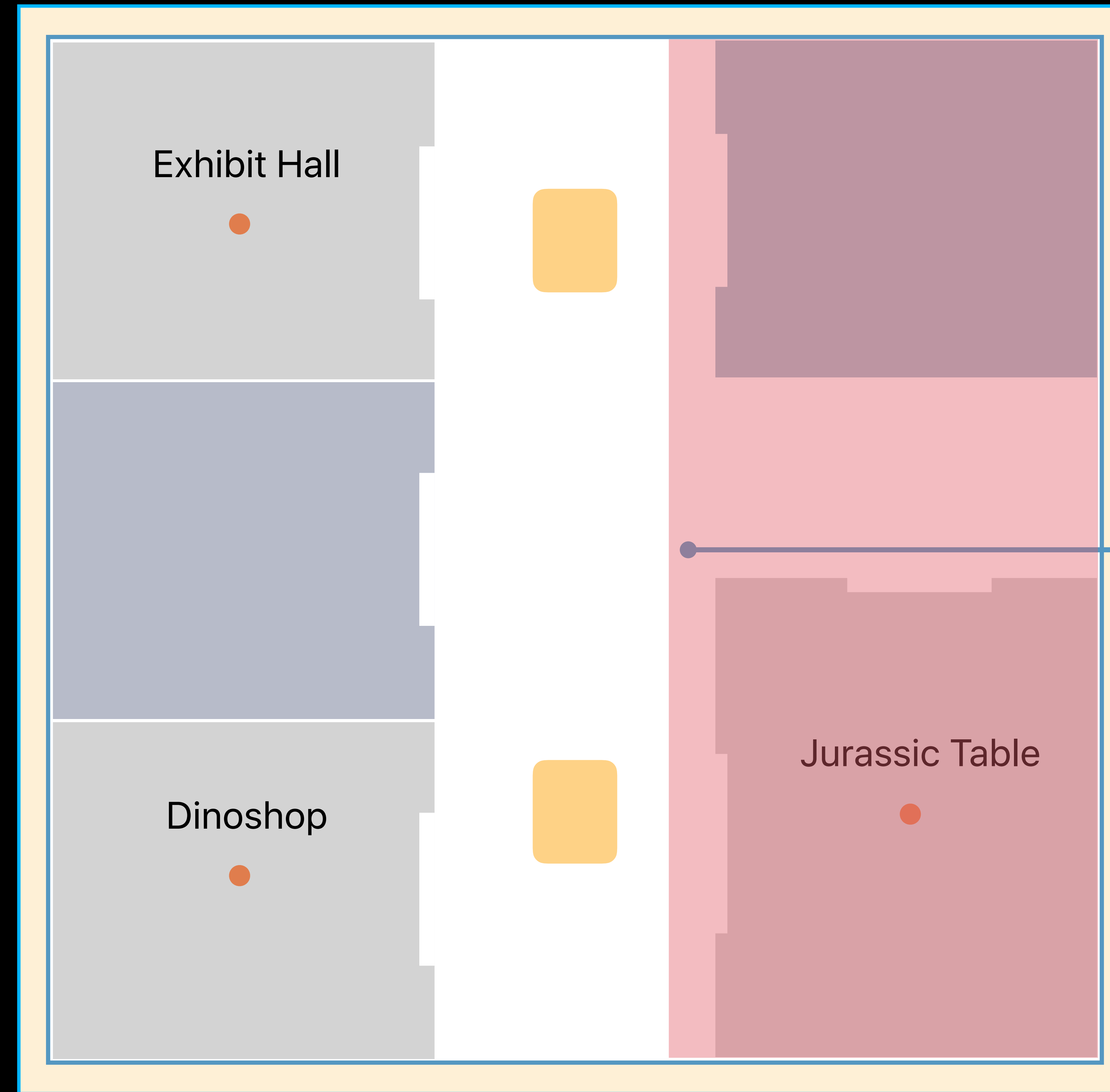
Indoor Map

Building Footprint

Level

Units

Openings



Kiosks

Labels and icons

Sections

Layer Hierarchy

Layer Hierarchy



Layer Hierarchy



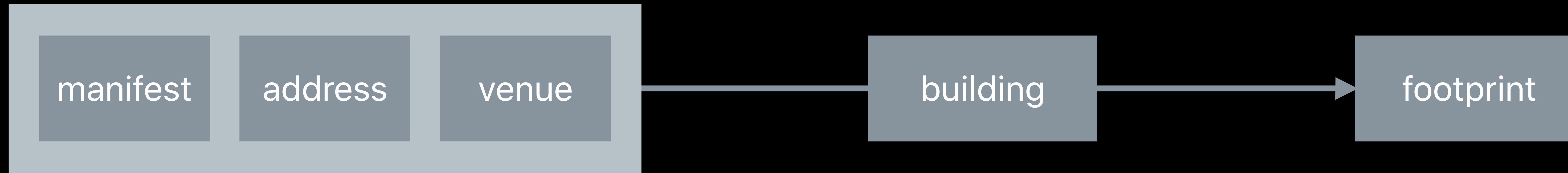
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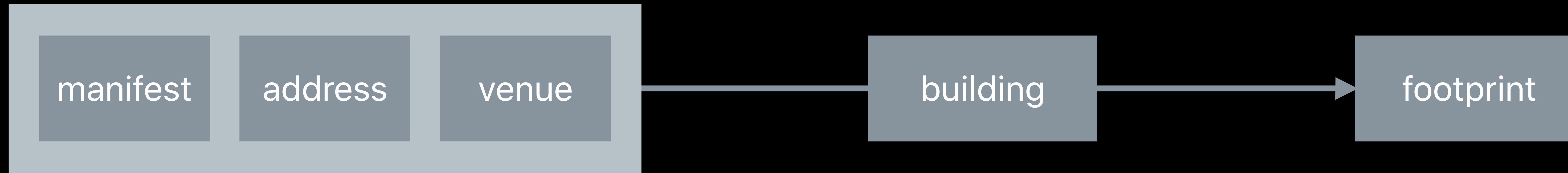
Layer Hierarchy



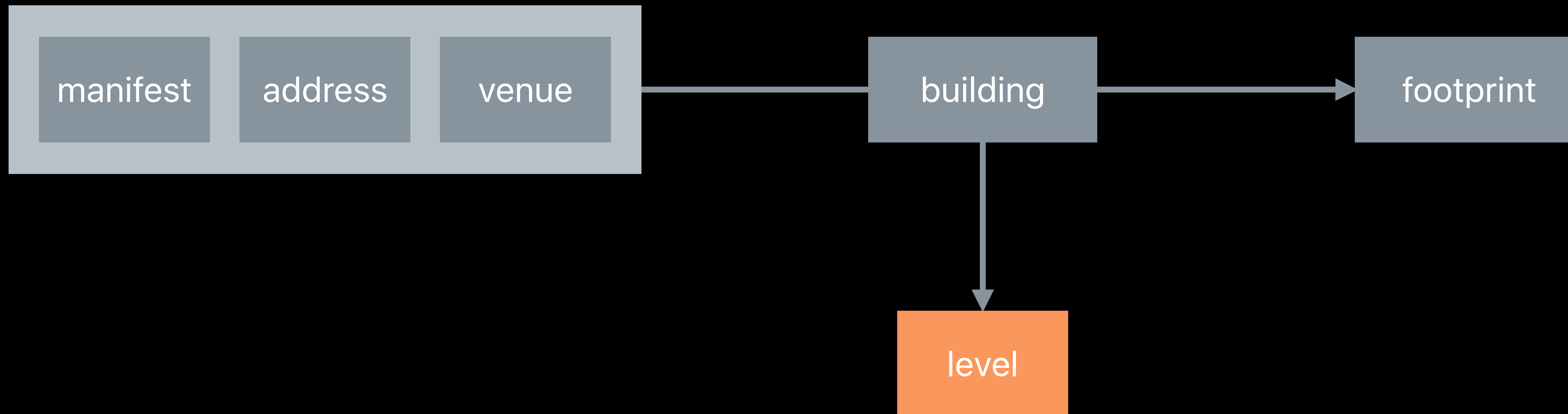
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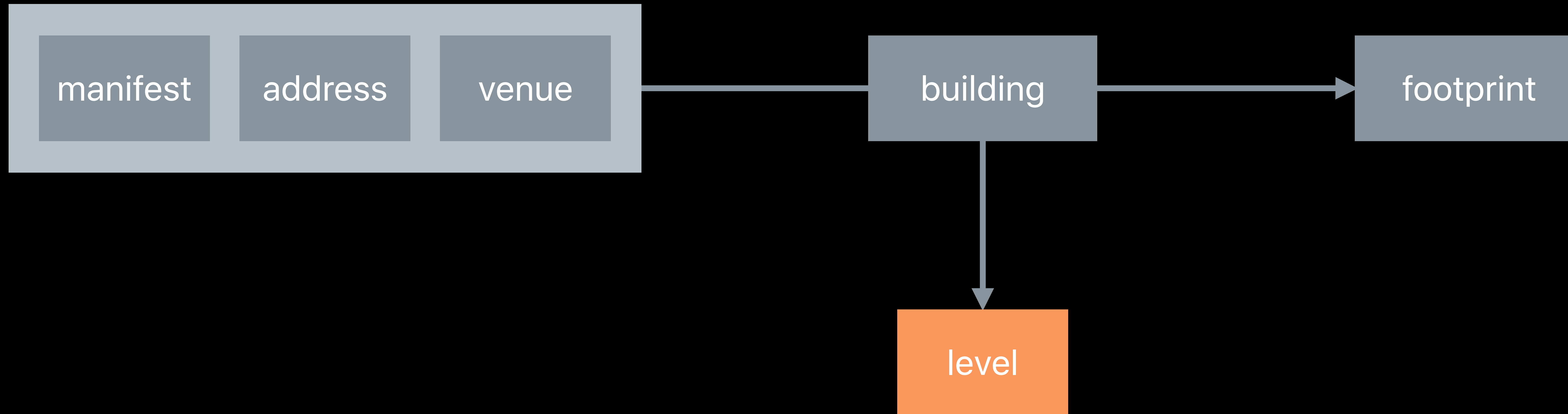
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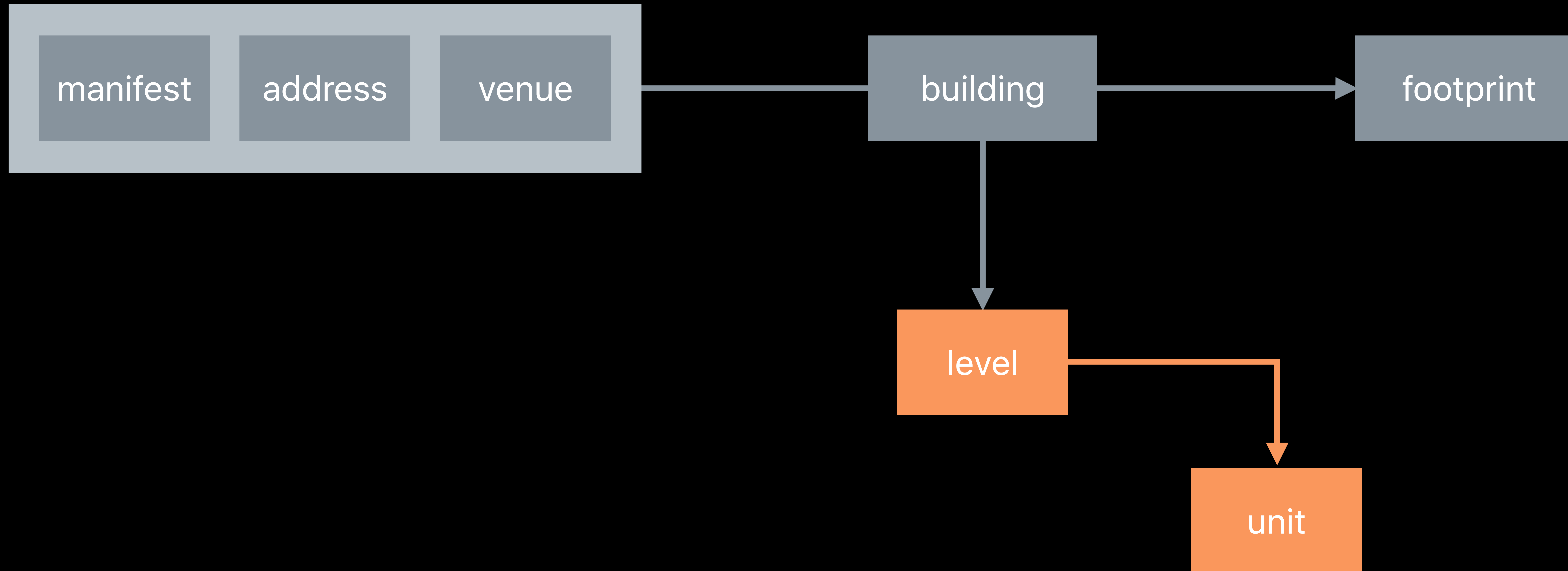
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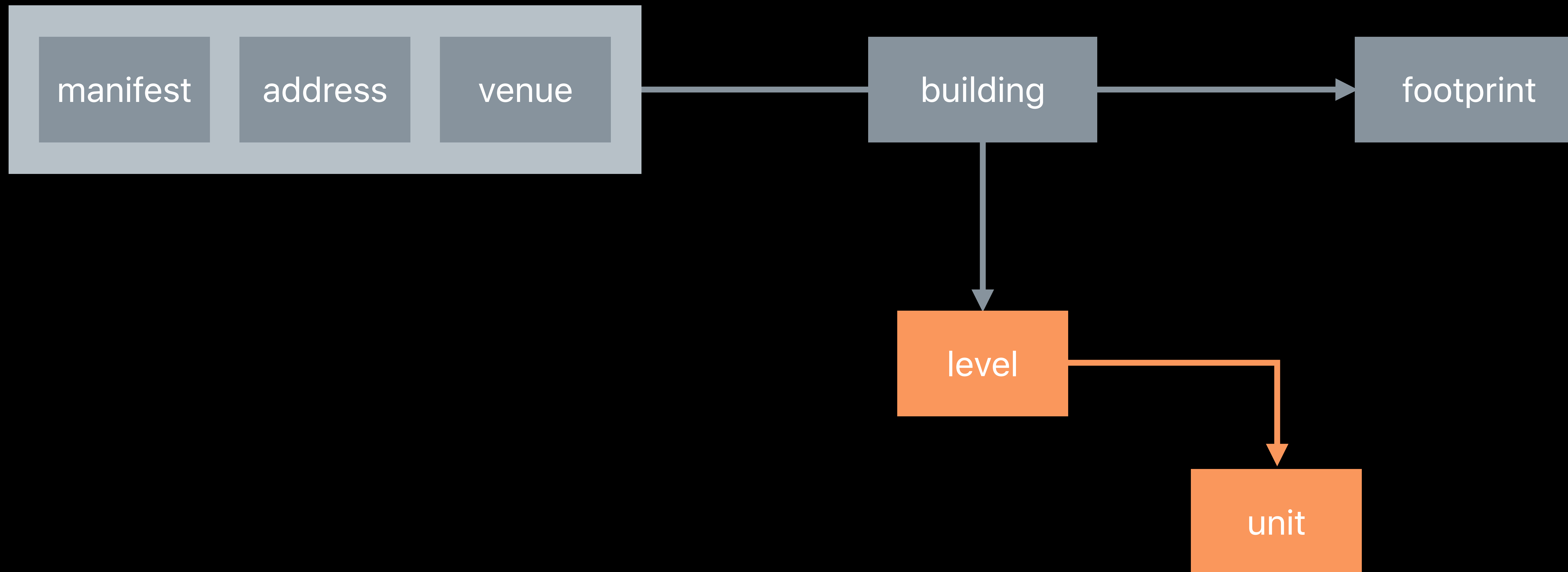
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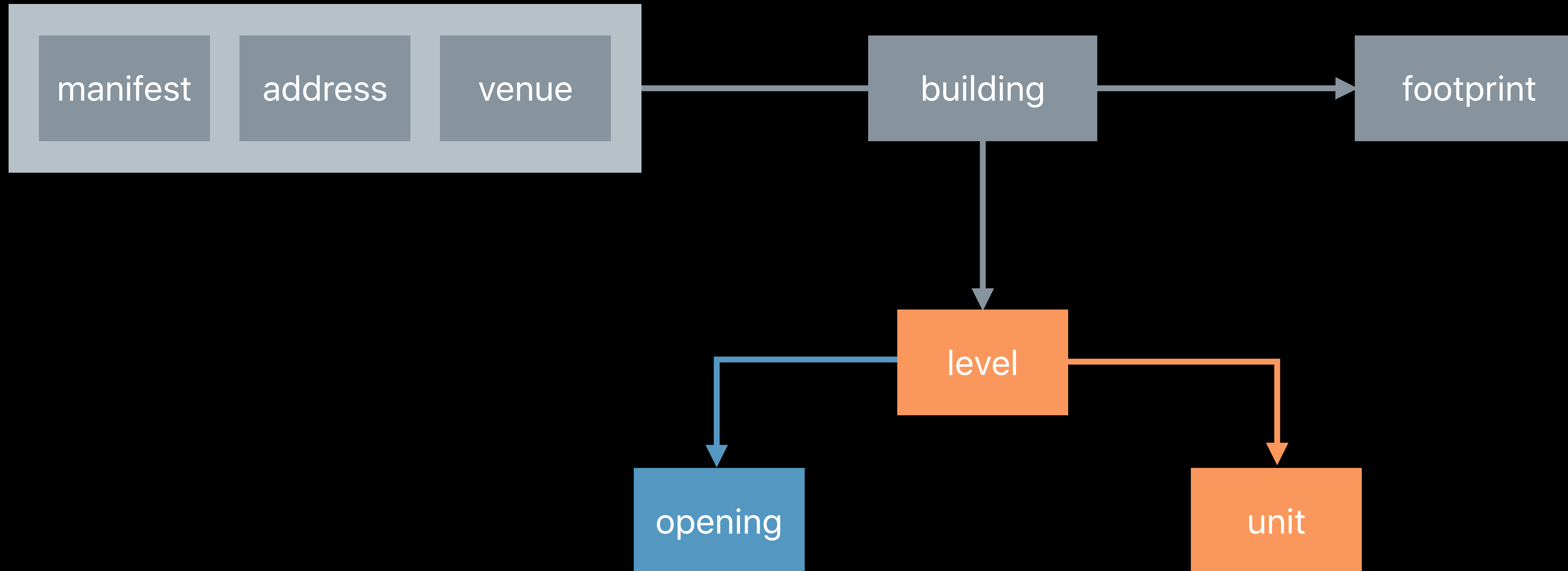
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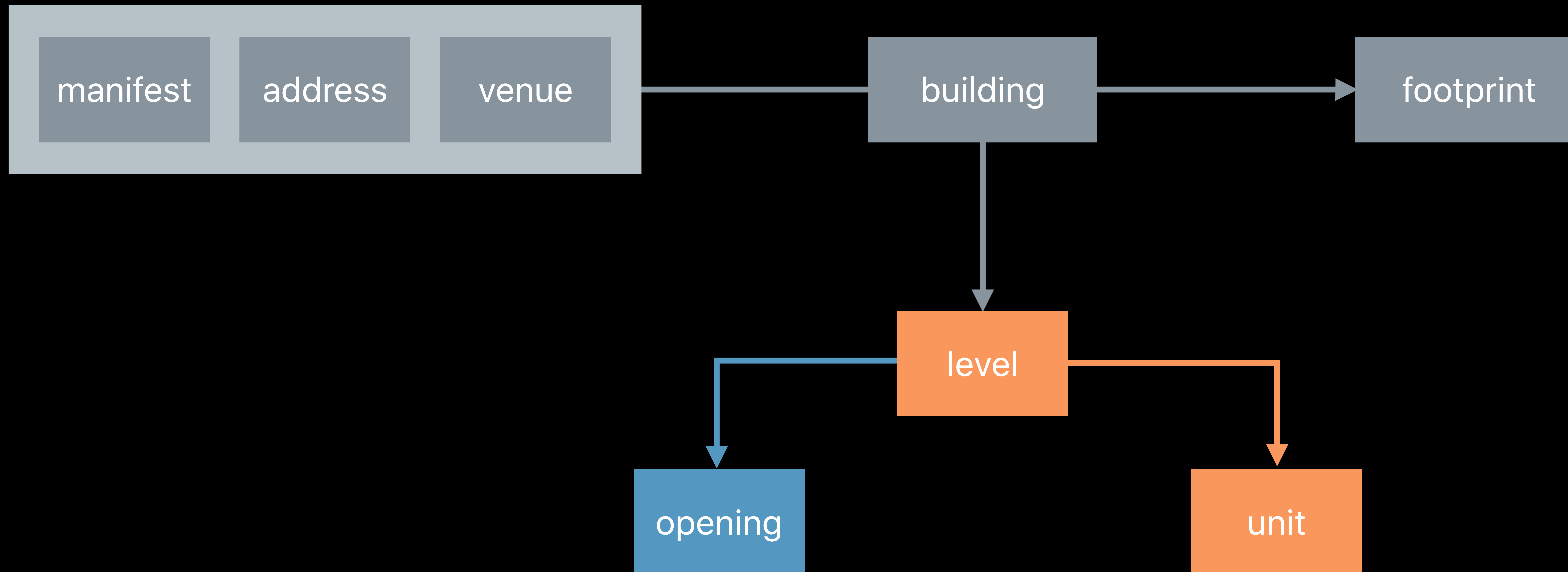
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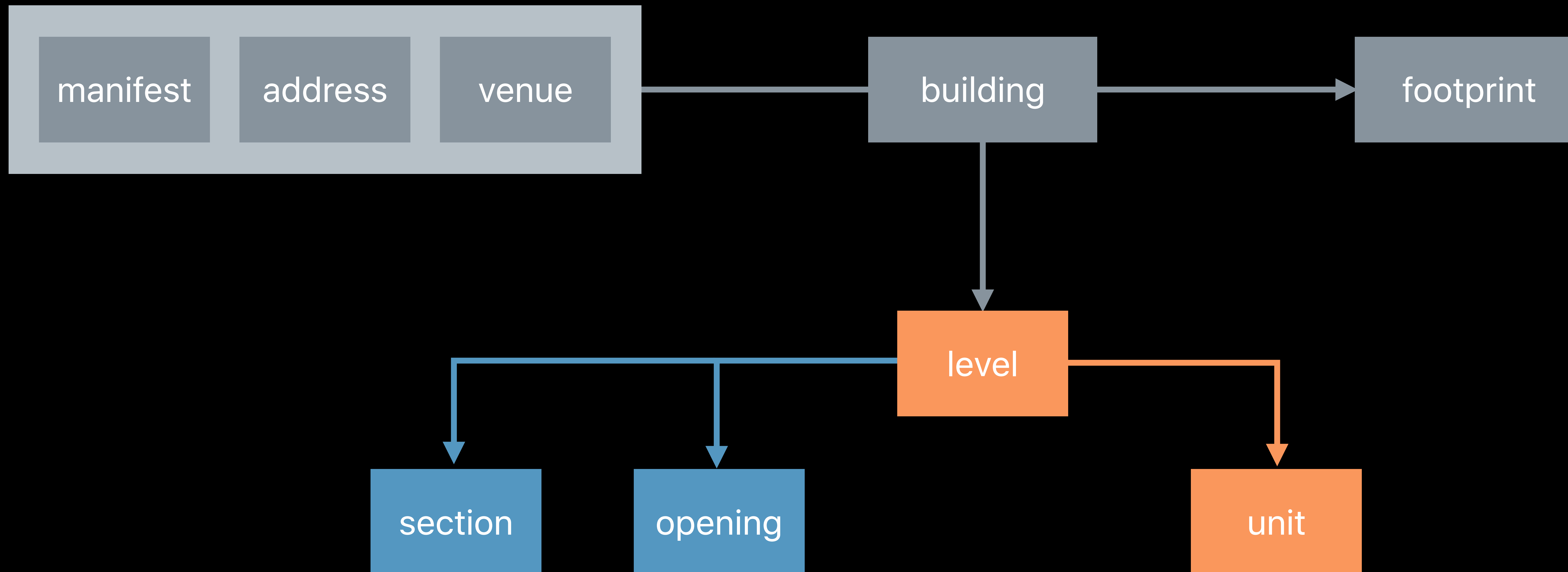
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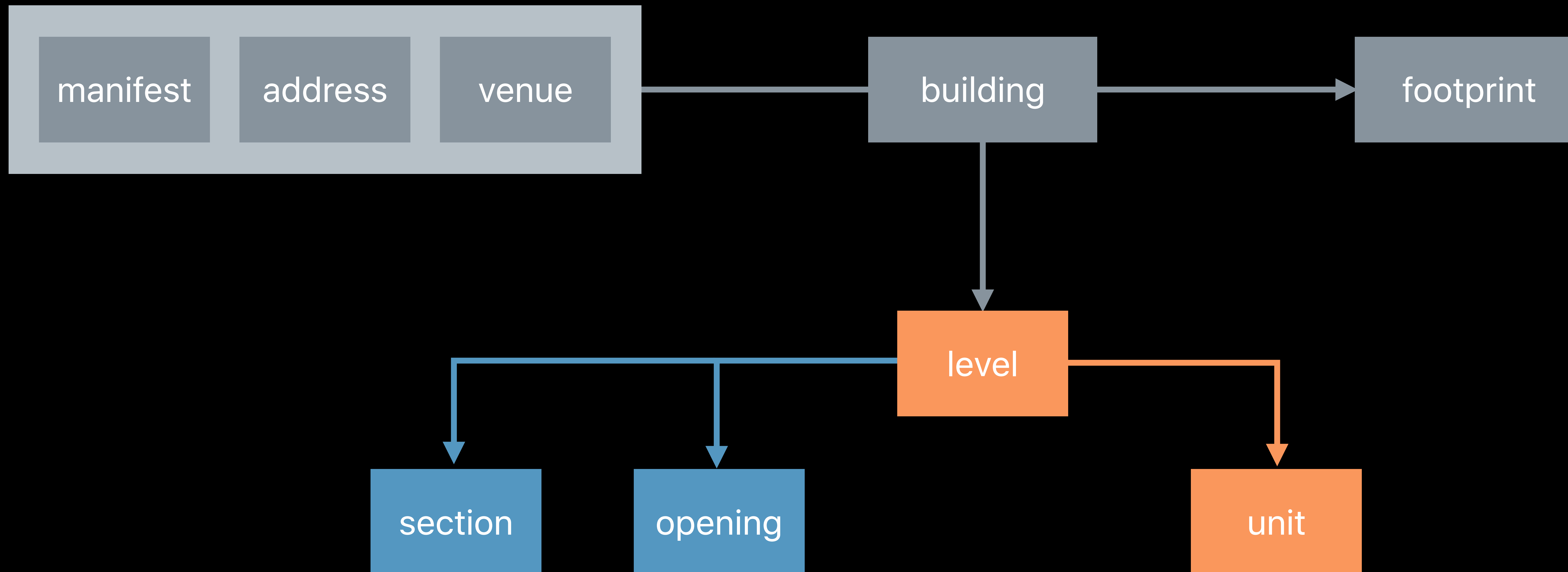
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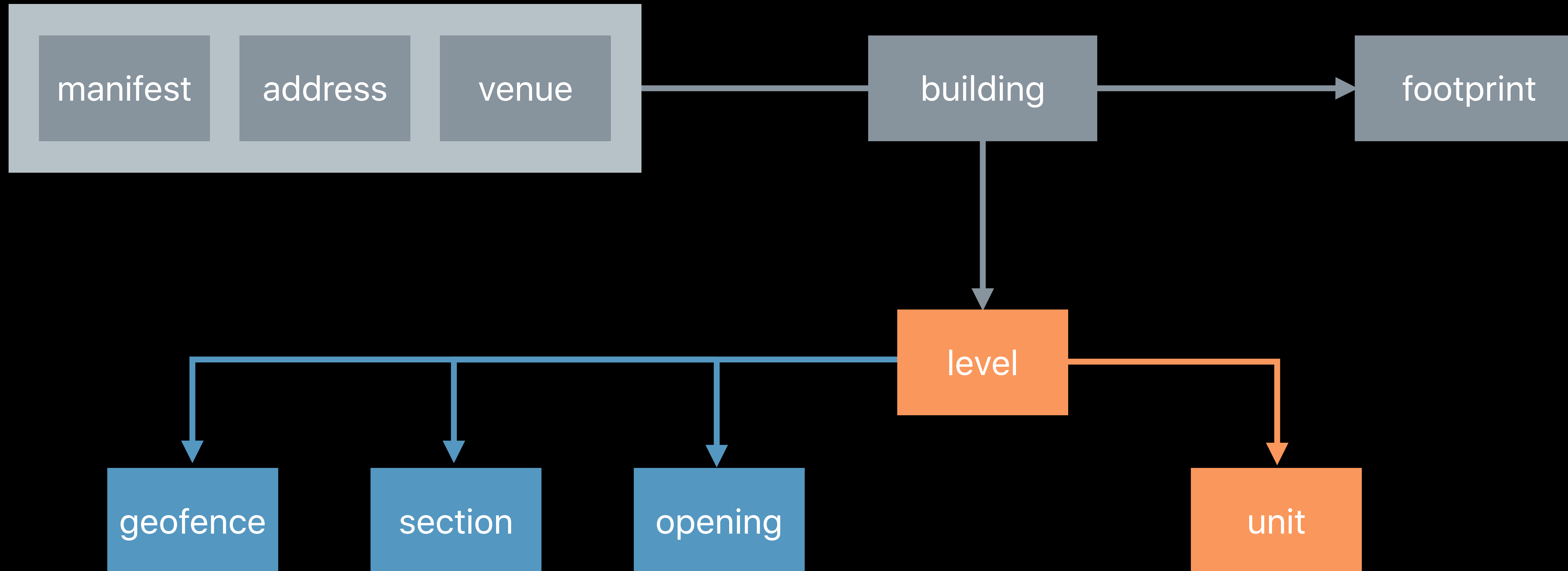
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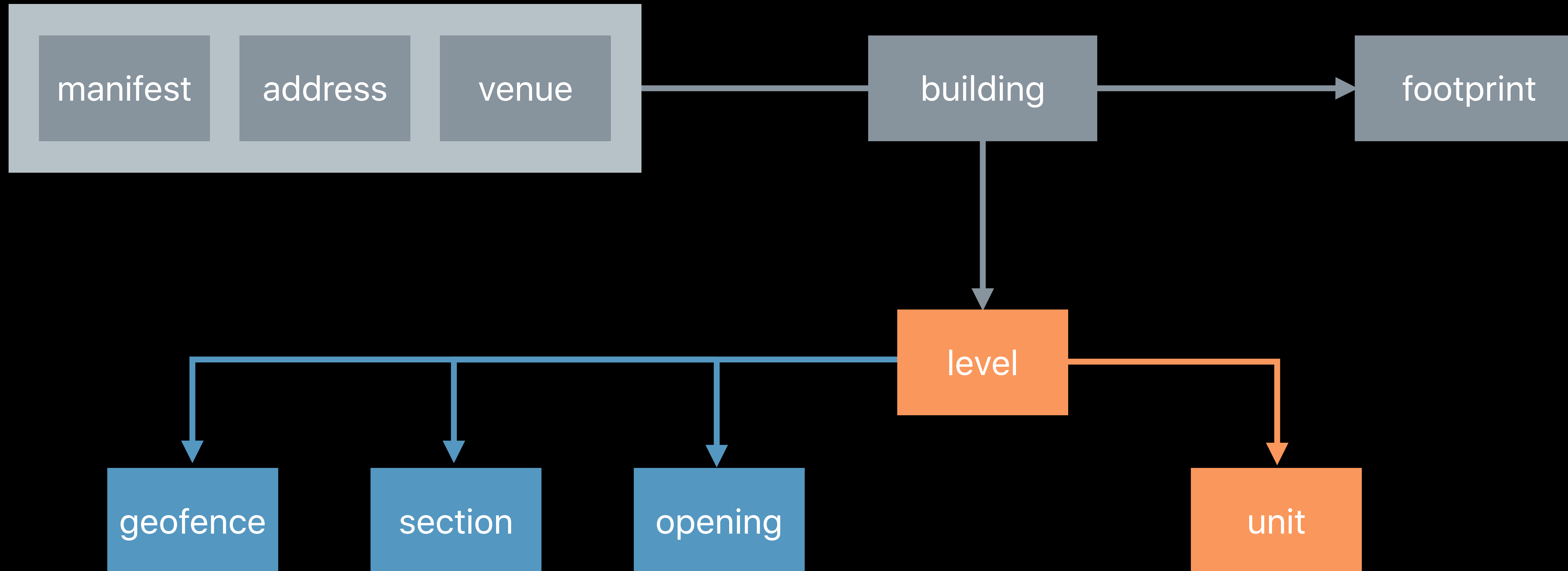
Layer Hierarchy



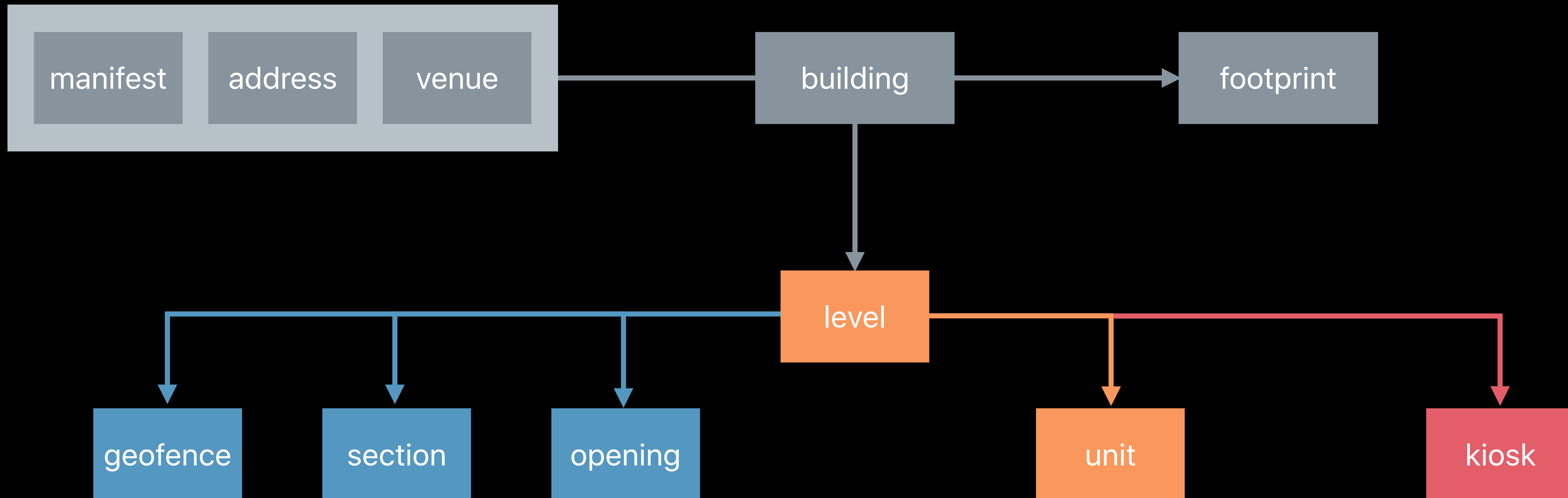
Layer Hierarchy



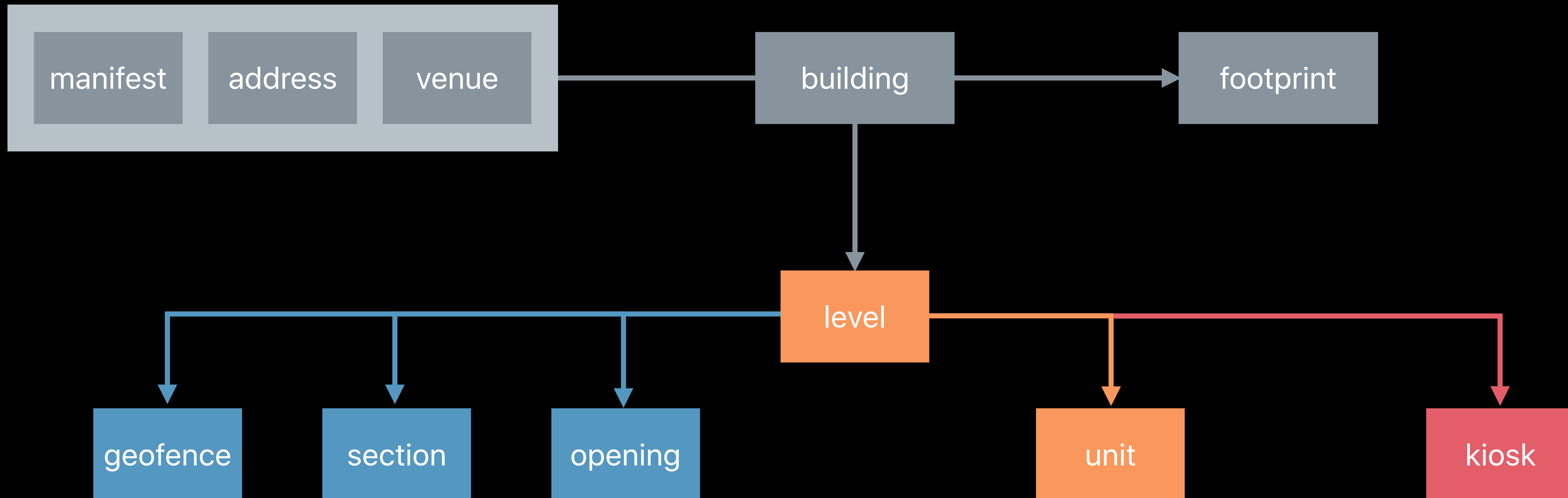
Layer Hierarchy



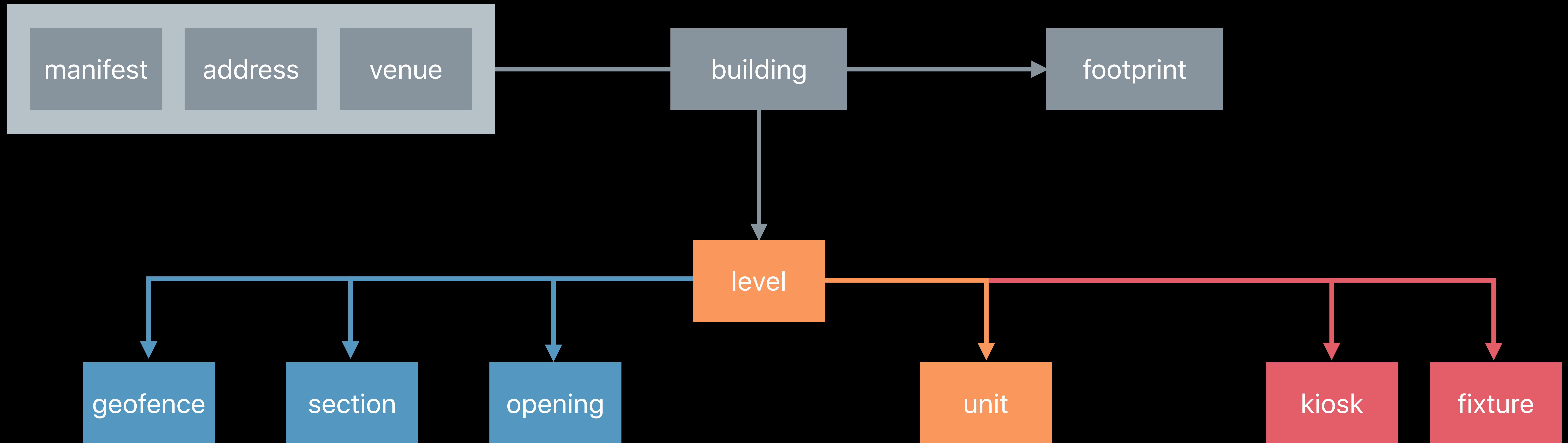
Layer Hierarchy



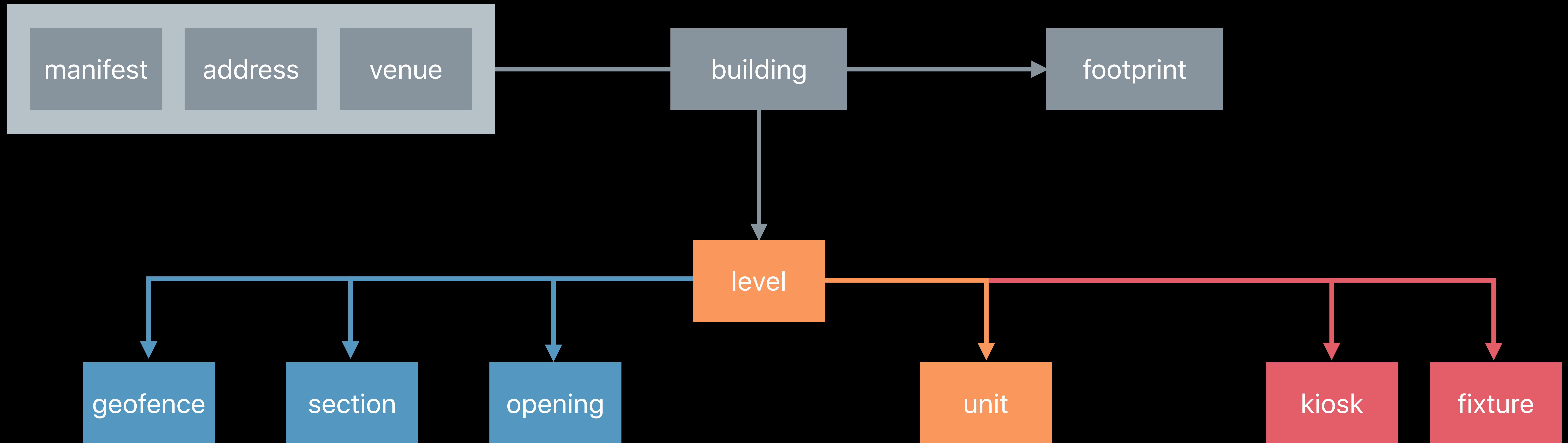
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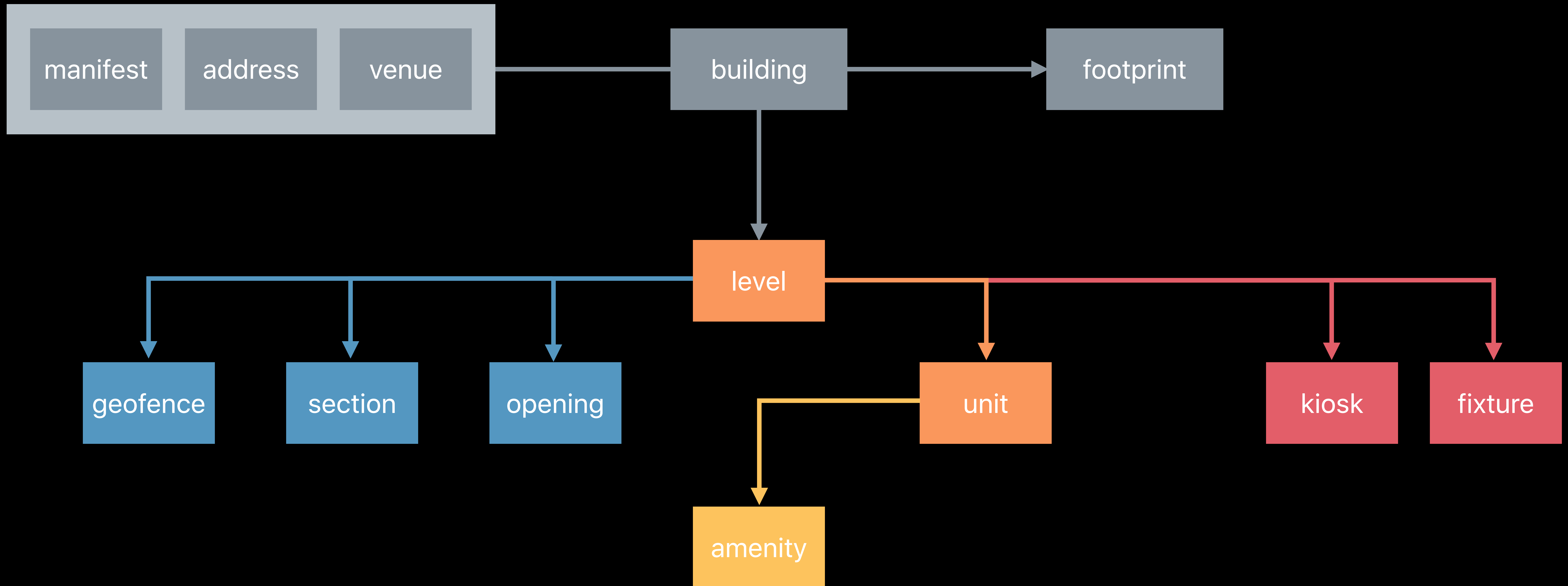
Layer Hierarchy



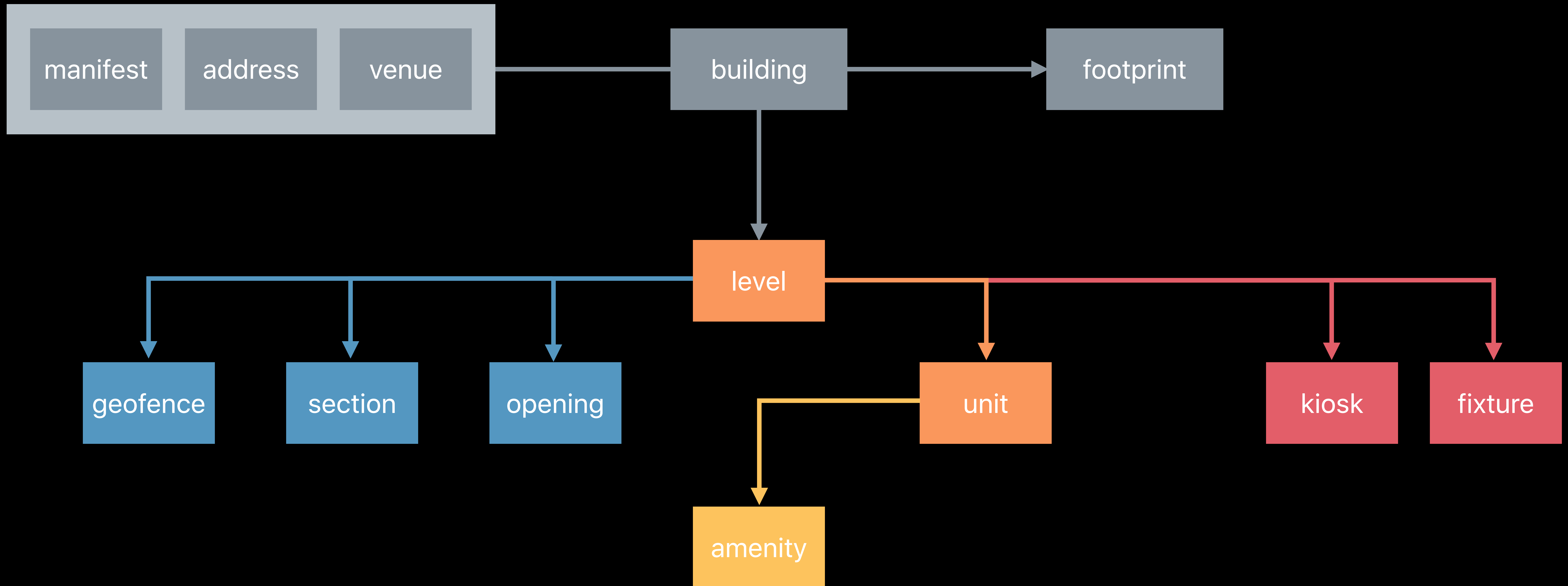
Layer Hierarchy



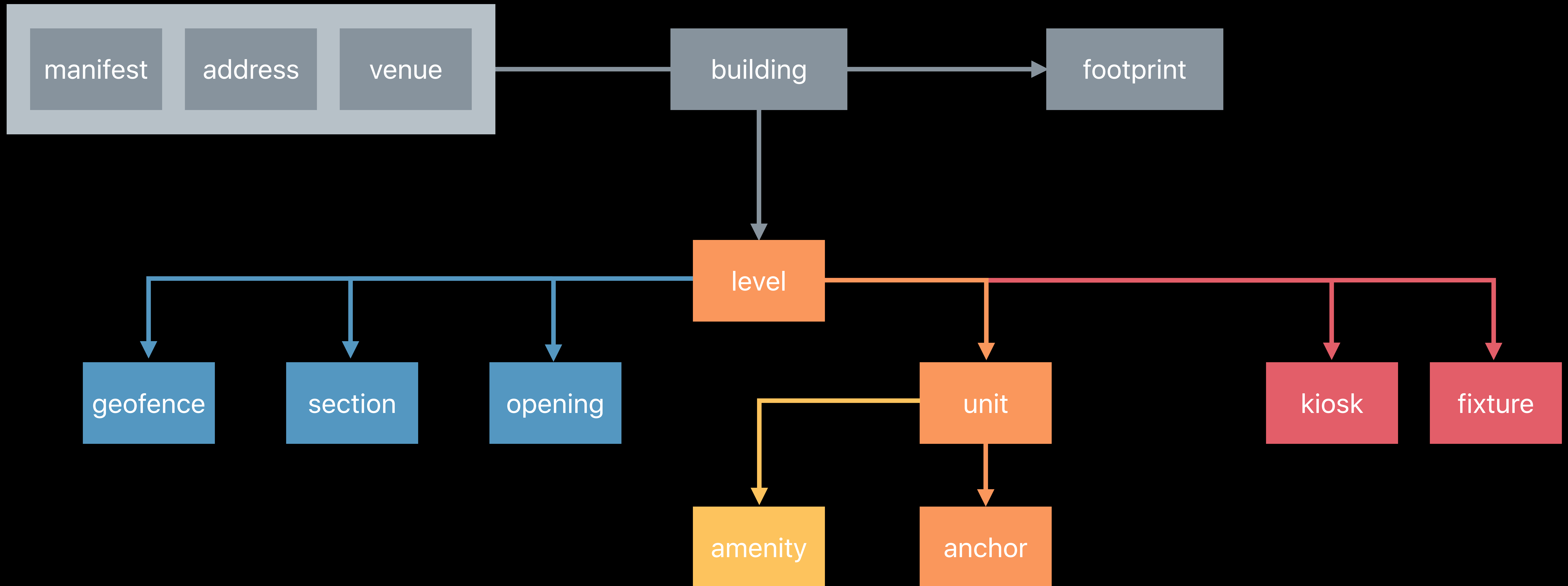
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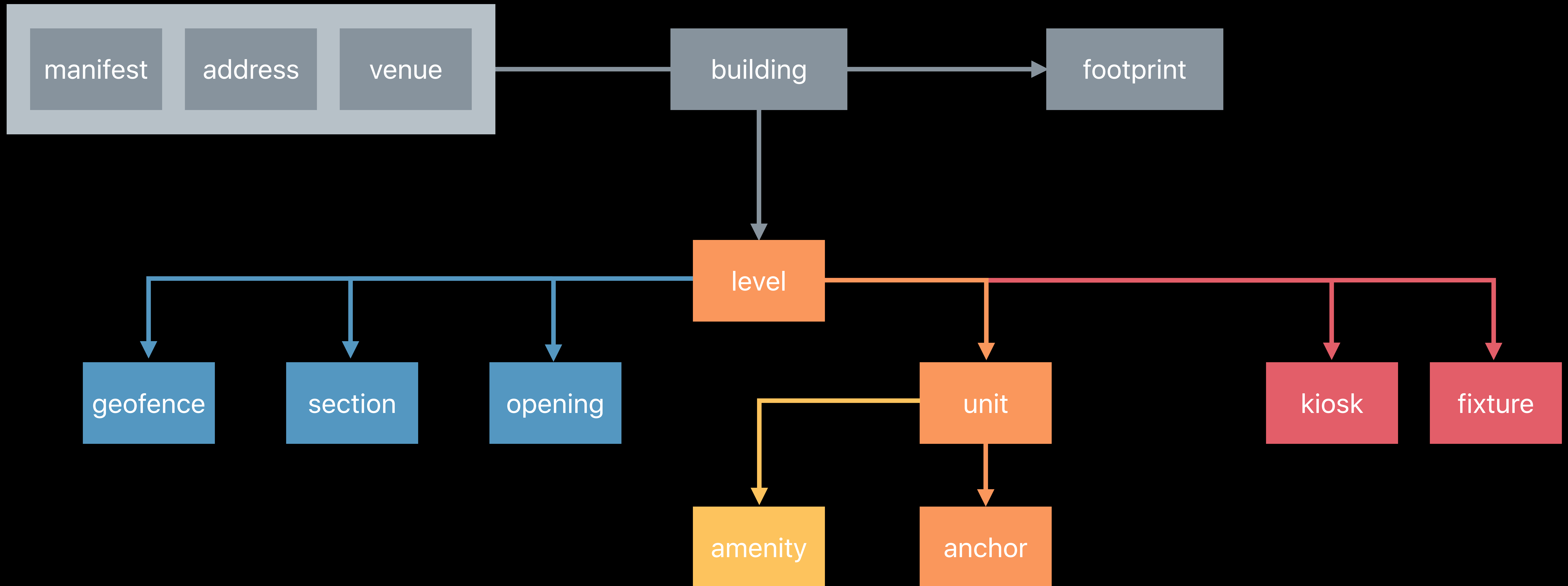
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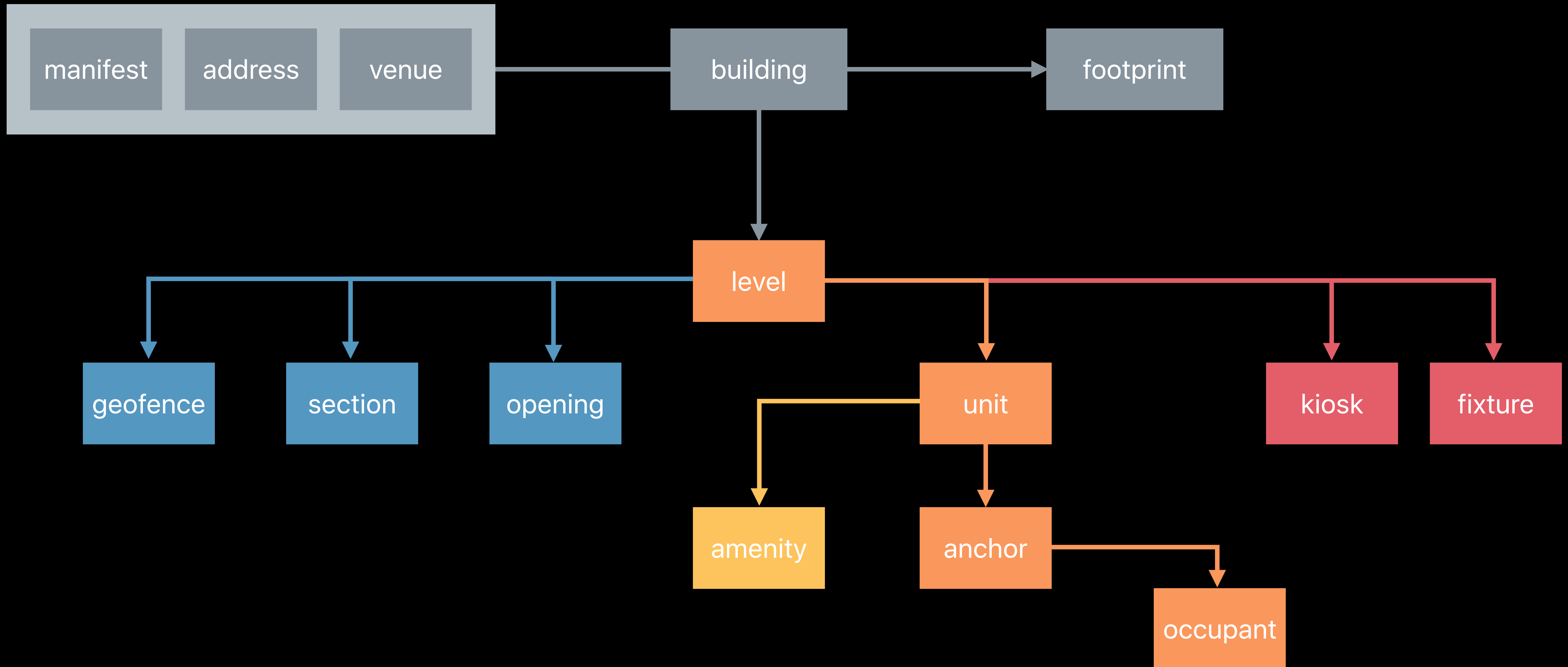
Layer Hierarchy



Layer Hierarchy



Layer Hierarchy





IMDF



manifest.json

manifest.json

address.geojson

footprint.geojson

anchor.geojson

level.geojson

building.geojson

opening.geojson

detail.geojson

unit.geojson

fixture.geojson

venue.geojson


```
//Snippet from level.geojson
```

```
"type" : "Feature",  
"id" : "139c9194-36d7-424c-9fd0-5524c2d9406f",  
"feature_type" : "level",  
"properties" : {  
  "category" : "unspecified",  
  "restriction" : null,  
  "outdoor" : false,  
  "ordinal" : 0,  
  "name" : { "en" : "Level 1" },  
  "short_name" : { "en" : "L1" },  
  "display_point" : { "type" : "Point", "coordinates" : [ -123.4304617, 48.640636 ] },  
  "address_id" : null,  
  "building_ids" : [ "0c36de8f-dcee-4c48-b011-2c27c7f55933" ]  
},  
"geometry" : { "type" : "Polygon", "coordinates" : [ [ [ -123.4293921, 48.6406522 ], ... ] ] }
```

```
//Snippet from level.geojson
```

```
"type" : "Feature",  
"id" : "139c9194-36d7-424c-9fd0-5524c2d9406f",  
"feature_type" : "level",  
"properties" : {  
  "category" : "unspecified",  
  "restriction" : null,  
  "outdoor" : false,  
  "ordinal" : 0,  
  "name" : { "en" : "Level 1" },  
  "short_name" : { "en" : "L1" },  
  "display_point" : { "type" : "Point", "coordinates" : [ -123.4304617, 48.640636 ] },  
  "address_id" : null,  
  "building_ids" : [ "0c36de8f-dcee-4c48-b011-2c27c7f55933" ]  
},  
"geometry" : { "type" : "Polygon", "coordinates" : [ [ [ -123.4293921, 48.6406522 ], ... ] ] }
```



```
//Snippet from level.geojson
```

```
"type" : "Feature",  
"id" : "139c9194-36d7-424c-9fd0-5524c2d9406f",  
"feature_type" : "level",  
"properties" : {  
  "category" : "unspecified",  
  "restriction" : null,  
  "outdoor" : false,  
  "ordinal" : 0,  
  "name" : { "en" : "Level 1" },  
  "short_name" : { "en" : "L1" },  
  "display_point" : { "type" : "Point", "coordinates" : [ -123.4304617, 48.640636 ] },  
  "address_id" : null,  
  "building_ids" : [ "0c36de8f-dcee-4c48-b011-2c27c7f55933" ]  
},  
"geometry" : { "type" : "Polygon", "coordinates" : [ [ [ -123.4293921, 48.6406522 ], ... ] ] }
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  "outdoor" : false,  
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  "address_id" : null,  
  "building_ids" : [ "0c36de8f-dcee-4c48-b011-2c27c7f55933" ]  
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"properties" : {  
  "category" : "unspecified",  
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  "address_id" : null,  
  "building_ids" : [ "0c36de8f-dcee-4c48-b011-2c27c7f55933" ]  
},  
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  "restriction" : null,  
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  "ordinal" : 0,  
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  "short_name" : { "en" : "L1" },  
  "display_point" : { "type" : "Point", "coordinates" : [ -123.4304617, 48.640636 ] },  
  "address_id" : null,  
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//Snippet from level.geojson
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  "address_id" : null,  
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"geometry" : { "type" : "Polygon", "coordinates" : [ [ [ -123.4293921, 48.6406522 ], ... ] ] }
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//Snippet from level.geojson
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  "restriction" : null,  
  "outdoor" : false,  
  "ordinal" : 0,  
  "name" : { "en" : "Level 1" },  
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  "display_point" : { "type" : "Point", "coordinates" : [ -123.4304617, 48.640636 ] },  
  "address_id" : null,  
  "building_ids" : [ "0c36de8f-dcee-4c48-b011-2c27c7f55933" ]  
},  
"geometry" : { "type" : "Polygon", "coordinates" : [ [ [ -123.4293921, 48.6406522 ], ... ] ] }
```


Create IMDF

Best practices



Create
IMDF

Create IMDF

Best practices

Understand the element hierarchy



Create
IMDF

Create IMDF

Best practices

Understand the element hierarchy

Ensure IMDF is complete and covers building



Create
IMDF

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Best practices

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Levels must be covered entirely by units



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Levels must be covered entirely by units

Units should be categorized appropriately



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Best practices

Understand the element hierarchy

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Levels must be covered entirely by units

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Openings are important for location accuracy



Create
IMDF

Create IMDF

Best practices

Understand the element hierarchy

Ensure IMDF is complete and covers building

Levels must be covered entirely by units

Units should be categorized appropriately

Openings are important for location accuracy

Unique IDs and address for occupants



Create
IMDF

Create IMDF

Best practices

Understand the element hierarchy

Ensure IMDF is complete and covers building

Levels must be covered entirely by units

Units should be categorized appropriately

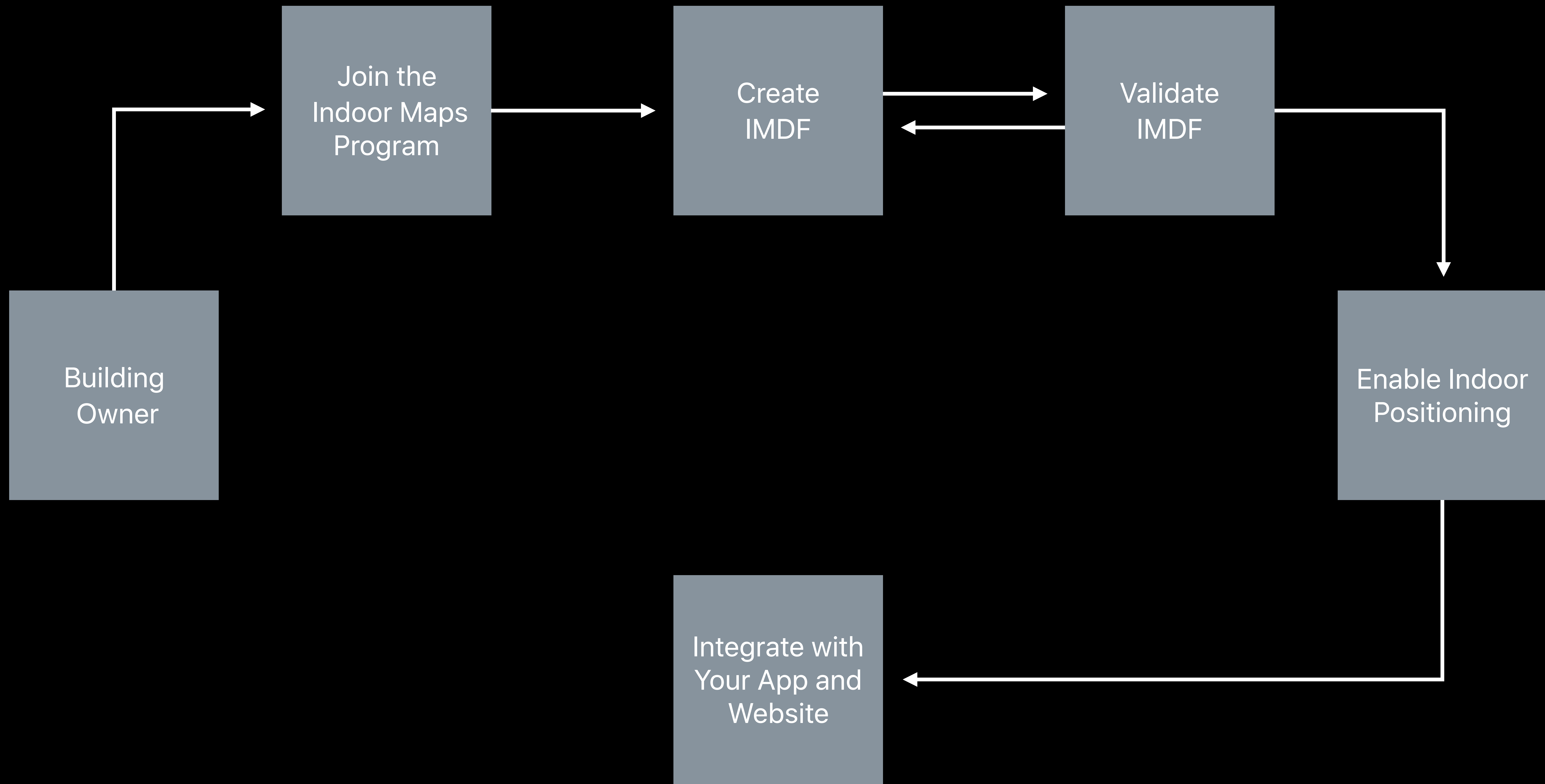
Openings are important for location accuracy

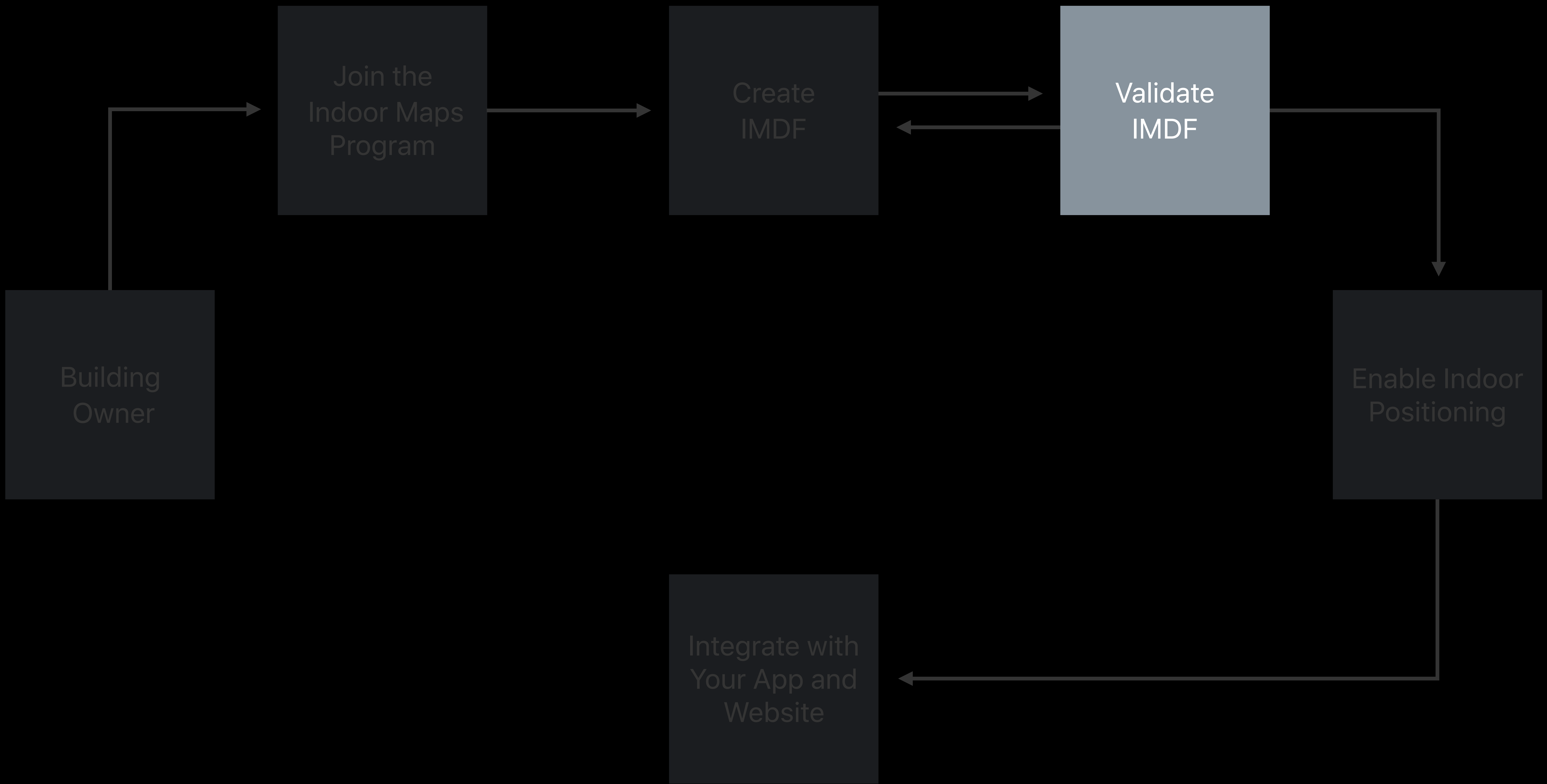
Unique IDs and address for occupants

Use notable structures for positioning survey



Create
IMDF







Victoria International Airport

Warnings found 19

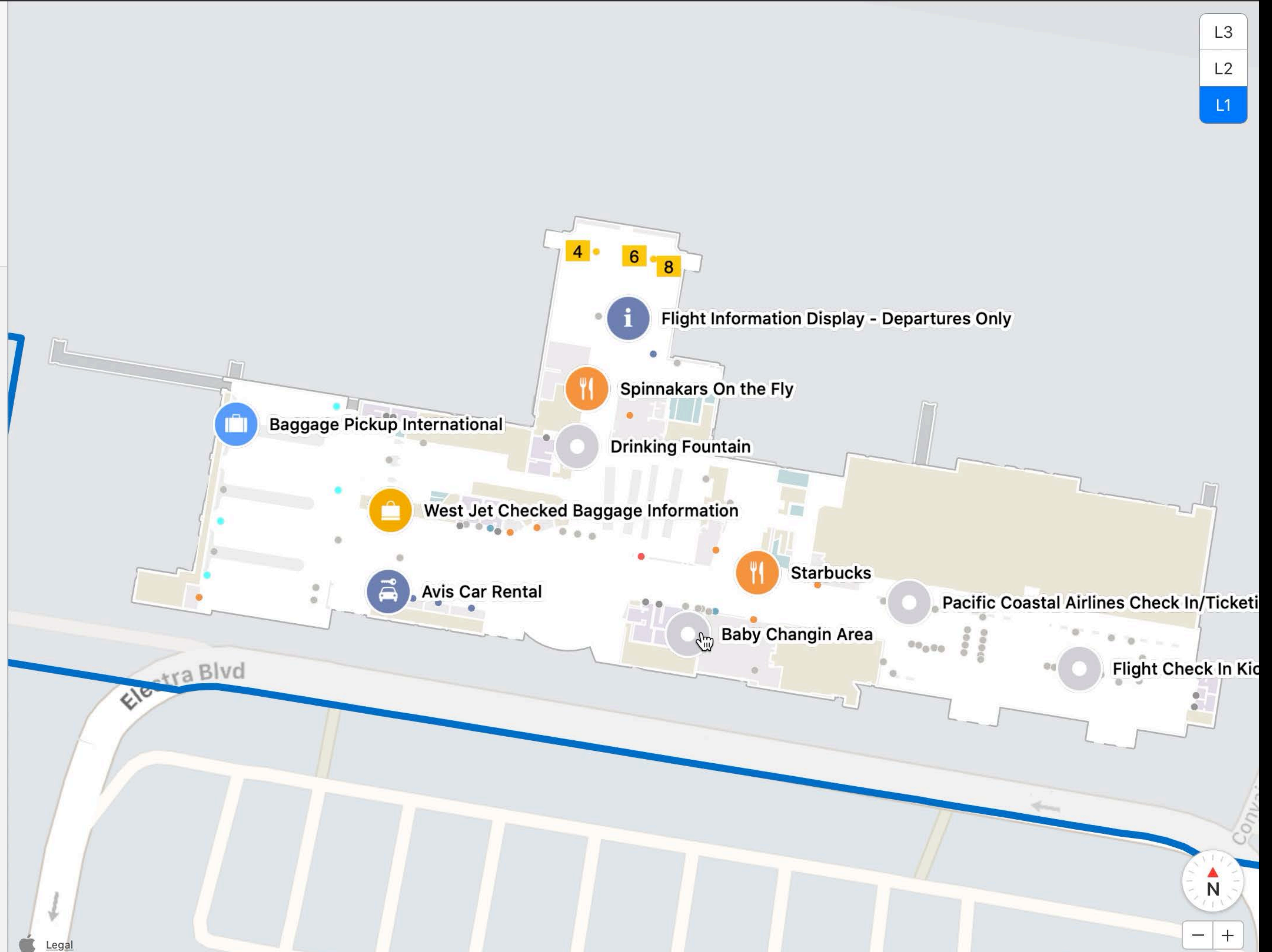
Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1





Victoria International Airport

Warnings found 19

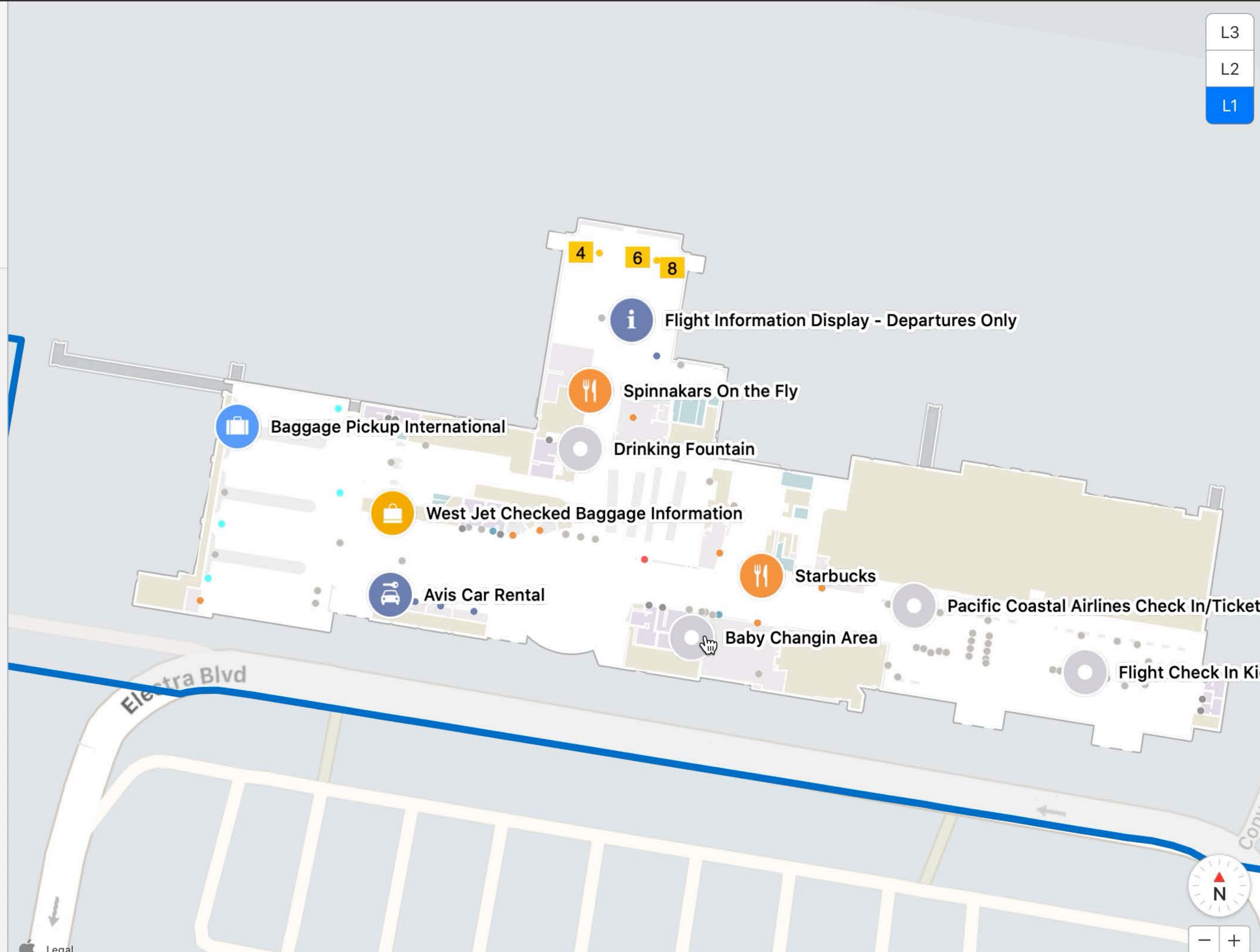
Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1





Victoria International Airport

Warnings found 19

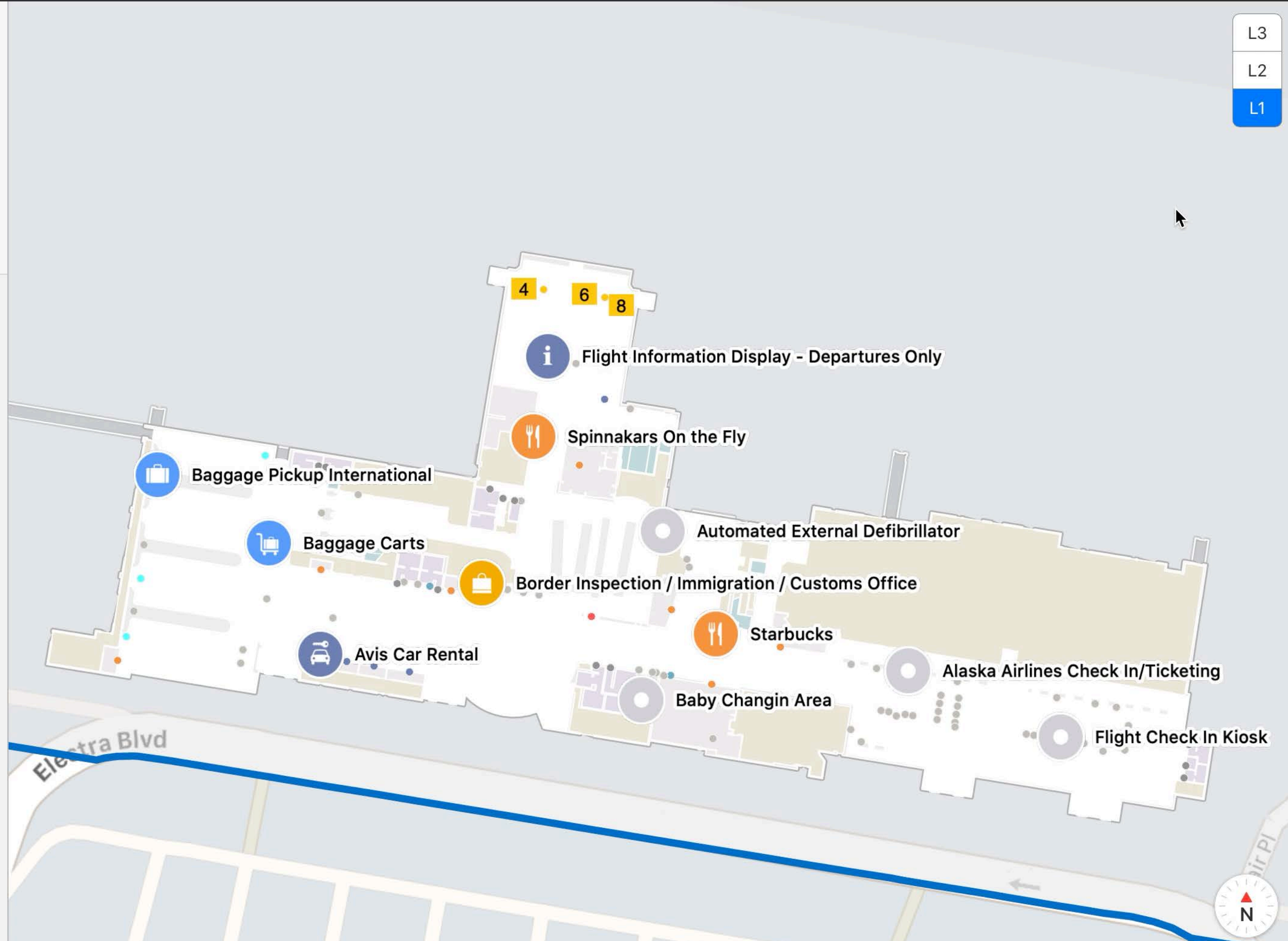
Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1





Victoria International Airport

Warnings found 19

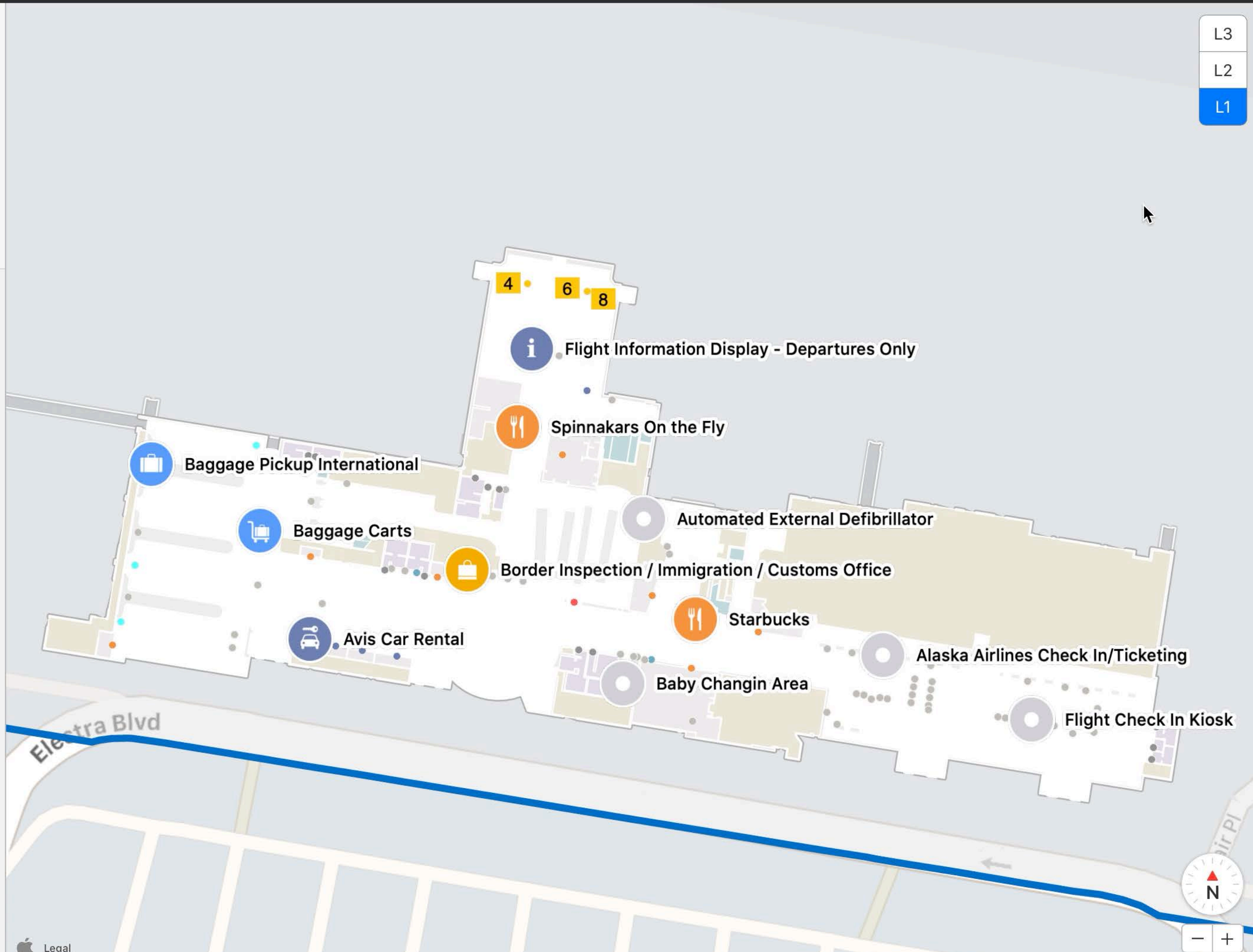
Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1





Victoria International Airport

Warnings found 19 >

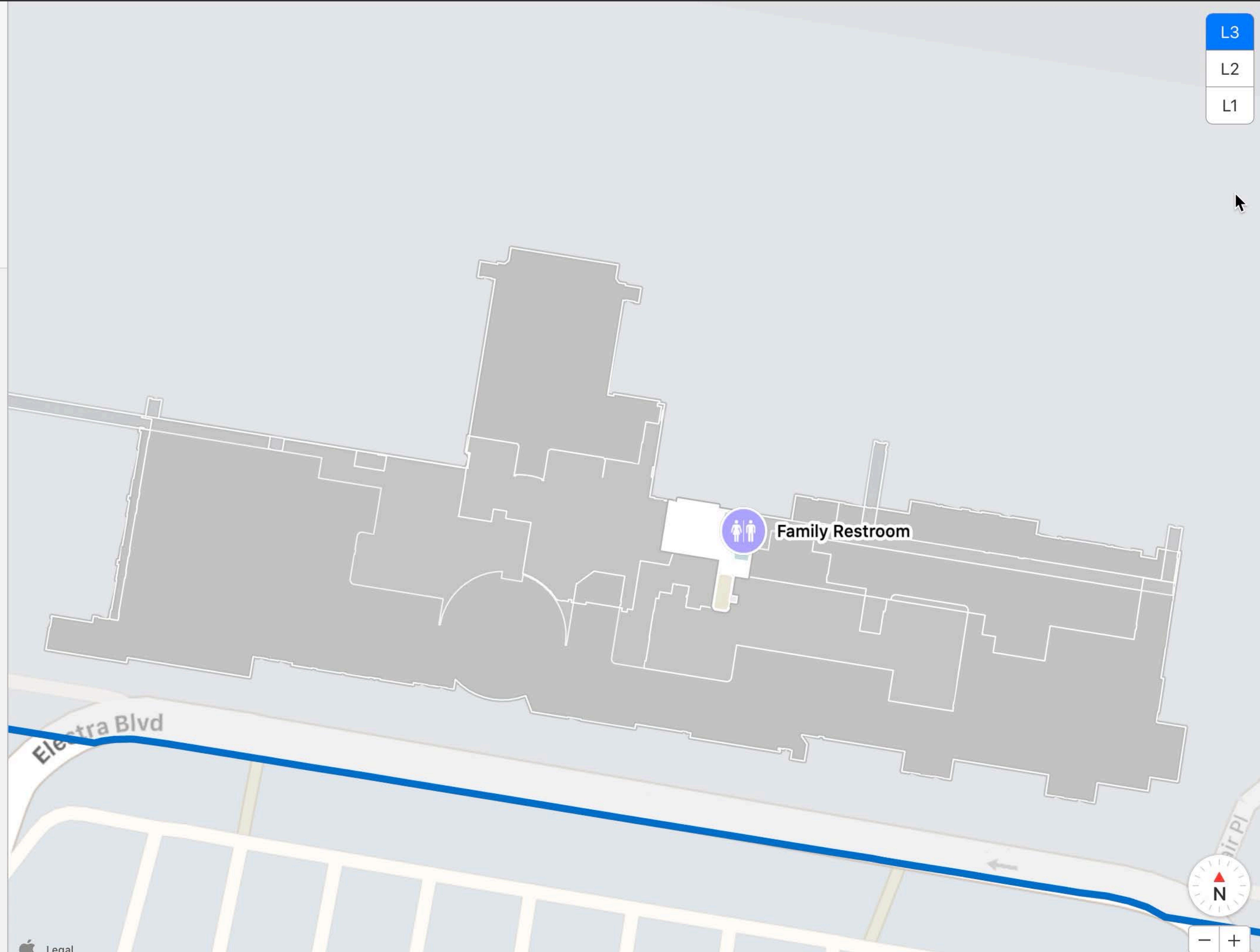
Directory

- General Information >
- Building Information >
- Businesses 14 >
- Services 110 >

Levels

- Level 3 >
- Level 2 >
- Level 1 >

- L3
- L2
- L1





Victoria International Airport

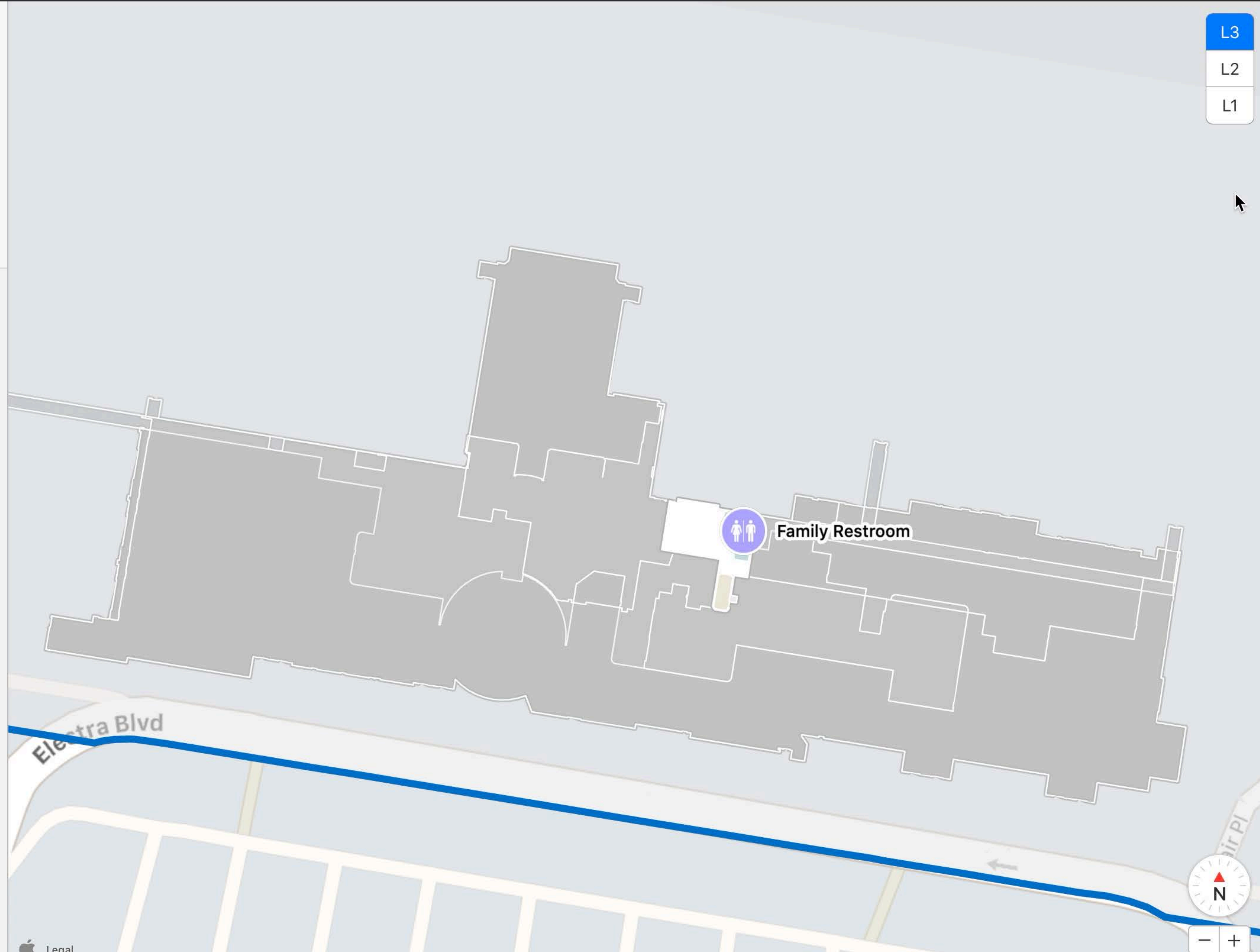
Warnings found 19 >

Directory

- General Information >
- Building Information >
- Businesses 14 >
- Services 110 >

Levels

- Level 3 >
- Level 2 >
- Level 1 >





Victoria International Airport

Warnings found 19

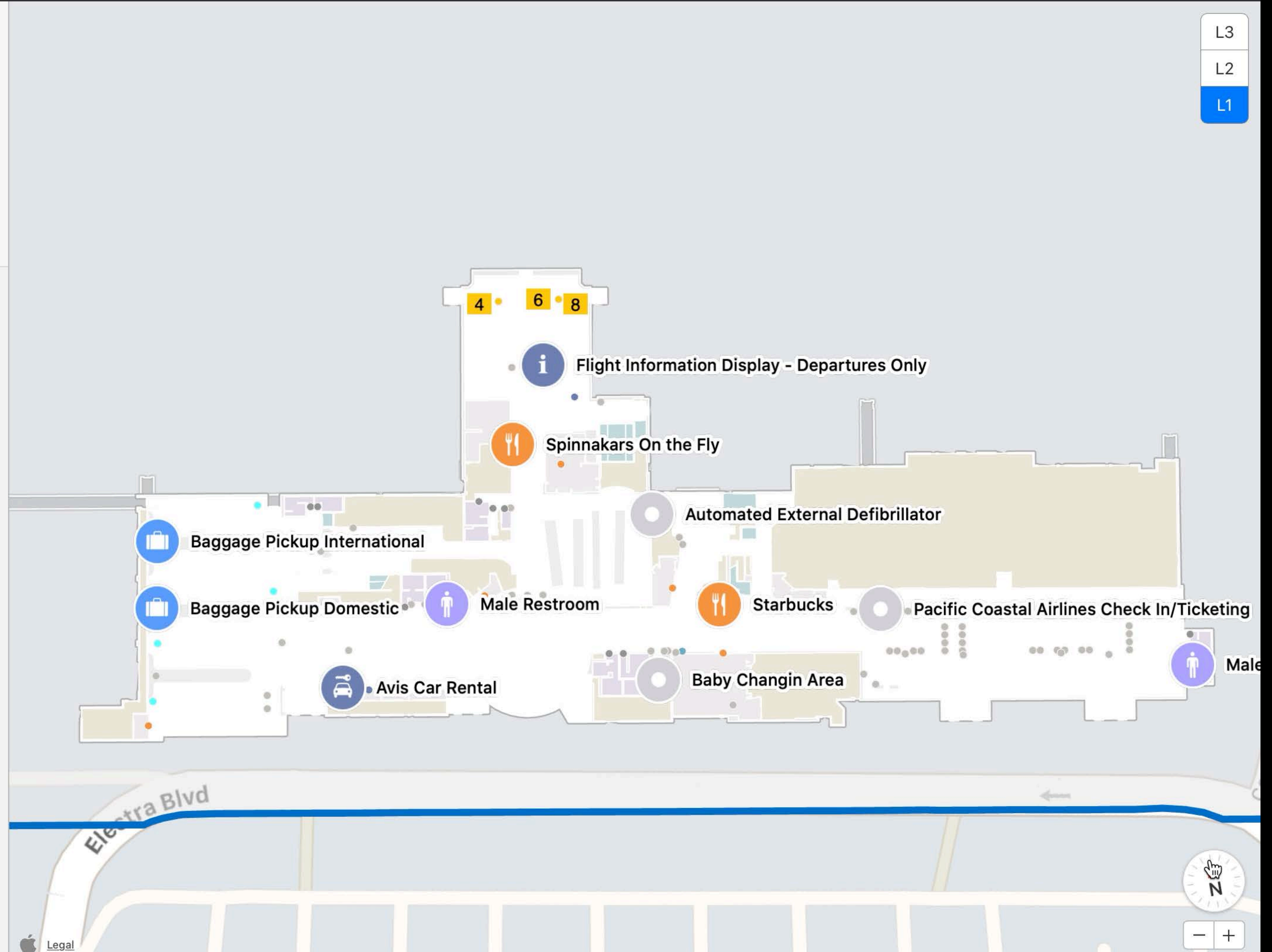
Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1





Victoria International Airport

Warnings found 19

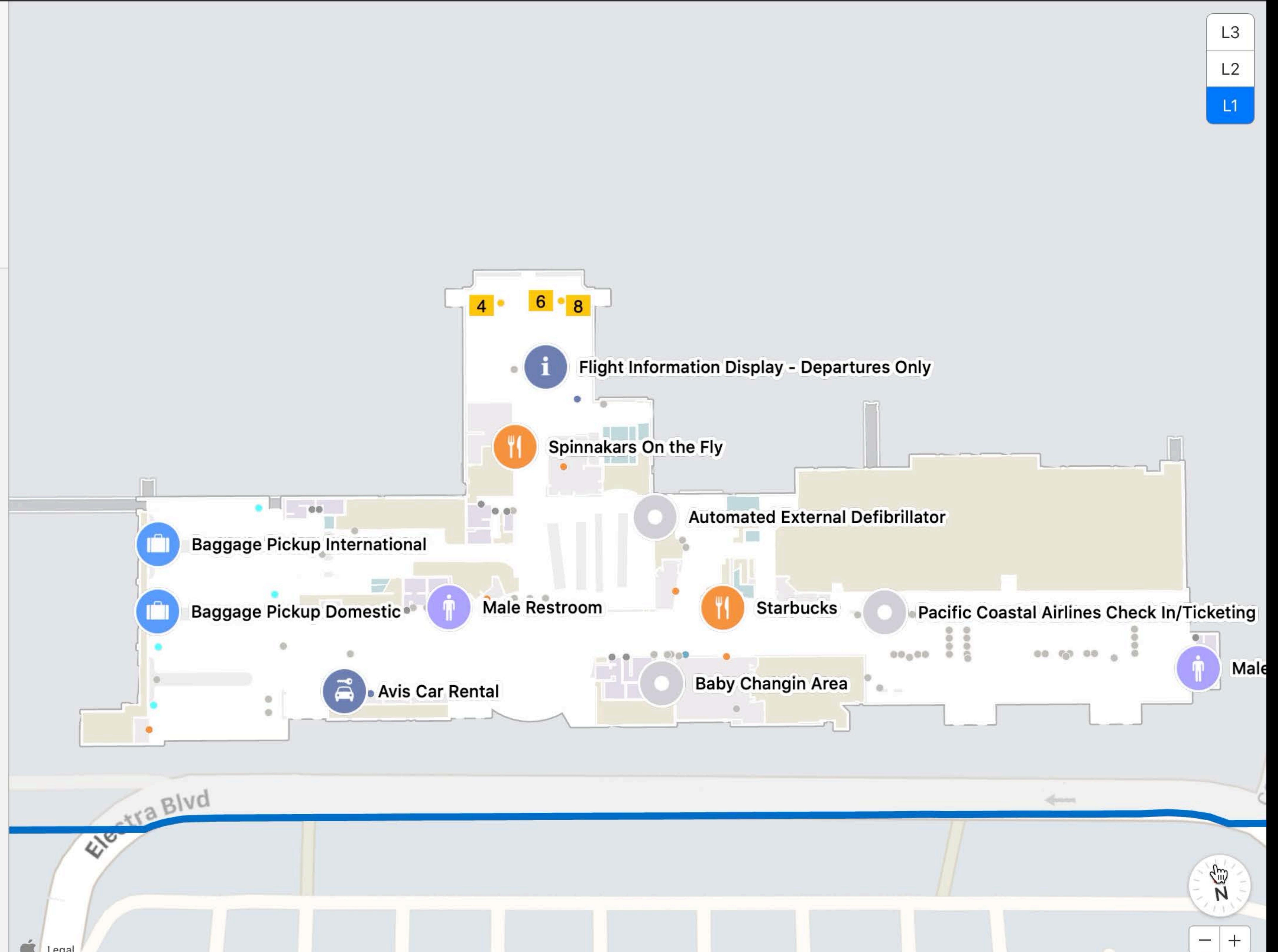
Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1





Services

Warnings found 3 >

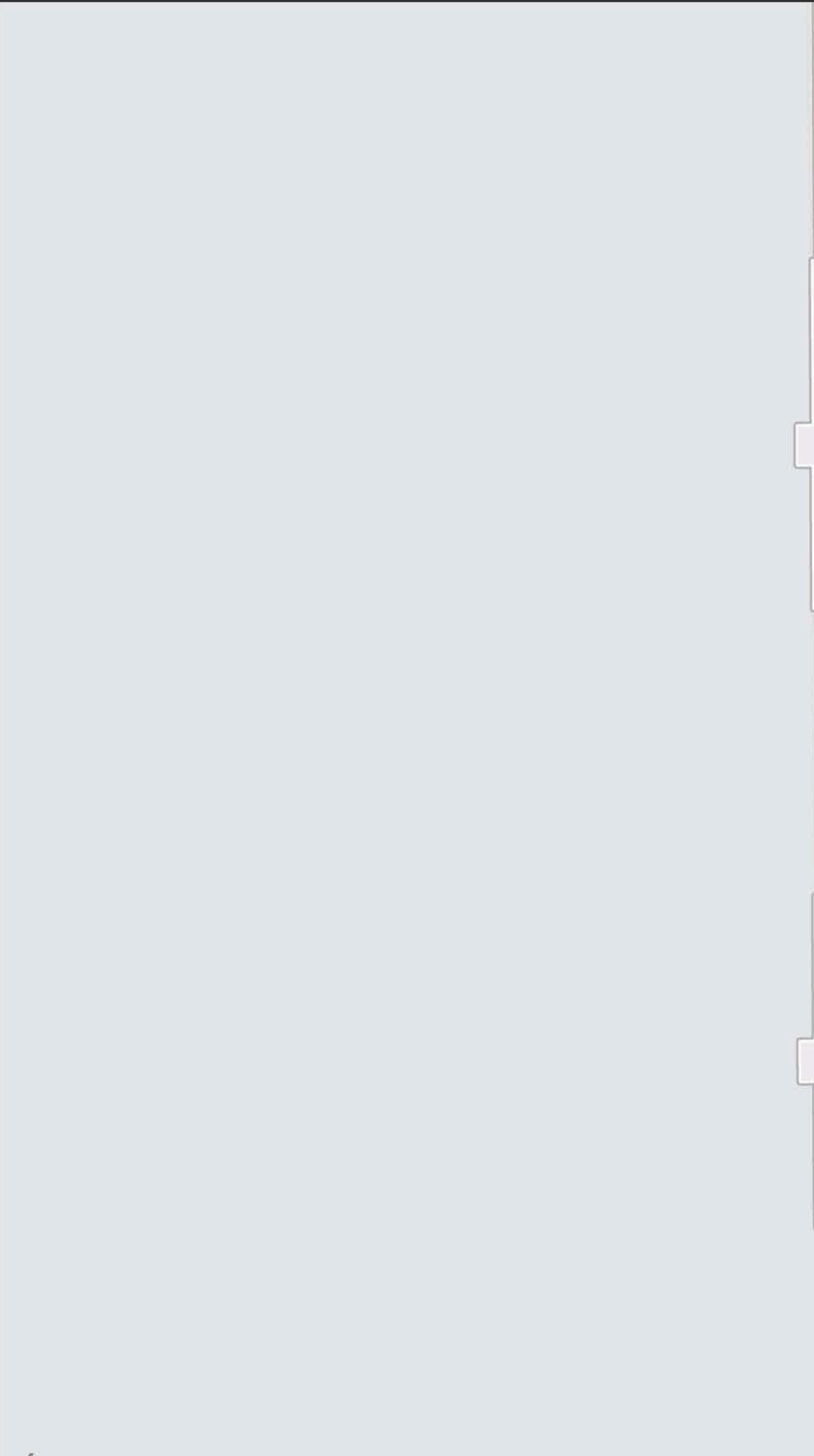
By Level

- Level 3 1 >
- Level 2 18 >
- Level 1 91 >

By Category

[See All](#)

- Arrival Gate 1 >
- ATM 2 >
- Baby Changing Room 1 >
- Baggage Carousel 4 >
- Baggage Carts 2 >



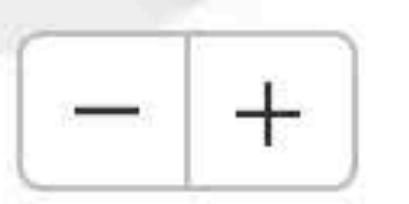
- L3
- L2
- L1

Baggage Pickup International

Baggage Pickup Domestic

Oversize Baggage Claim Area

Baggage Pickup Domestic





Services

Warnings found 3

By Level

- Level 3 1
- Level 2 18
- Level 1 91

By Category

[See All](#)

- Arrival Gate 1
- ATM 2
- Baby Changing Room 1
- Baggage Carousel 4
- Baggage Carts 2

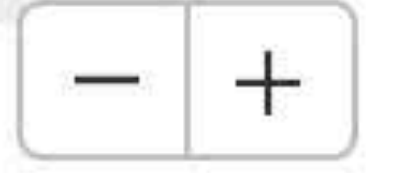
- L3
- L2
- L1

Baggage Pickup International

Baggage Pickup Domestic

Oversize Baggage Claim Area

Baggage Pickup Domestic





Victoria International Airport

Warnings found 19

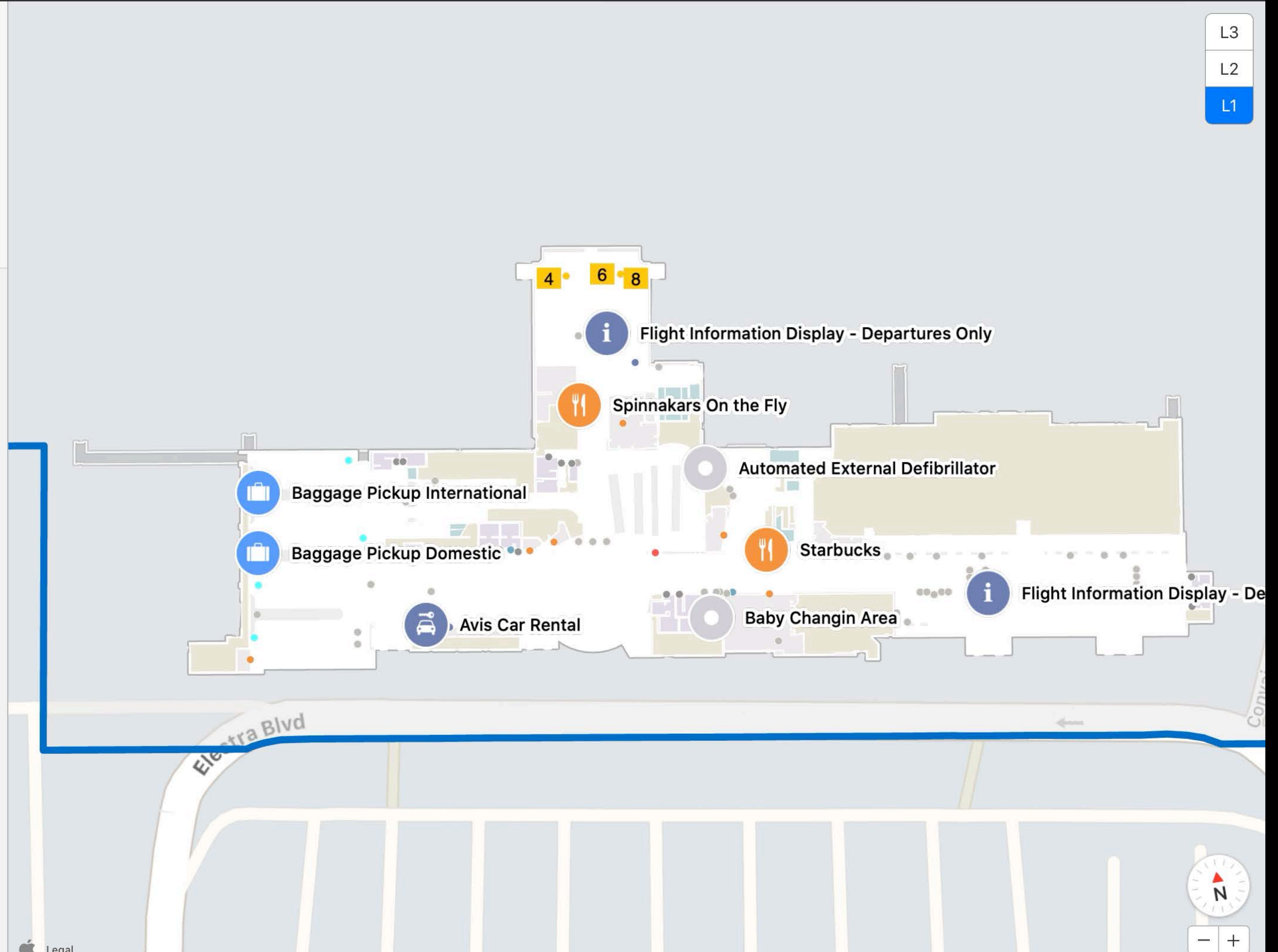
Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1





Victoria International Airport

Warnings found 19

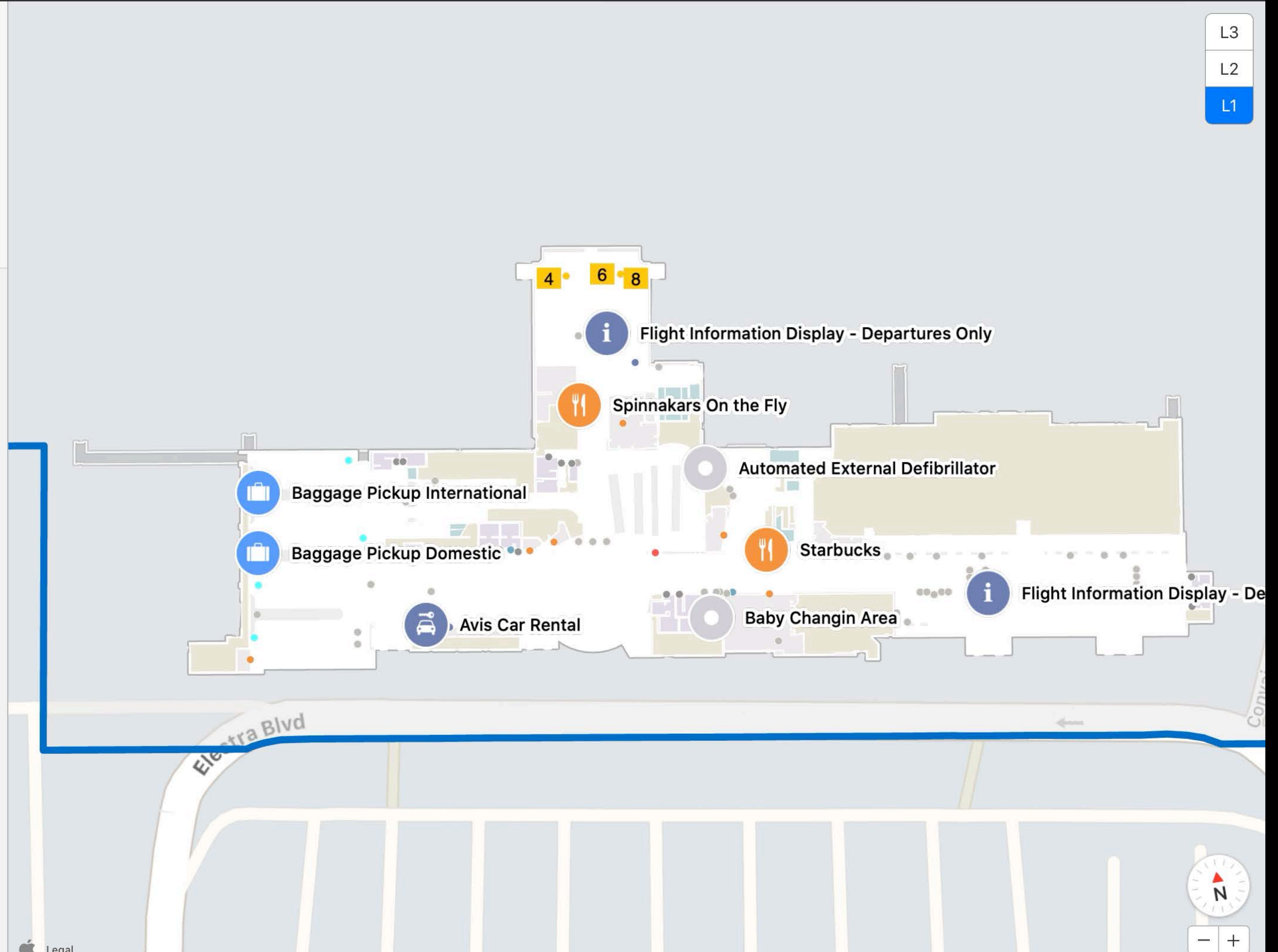
Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1





Victoria International Airport

Warnings found 19

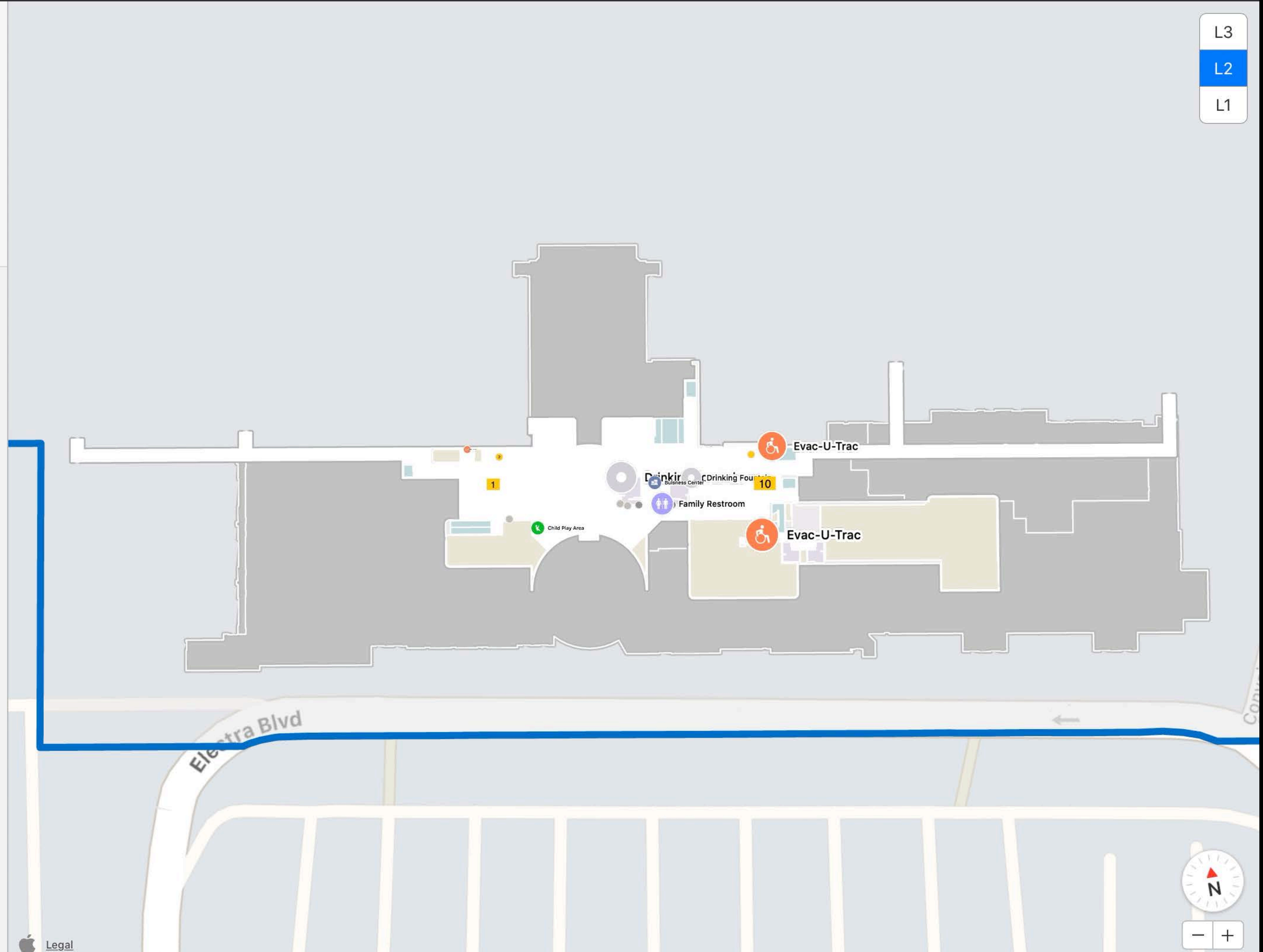
Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1





Victoria International Airport

Warnings found 19

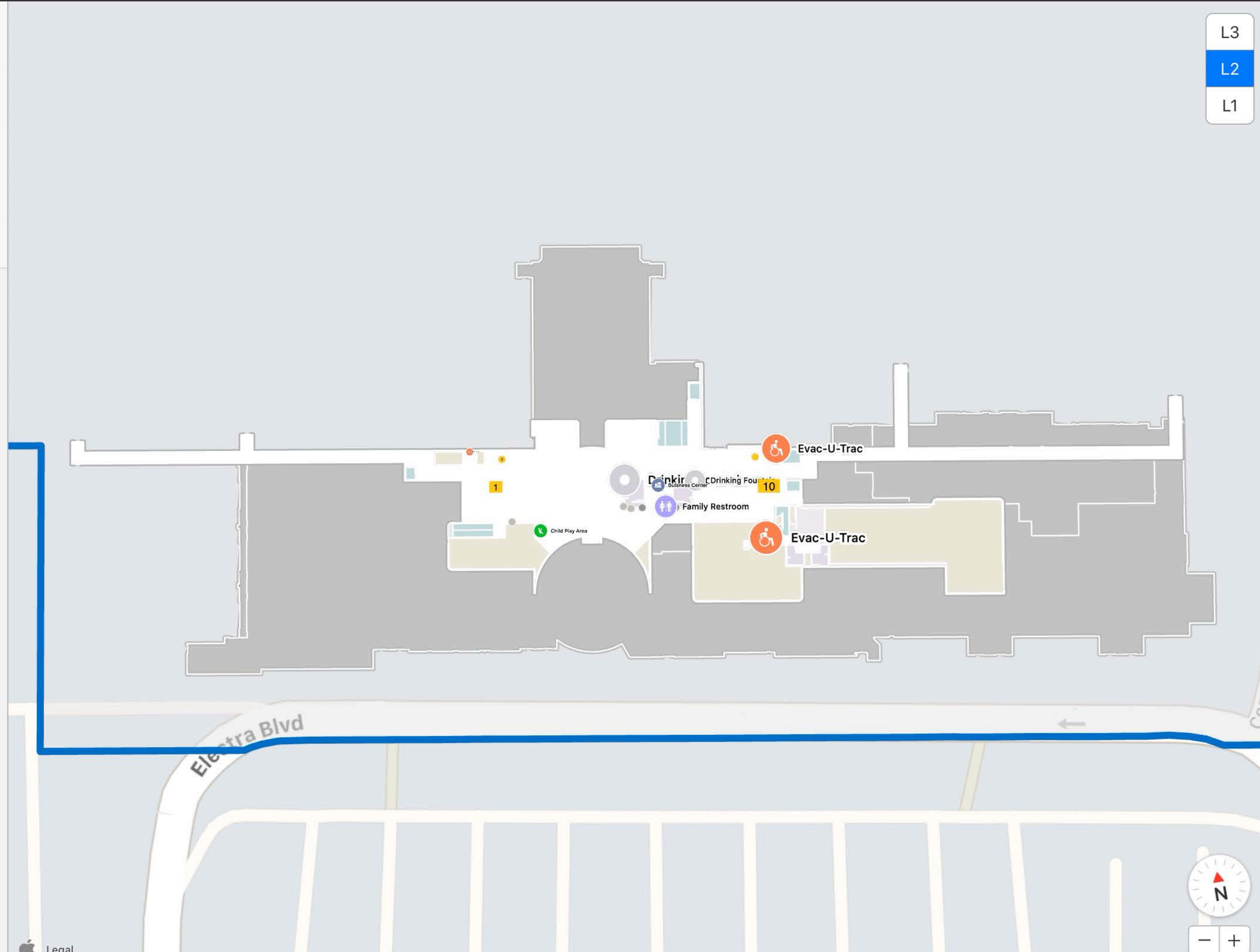
Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1



Demo

Fixing your data



Errors found 3

Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1

Victoria International Airport
Sidney, CA

Terminals	Levels	Businesses
1	3	14

Fixes During File Import

IMDF File Validation
601 Passes, 3 Errors, 31 Warnings

Review





Errors found 3

Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1

Victoria International Airport
Sidney, CA

Terminals	Levels	Businesses
1	3	14

Fixes During File Import

IMDF File Validation
601 Passes, 3 Errors, 31 Warnings

Review



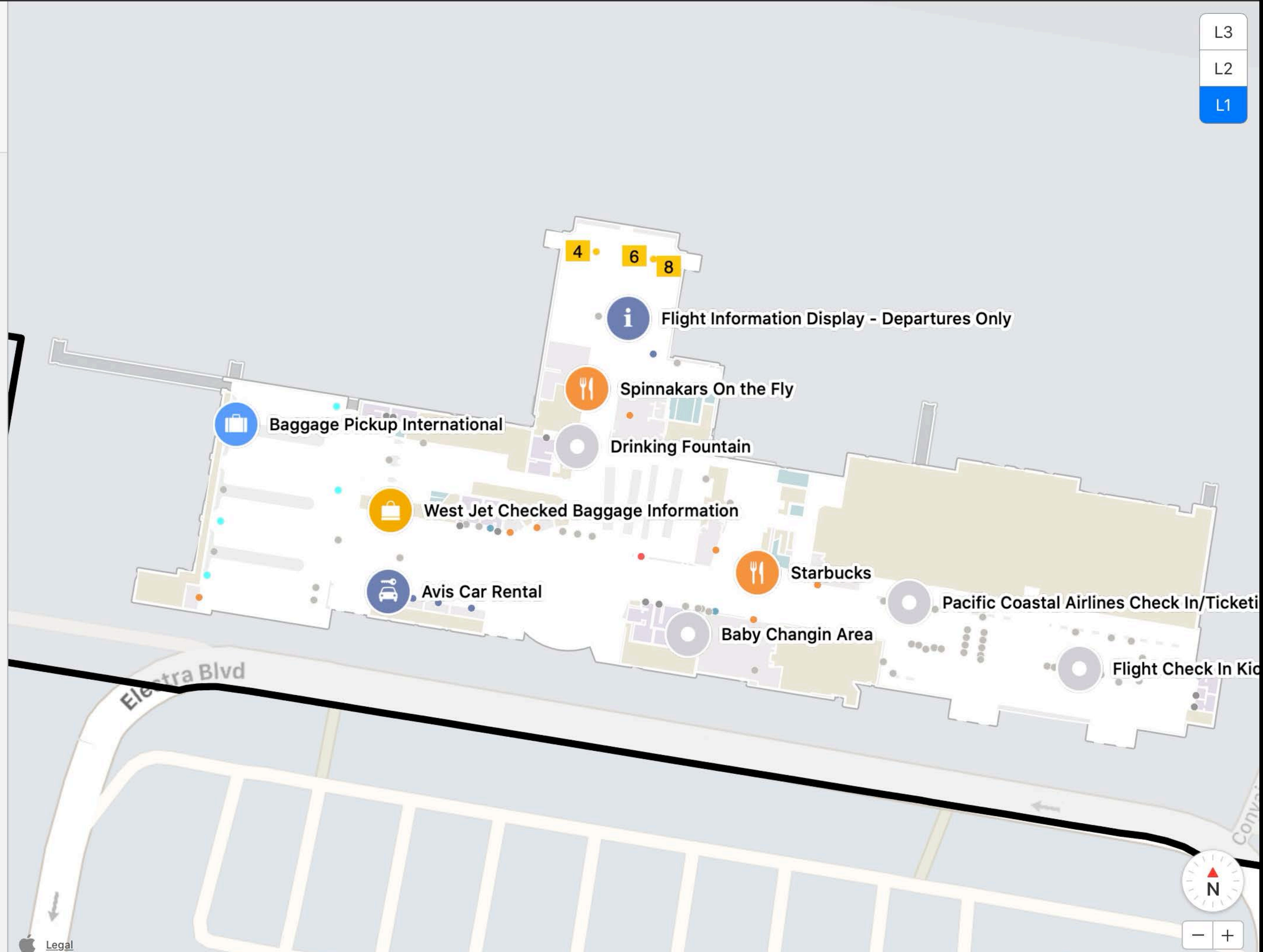


All Issues

Errors | Warnings

- Units Must Not Overlap 2
- Unit Must Be Within Referenced Level 1

L3
L2
L1



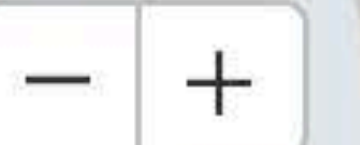
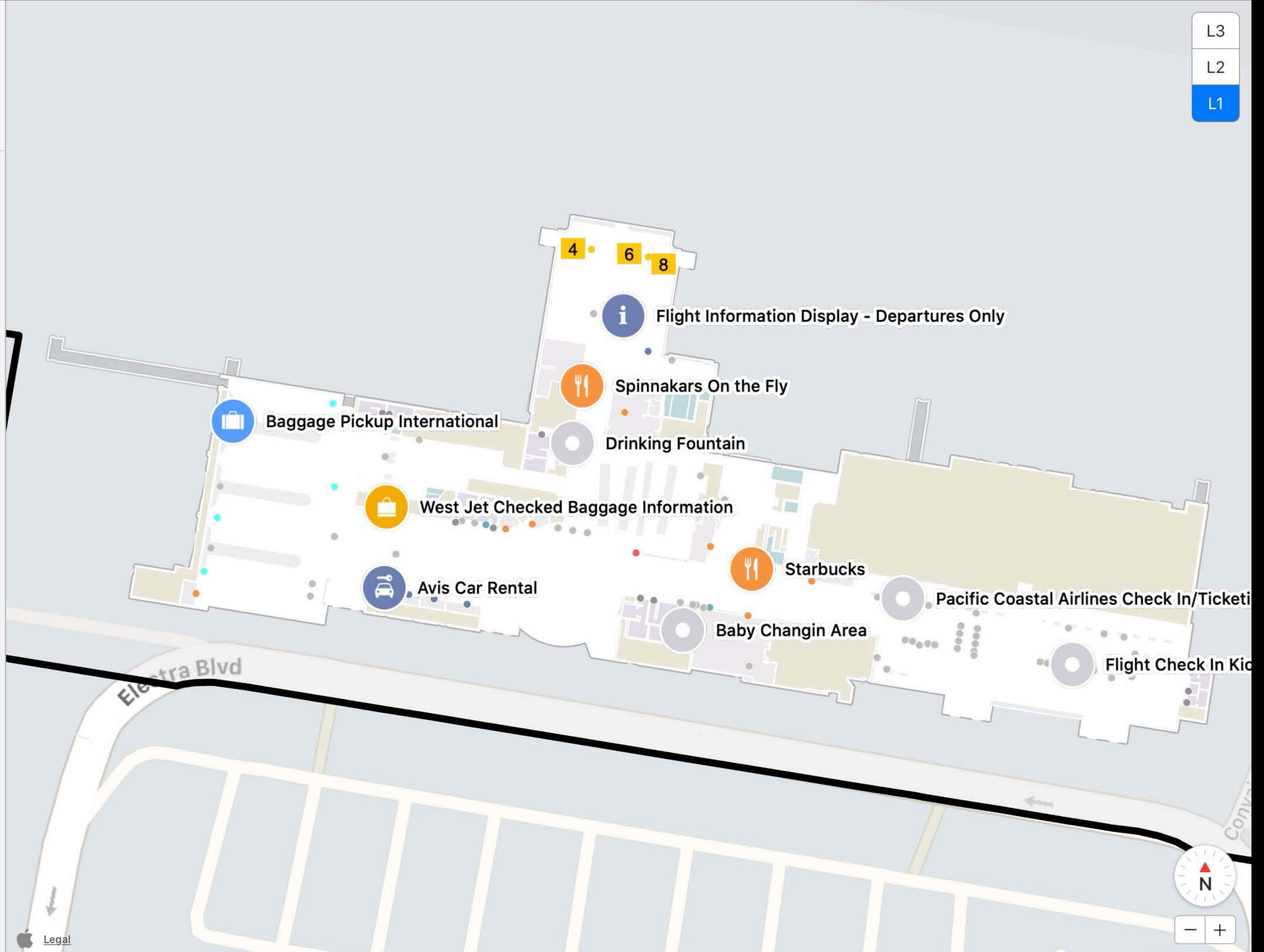


All Issues

Errors | Warnings

- Units Must Not Overlap 2
- Unit Must Be Within Referenced Level 1

L3
L2
L1





Units Must Not Overlap

For more information about this validation, please visit the [IMDF Validations Reference](#)

Two units overlap here.


To fix this, you need to remove the overlapping area from one of them.

Blue Unit

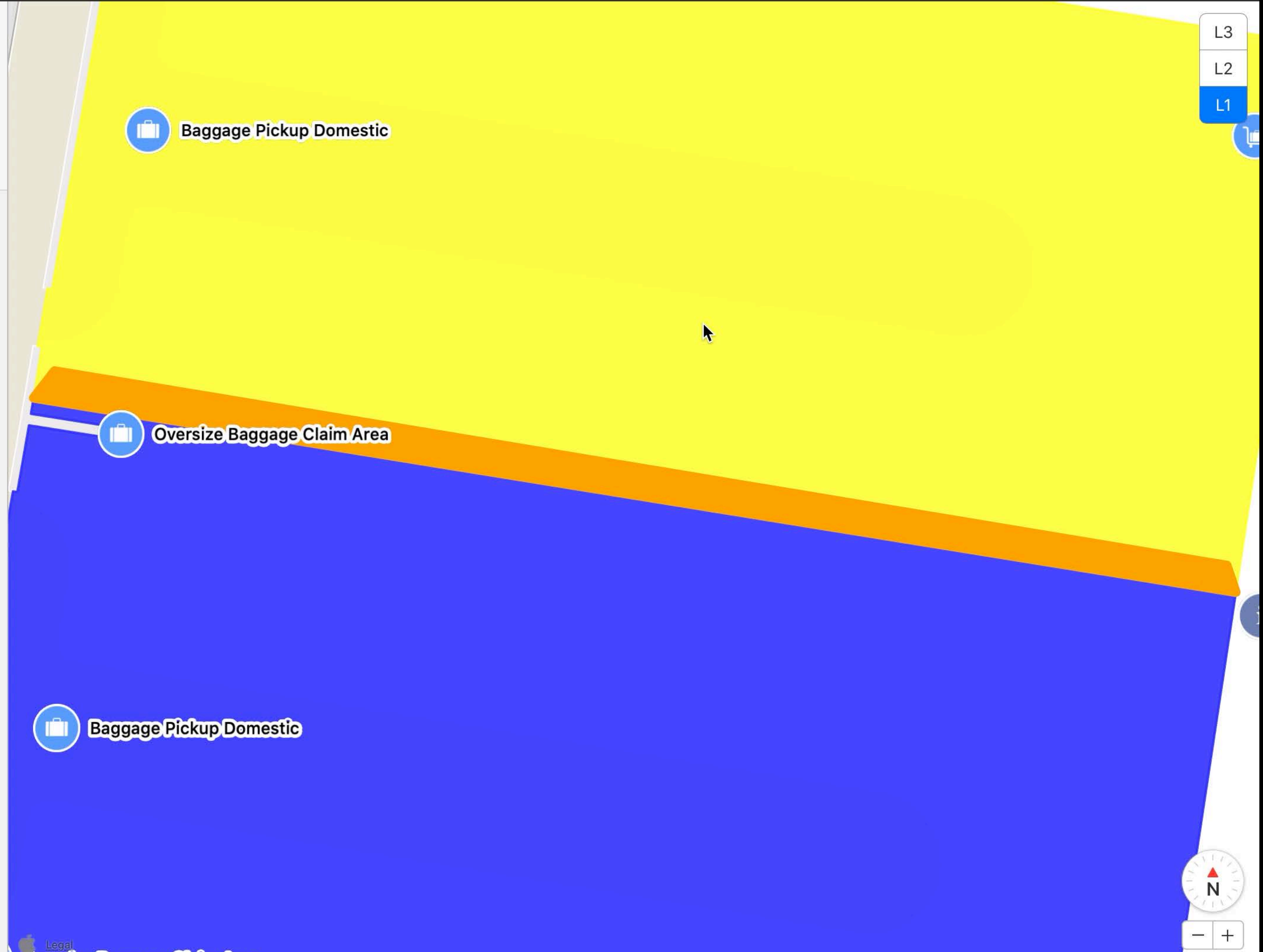

Baggage Pickup Domestic
Level 1
>

Remove from blue unit

Yellow Unit


Baggage Pickup International/
Domestic
Level 1
>

Remove from yellow unit





Units Must Not Overlap

For more information about this validation, please visit the [IMDF Validations Reference](#)

Two units overlap here.

To fix this, you need to remove the overlapping area from one of them.

Blue Unit

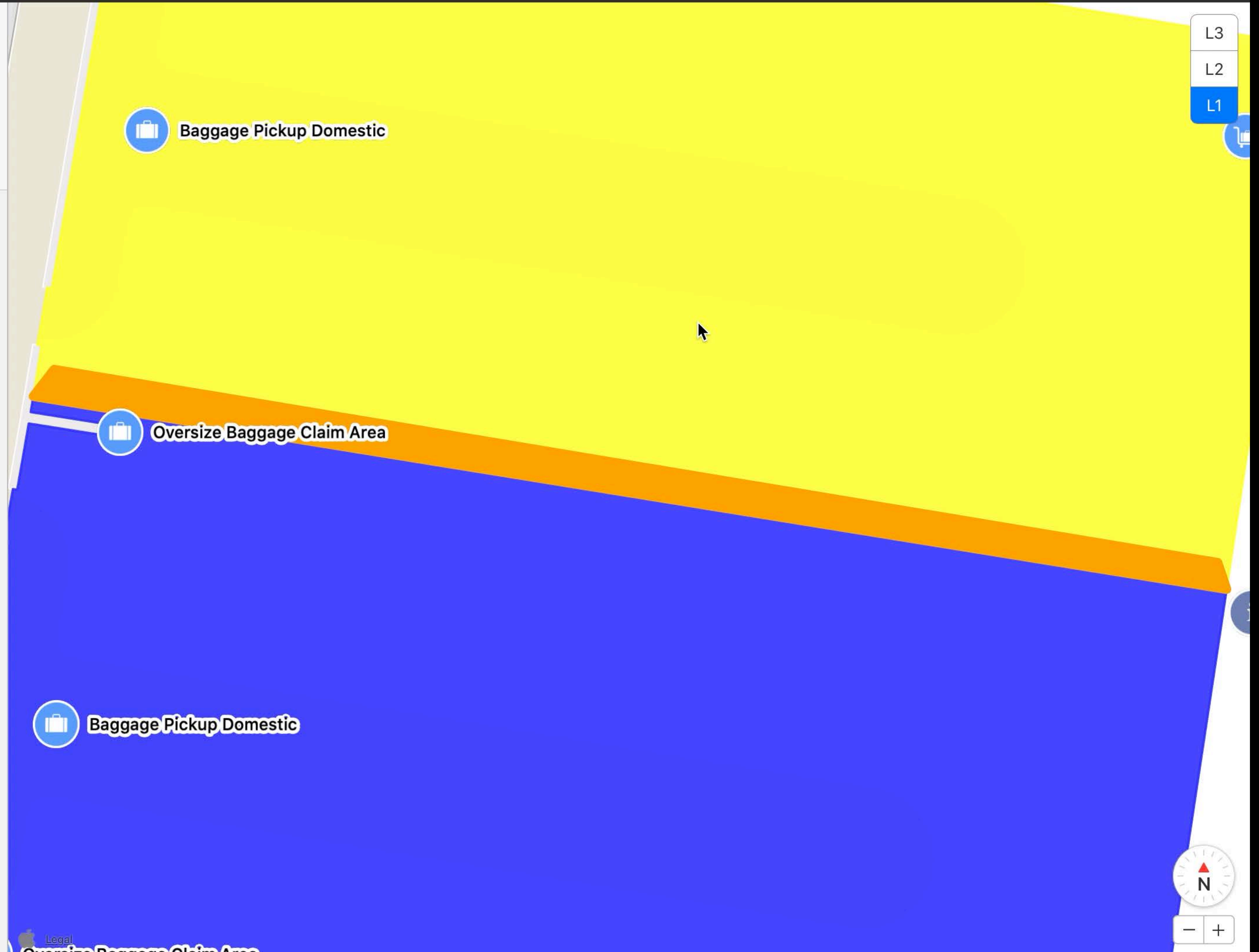
Baggage Pickup Domestic
 Level 1

Remove from blue unit

Yellow Unit

Baggage Pickup International/
 Domestic
 Level 1

Remove from yellow unit



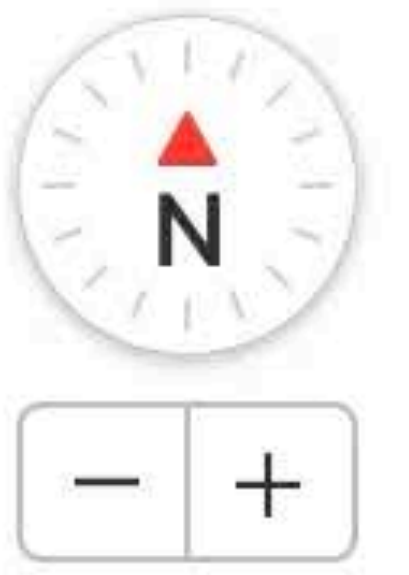
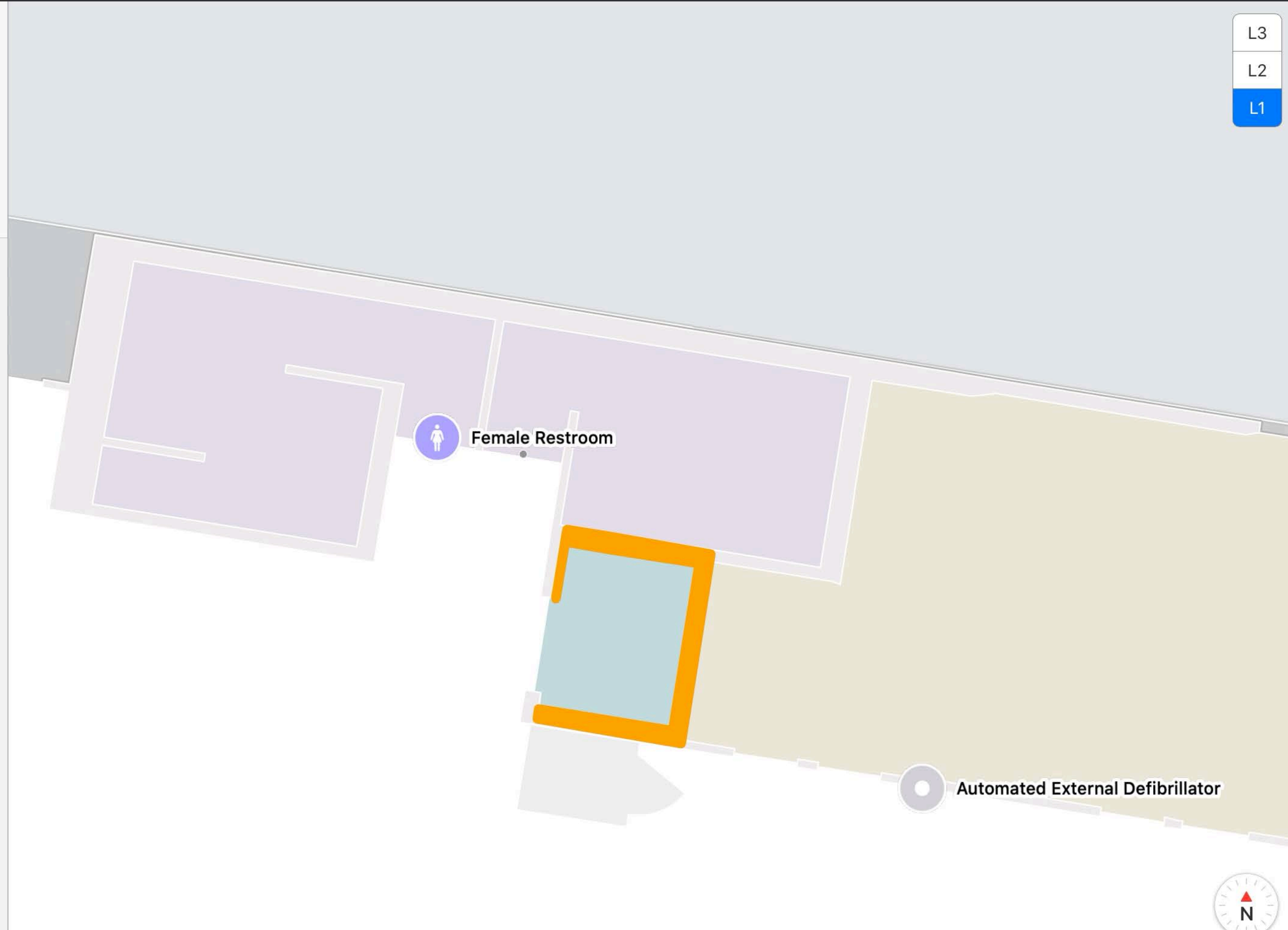
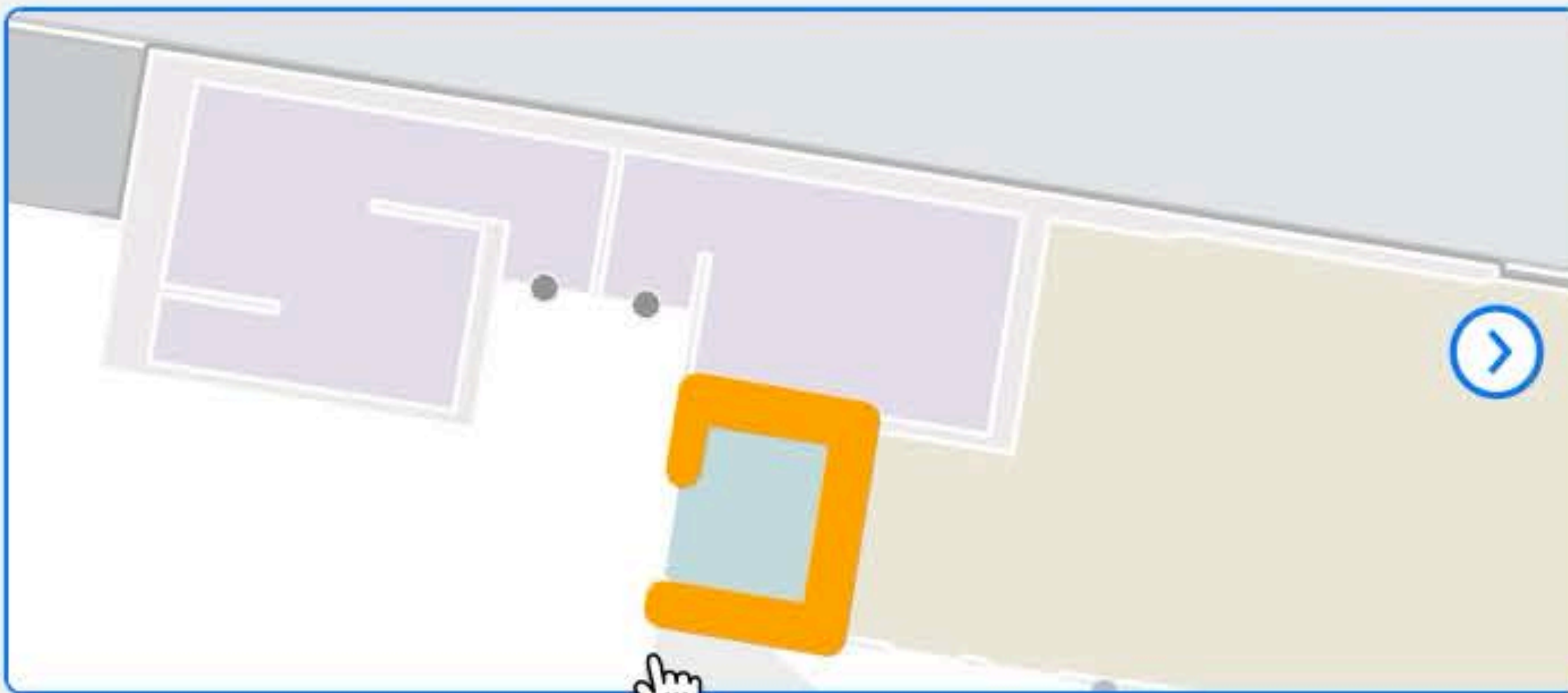


Units Must Not Overlap

This level has areas where units overlap.

For more information about this validation, please visit the [IMDF Validations Reference](#)

Elevator, Structure Unit



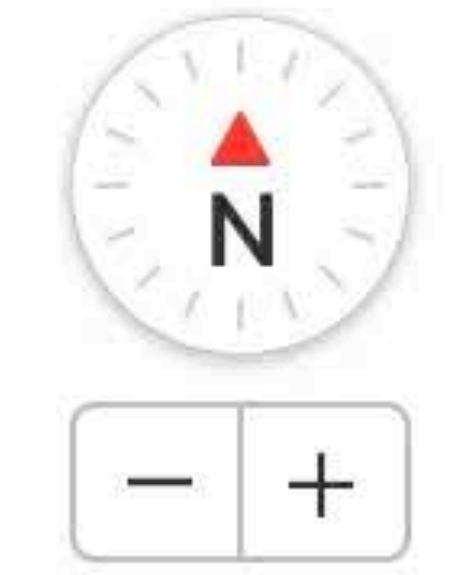
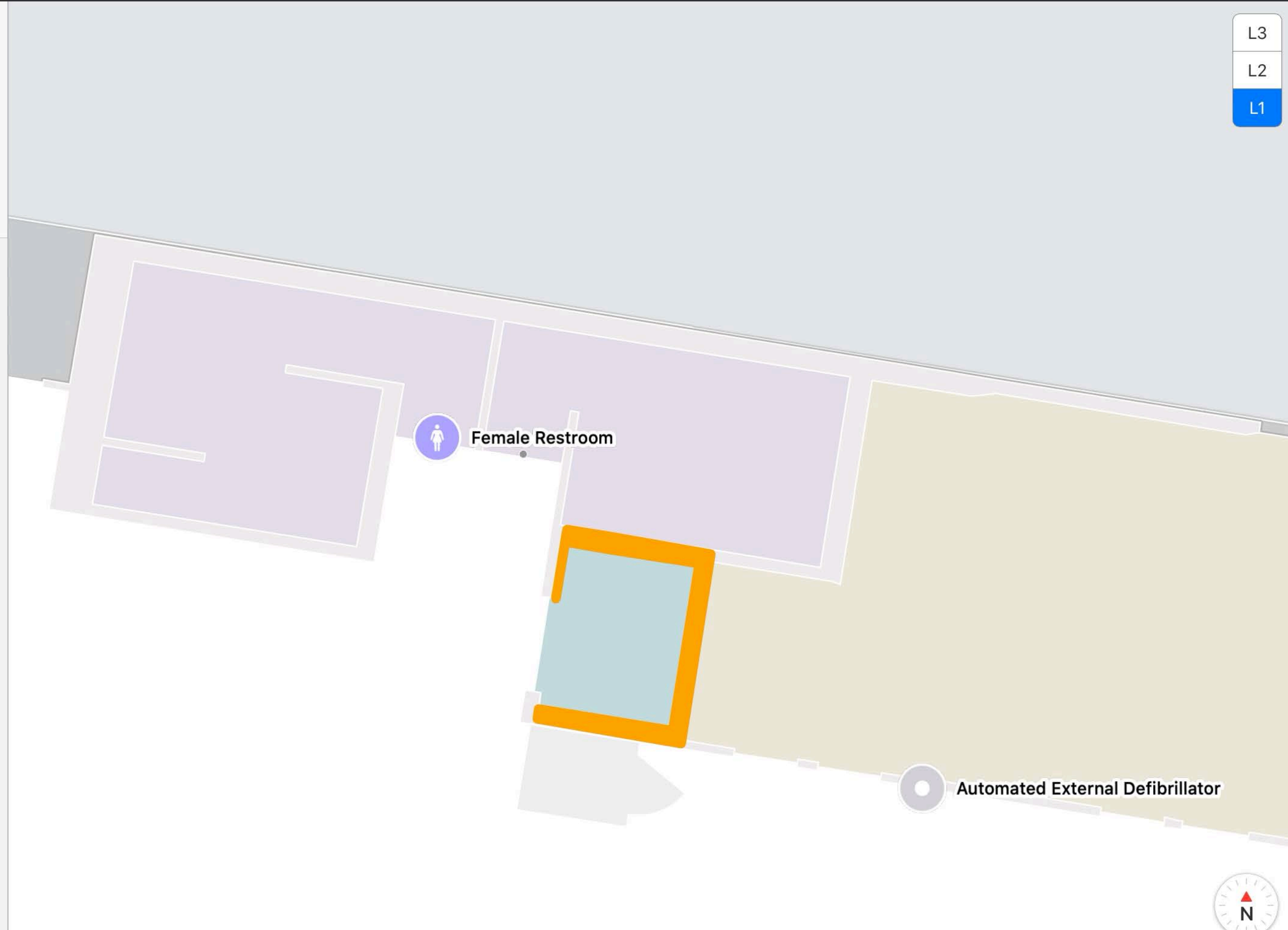
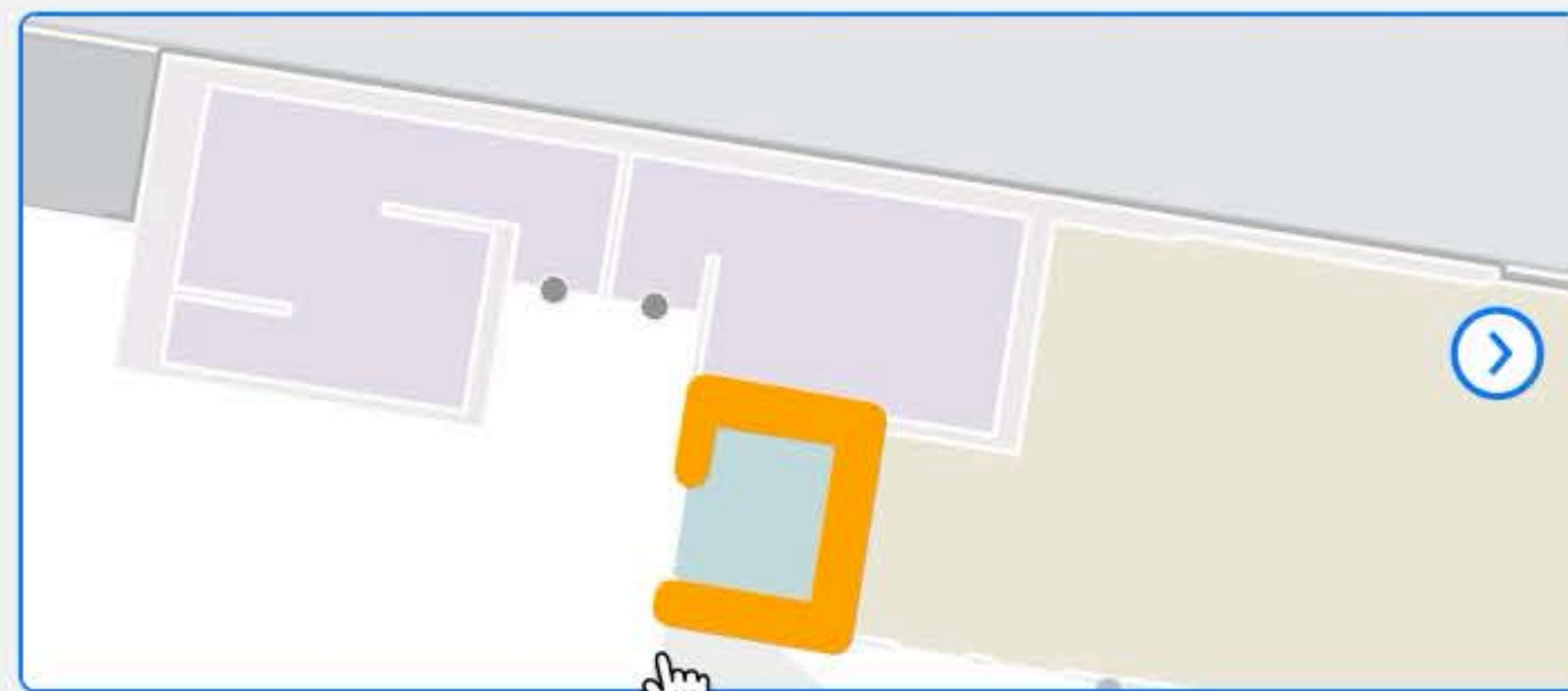


Units Must Not Overlap

This level has areas where units overlap.

For more information about this validation, please visit the [IMDF Validations Reference](#)

Elevator, Structure Unit



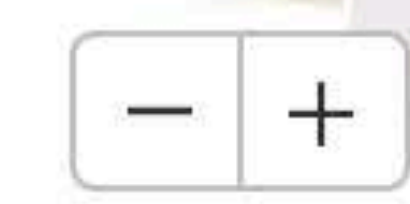
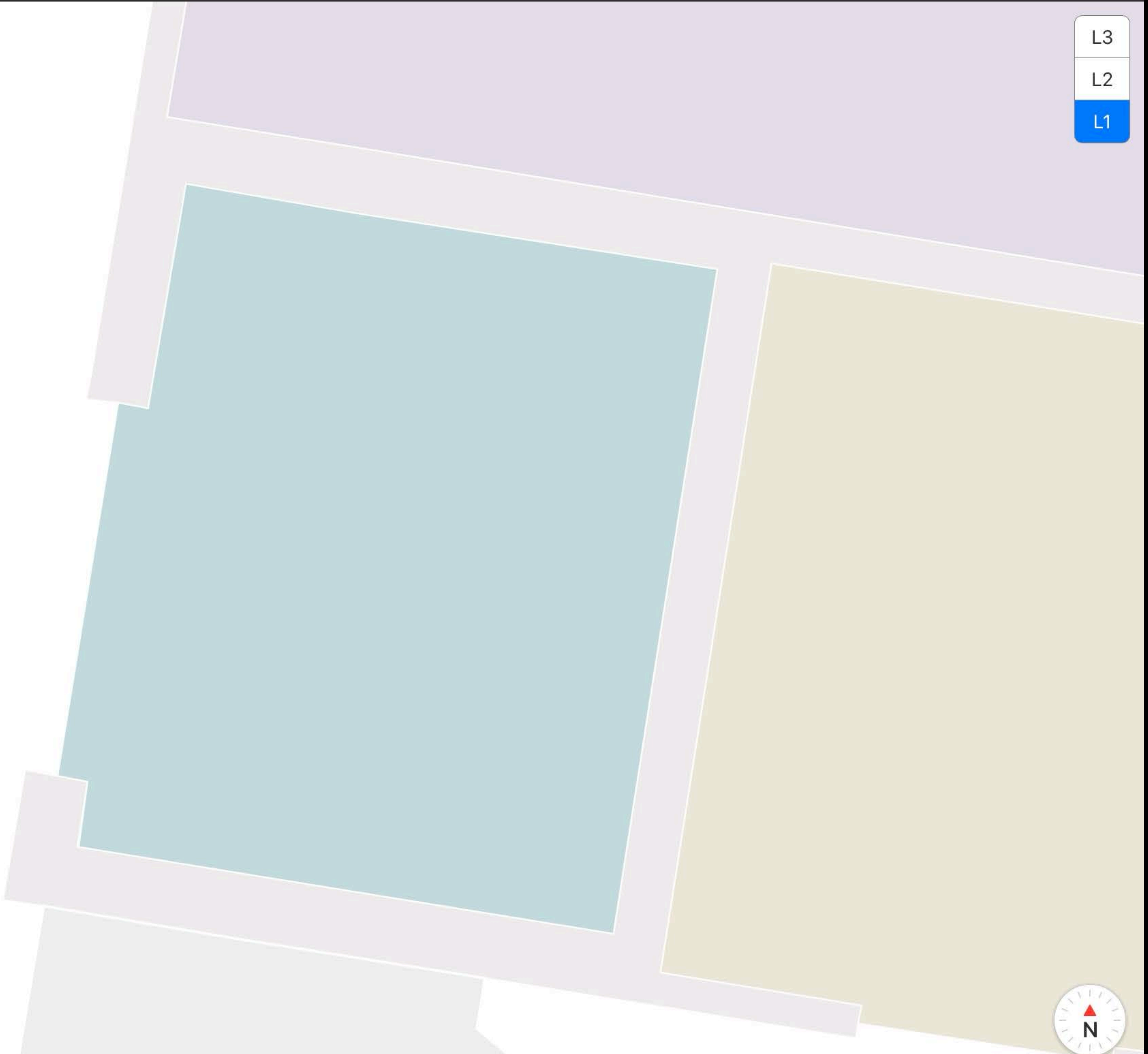


All Issues

Errors Warnings

! Unit Must Be Within Referenced Level 1 >

L3
L2
L1



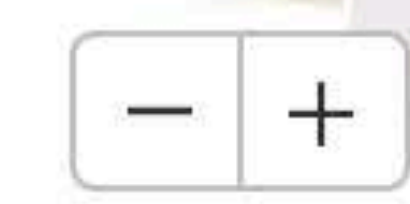
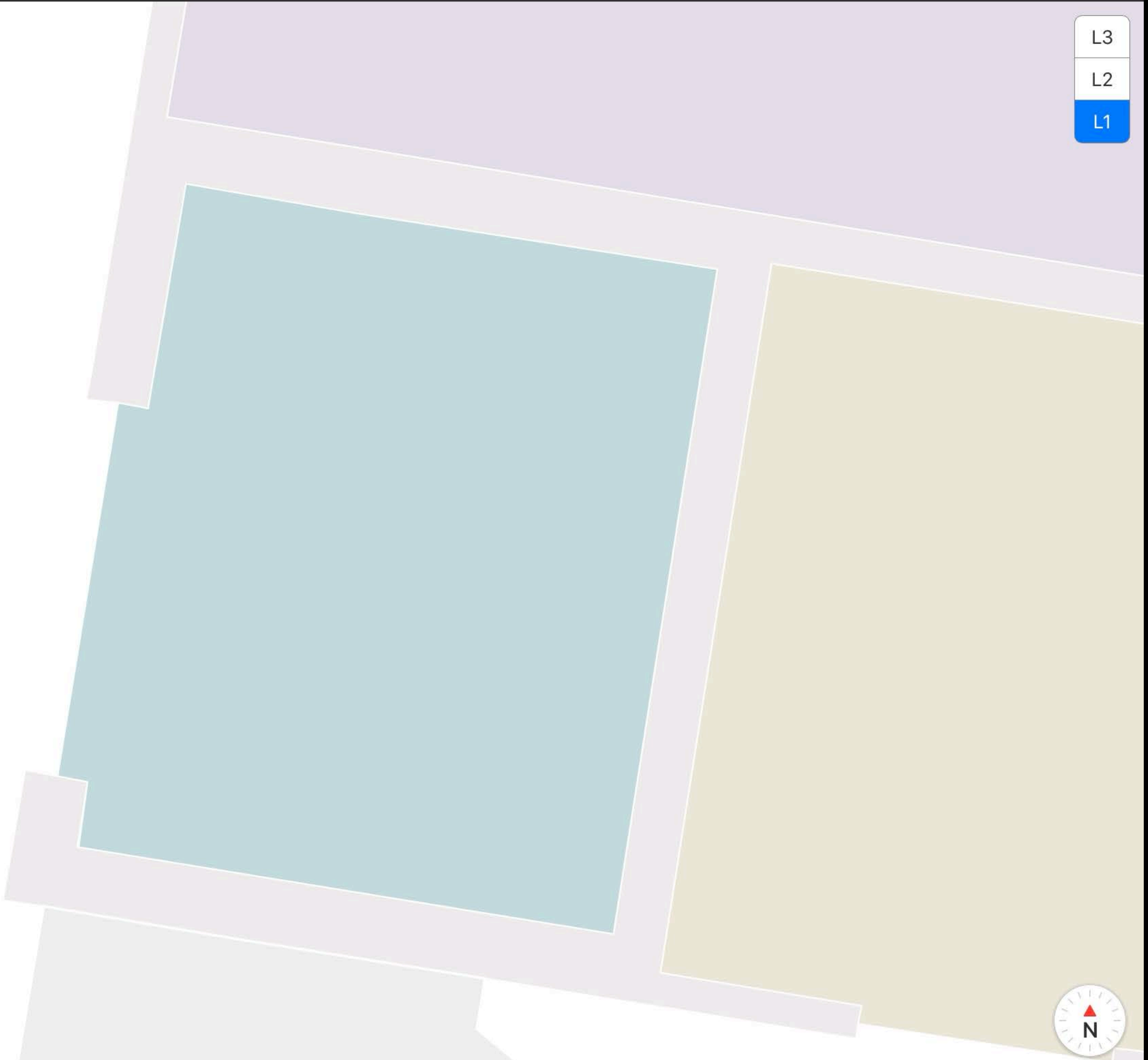


All Issues

Errors Warnings

! Unit Must Be Within Referenced Level 1 >

L3
L2
L1





Unit Must Be Within Referenced Level

For more information about this validation, please visit the [IMDF Validations Reference](#)

Unit extends outside the level

To fix this, either remove the part of the unit that extends outside the level, or expand the level to cover this area.

Unit

Structure Unit Level 1

Remove the area outside the level

Referenced Level

Level 1 Level 1

Expand level to cover the area





Unit Must Be Within Referenced Level

For more information about this validation, please visit the [IMDF Validations Reference](#)

Unit extends outside the level

To fix this, either remove the part of the unit that extends outside the level, or expand the level to cover this area.

Unit

Structure Unit Level 1

Remove the area outside the level

Referenced Level

Level 1 Level 1

Expand level to cover the area





Victoria International Airport

Warnings found 31

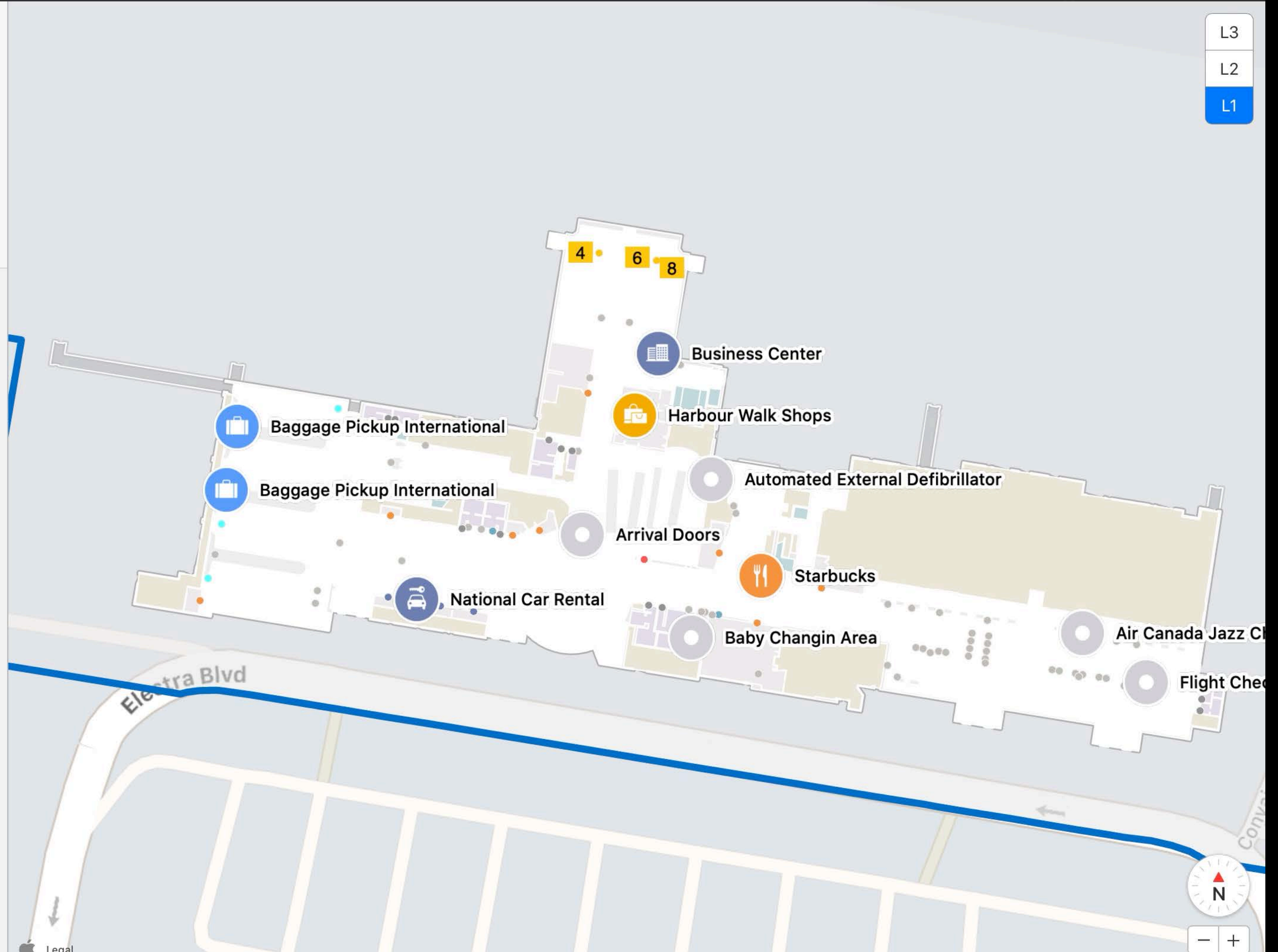
Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1





Victoria International Airport

Warnings found 31

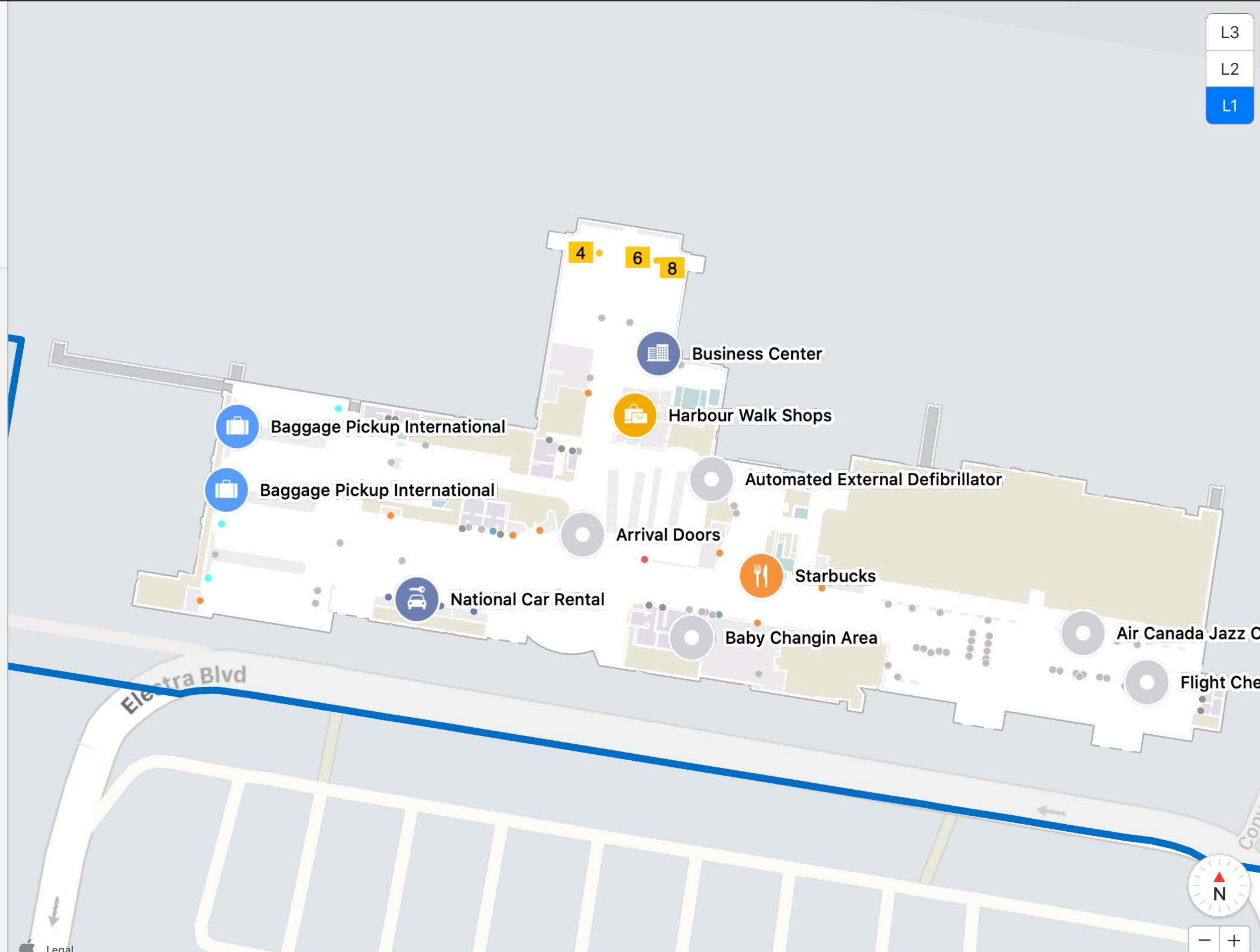
Directory

- General Information
- Building Information
- Businesses 14
- Services 110

Levels

- Level 3
- Level 2
- Level 1

- L3
- L2
- L1



Validate IMDF

Best practices



Validate
IMDF

Validate IMDF

Best practices

Electronically checks accuracy of IMDF



Validate
IMDF

Validate IMDF

Best practices

Electronically checks accuracy of IMDF

Geo-referencing and manual check



Validate
IMDF

Validate IMDF

Best practices

Electronically checks accuracy of IMDF

Geo-referencing and manual check

Easily visualize an IMDF archive



Validate
IMDF

Validate IMDF

Best practices

Electronically checks accuracy of IMDF

Geo-referencing and manual check

Easily visualize an IMDF archive

Investigate and fix simple issues



Validate
IMDF

Validate IMDF

Best practices

Electronically checks accuracy of IMDF

Geo-referencing and manual check

Easily visualize an IMDF archive

Investigate and fix simple issues

Export fixed IMDF



Validate
IMDF

Validate IMDF

Best practices

Electronically checks accuracy of IMDF

Geo-referencing and manual check

Easily visualize an IMDF archive

Investigate and fix simple issues

Export fixed IMDF

IMDF Sandbox available for everyone



Validate
IMDF

Validate IMDF

Best practices

Electronically checks accuracy of IMDF

Geo-referencing and manual check

Easily visualize an IMDF archive

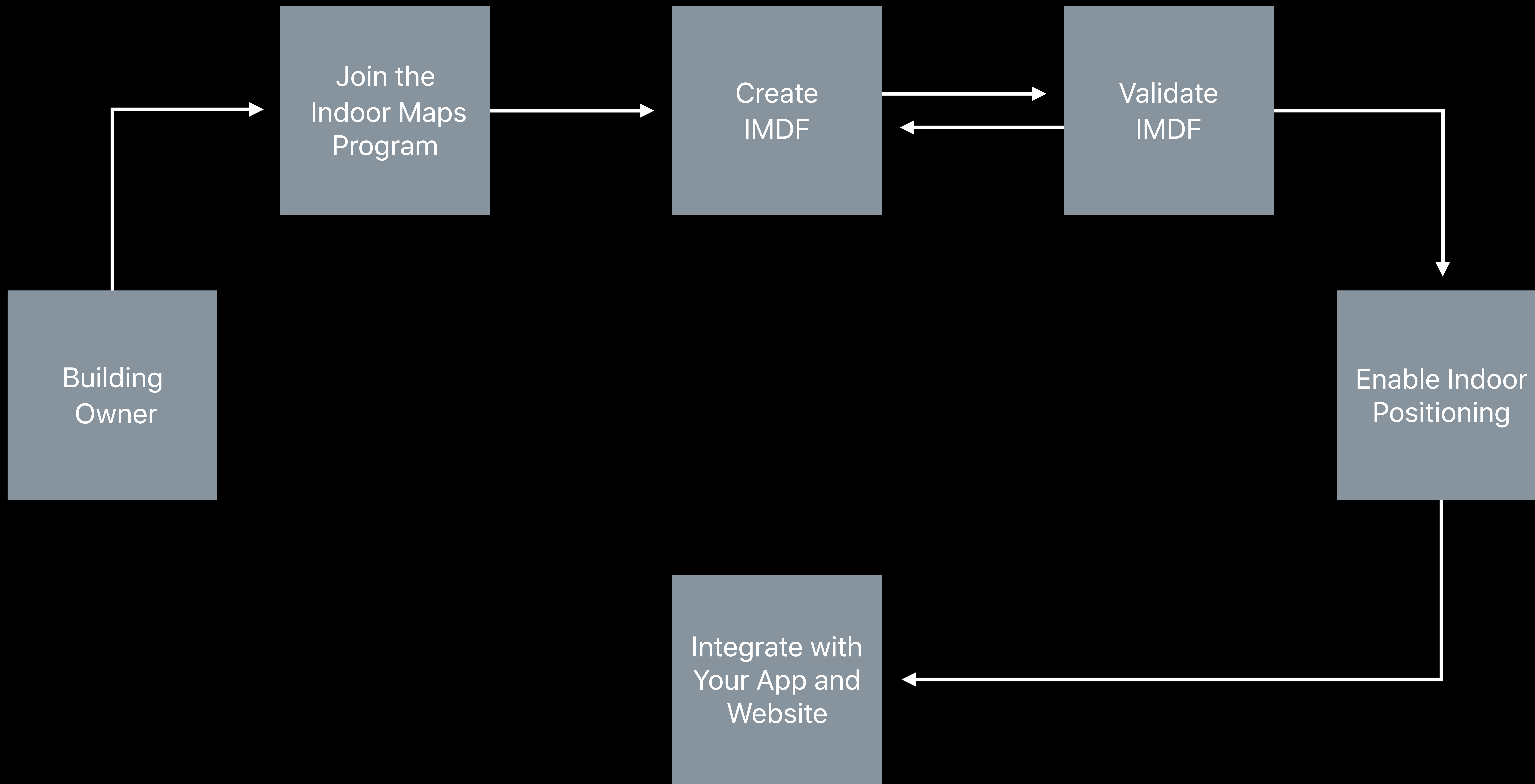
Investigate and fix simple issues

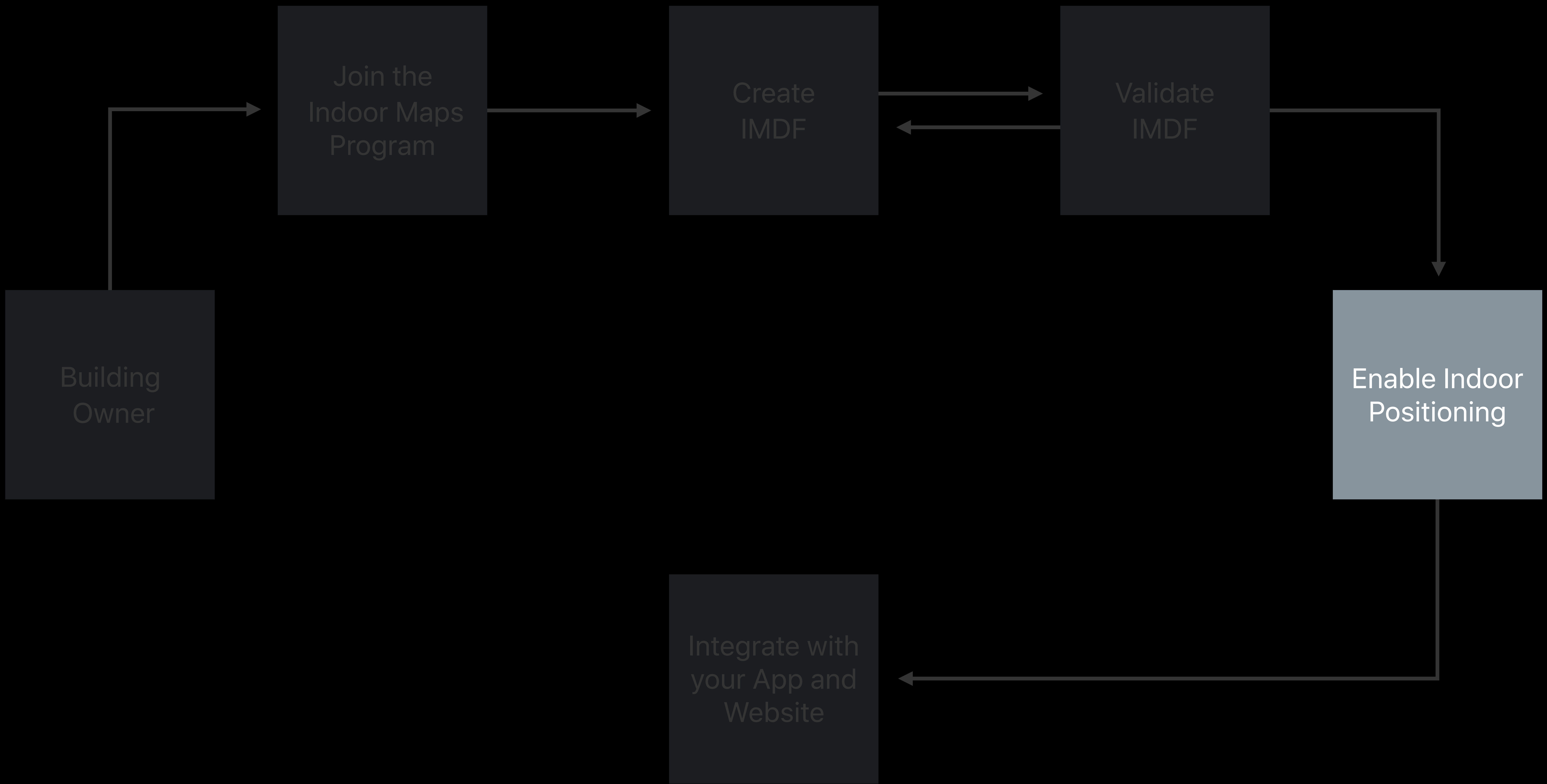
Export fixed IMDF

IMDF Sandbox available for everyone



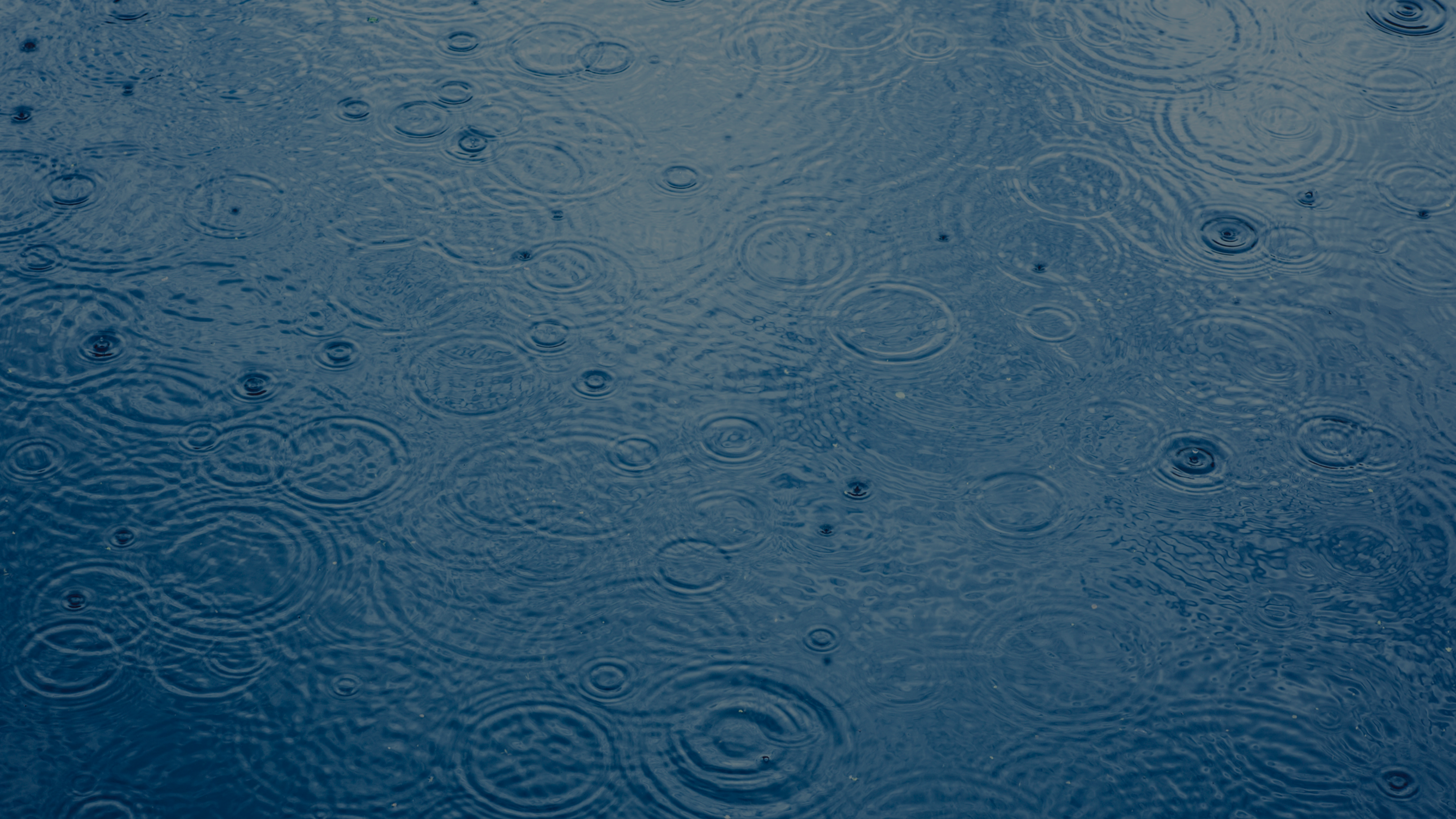
Validate
IMDF

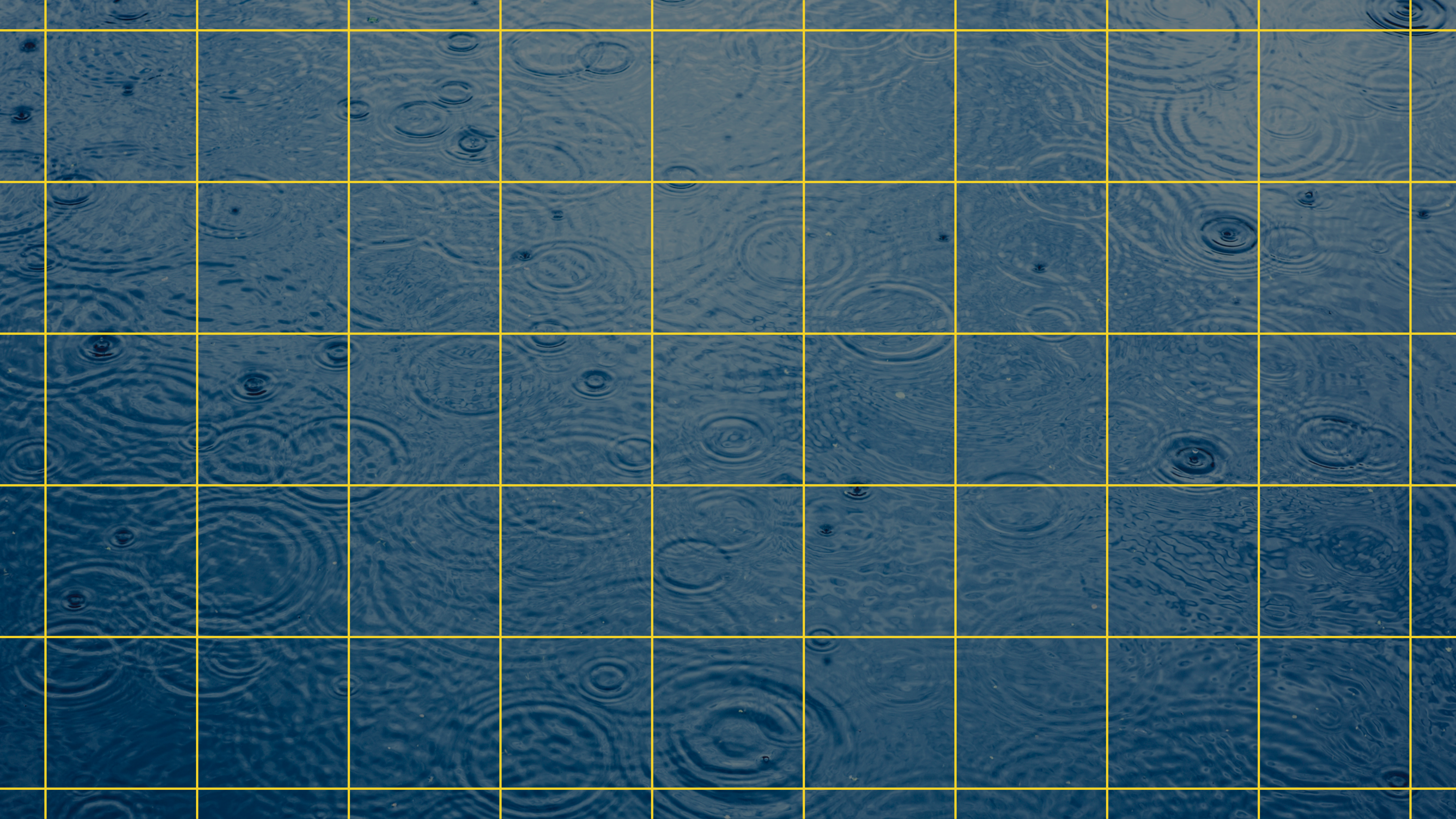


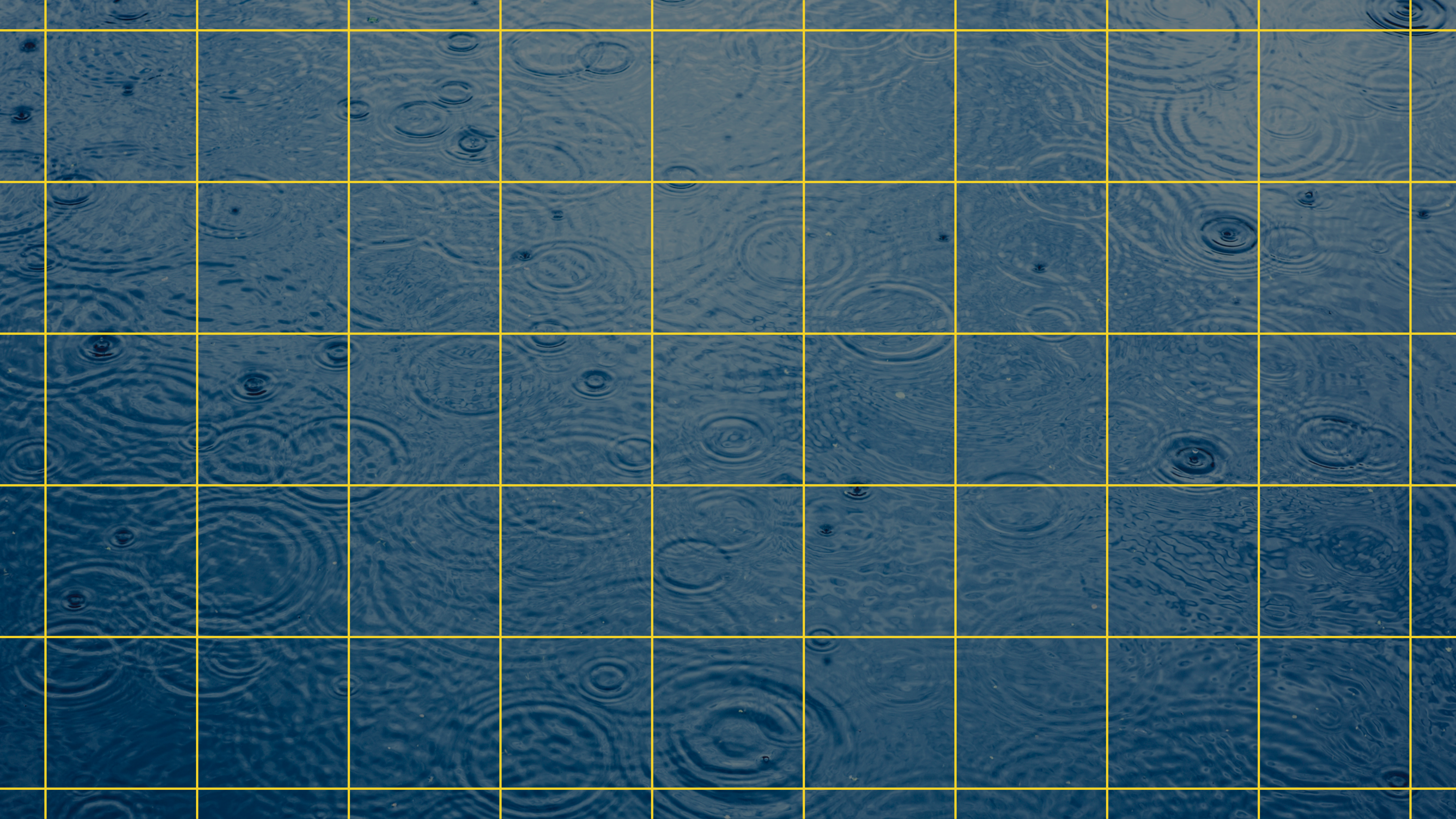










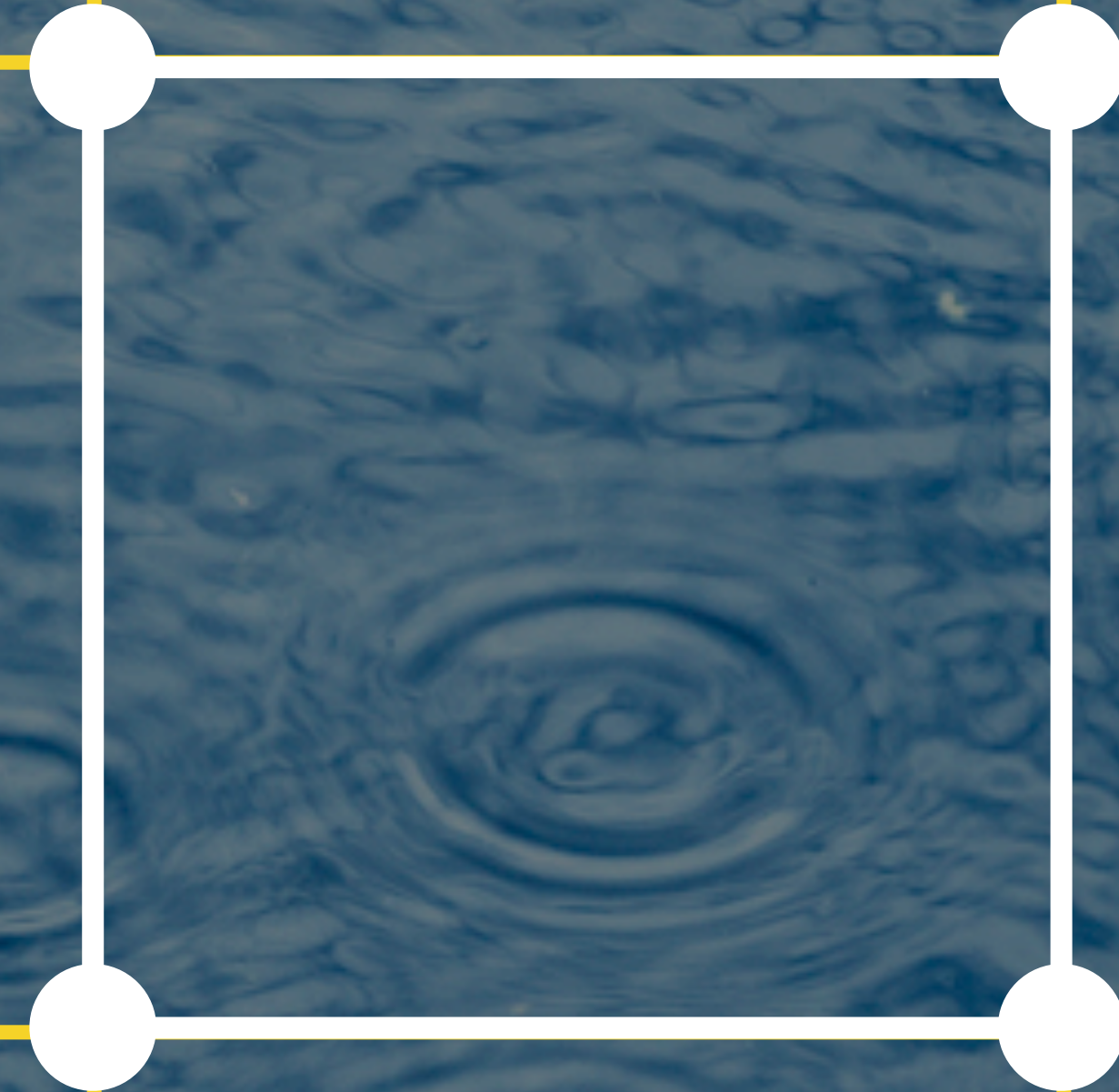


Lat 37.3294
Long -121.8910
CLFloor 0

Lat 37.3306
Long -121.8884
CLFloor 0

Lat 37.3277
Long -121.8897
CLFloor 0

Lat 37.3294
Long -121.8869
CLFloor 0



Lat 37.3294
Long -121.8910
CLFloor 0

Lat 37.3306
Long -121.8884
CLFloor 0



Lat 37.3277
Long -121.8897
CLFloor 0

Lat 37.3294
Long -121.8869
CLFloor 0





+





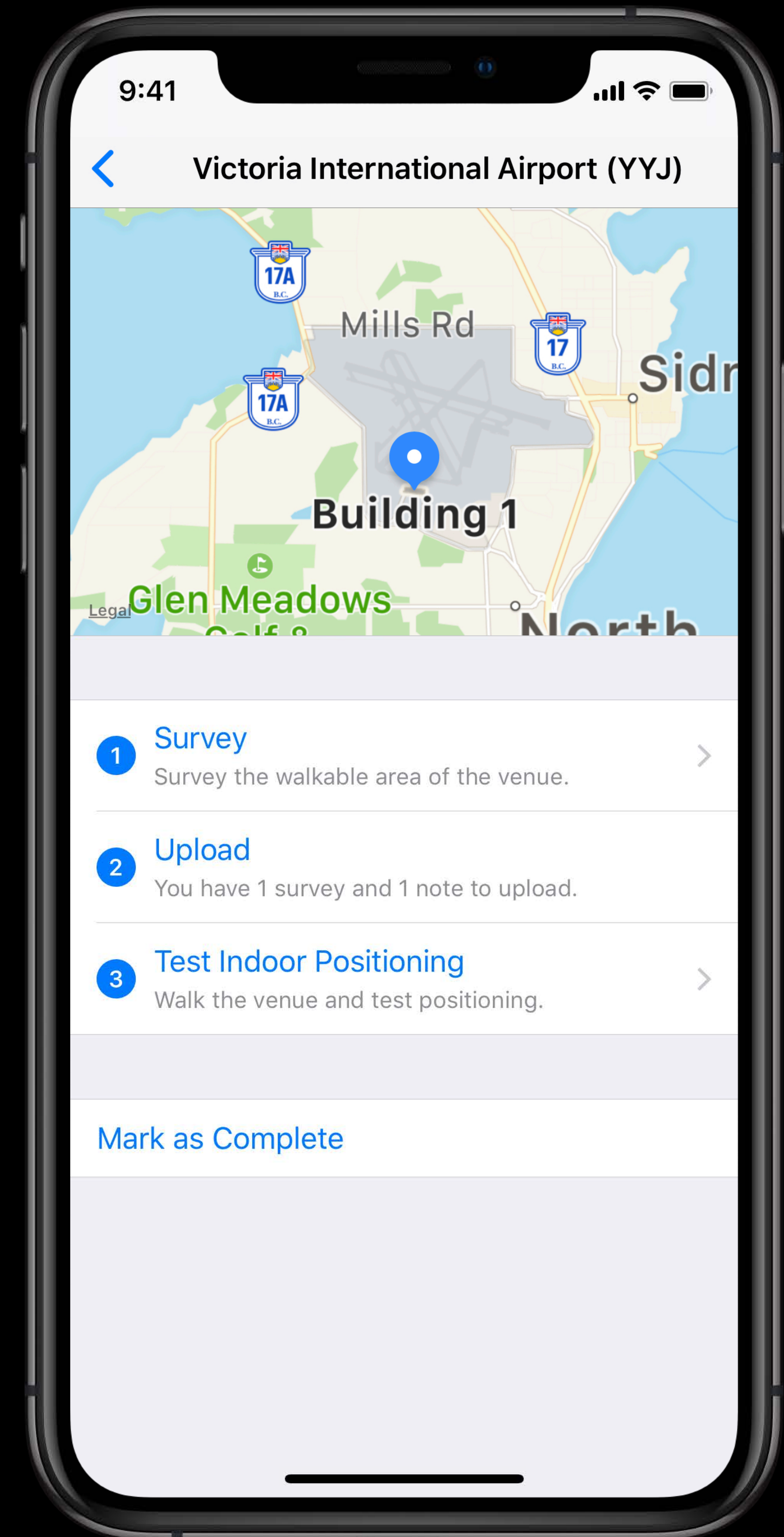
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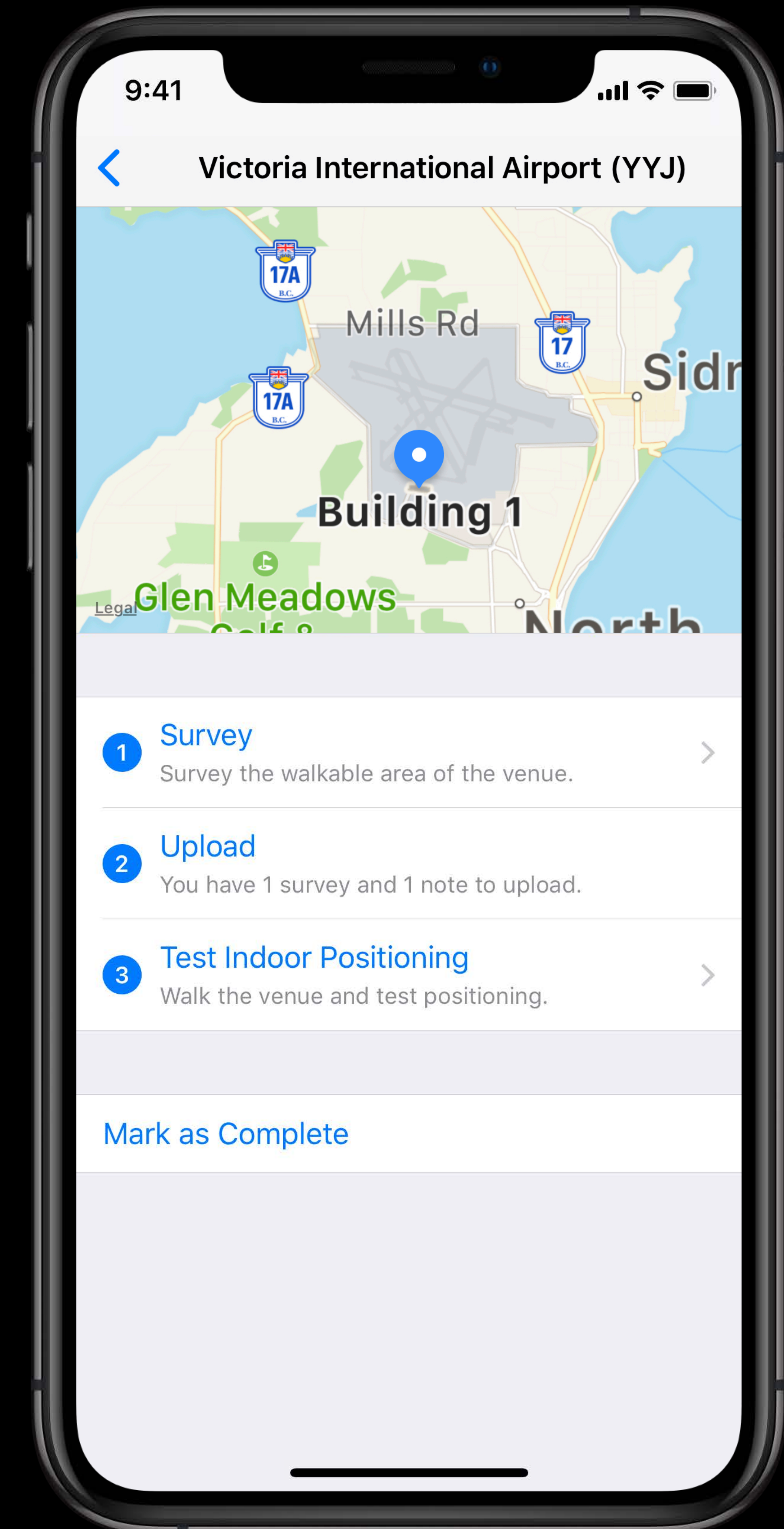


Indoor Survey App



Indoor Survey App

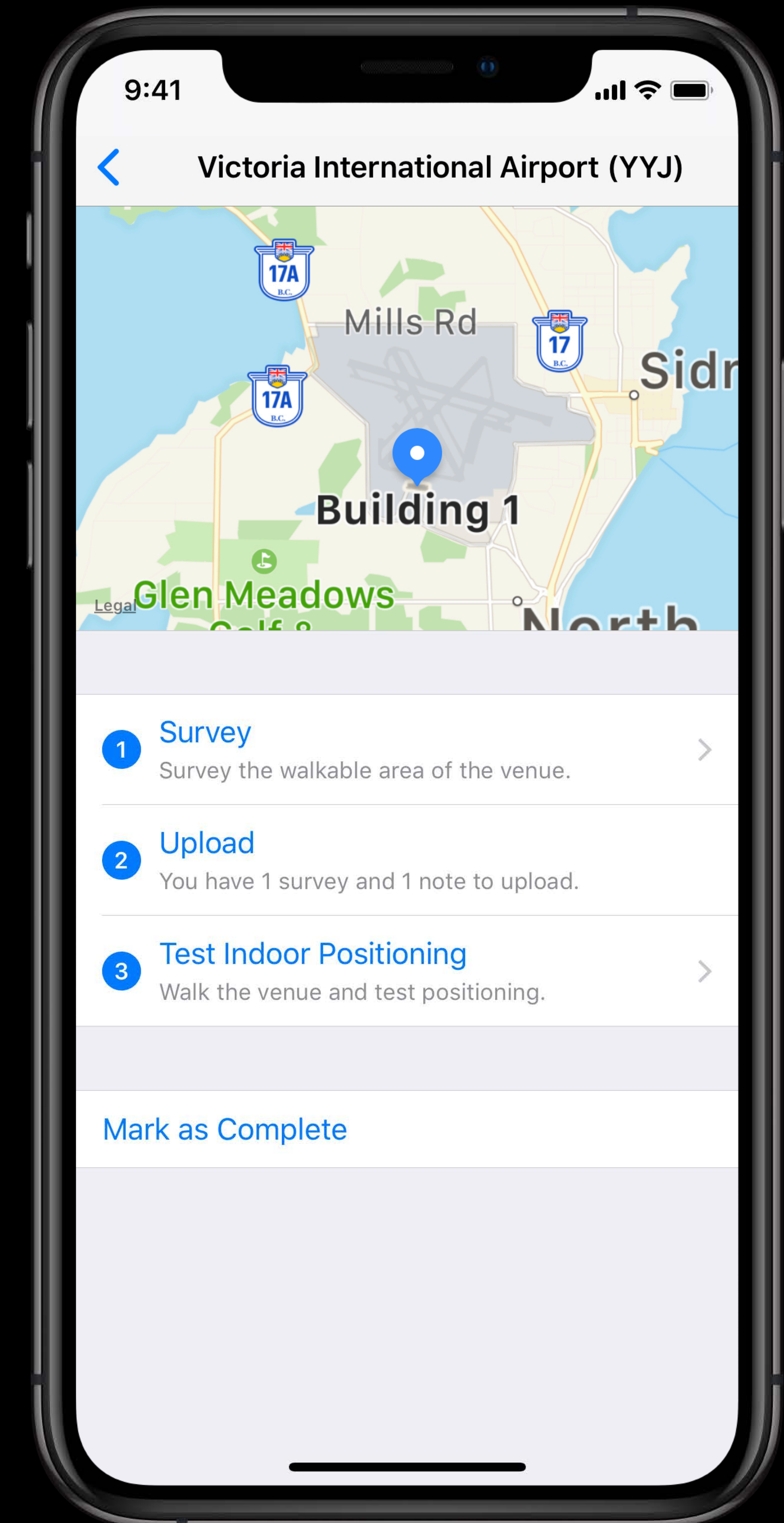
Collect WiFi in your buildings using survey app



Indoor Survey App

Collect WiFi in your buildings using survey app

Upload the surveys for analysis and activation

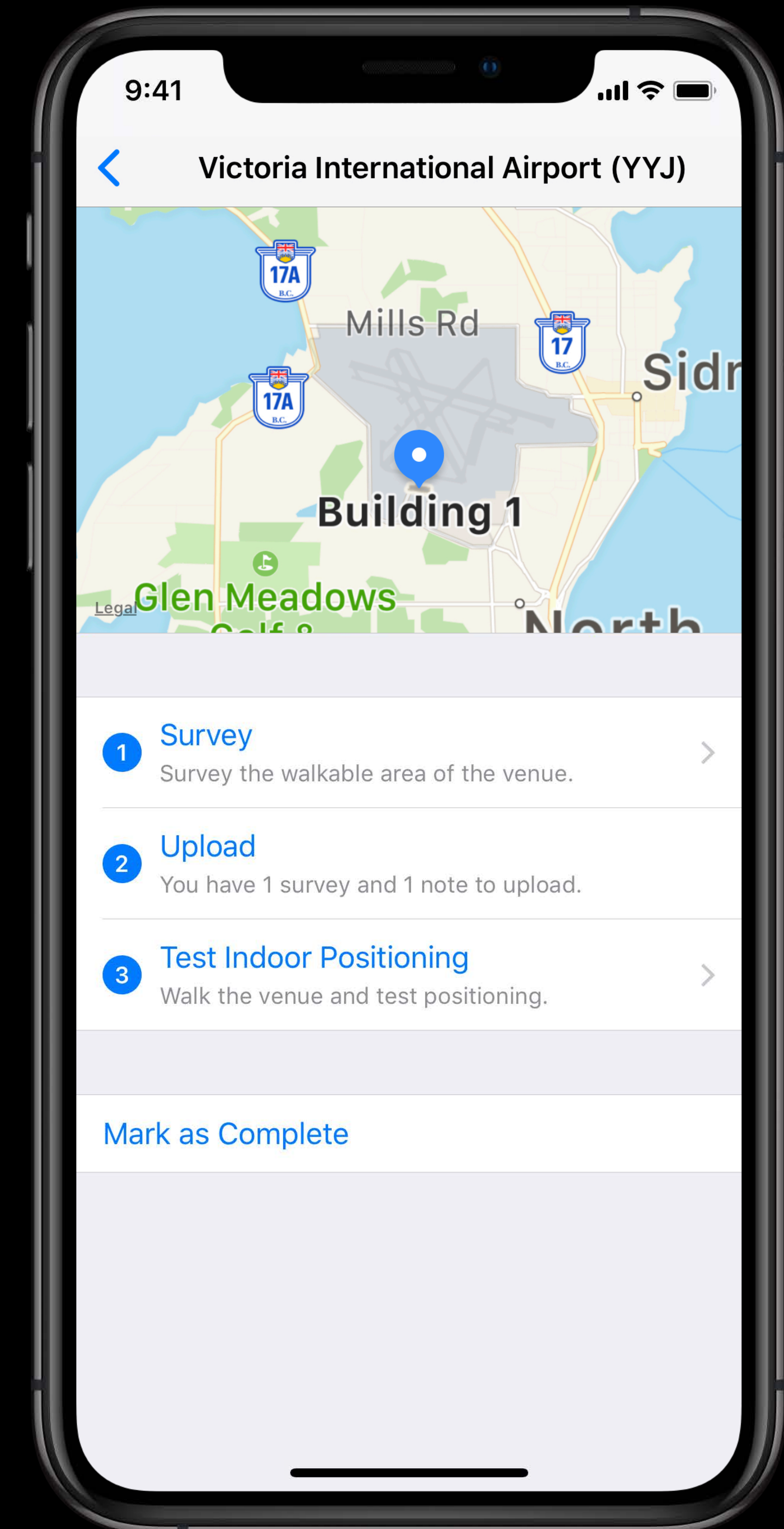


Indoor Survey App

Collect WiFi in your buildings using survey app

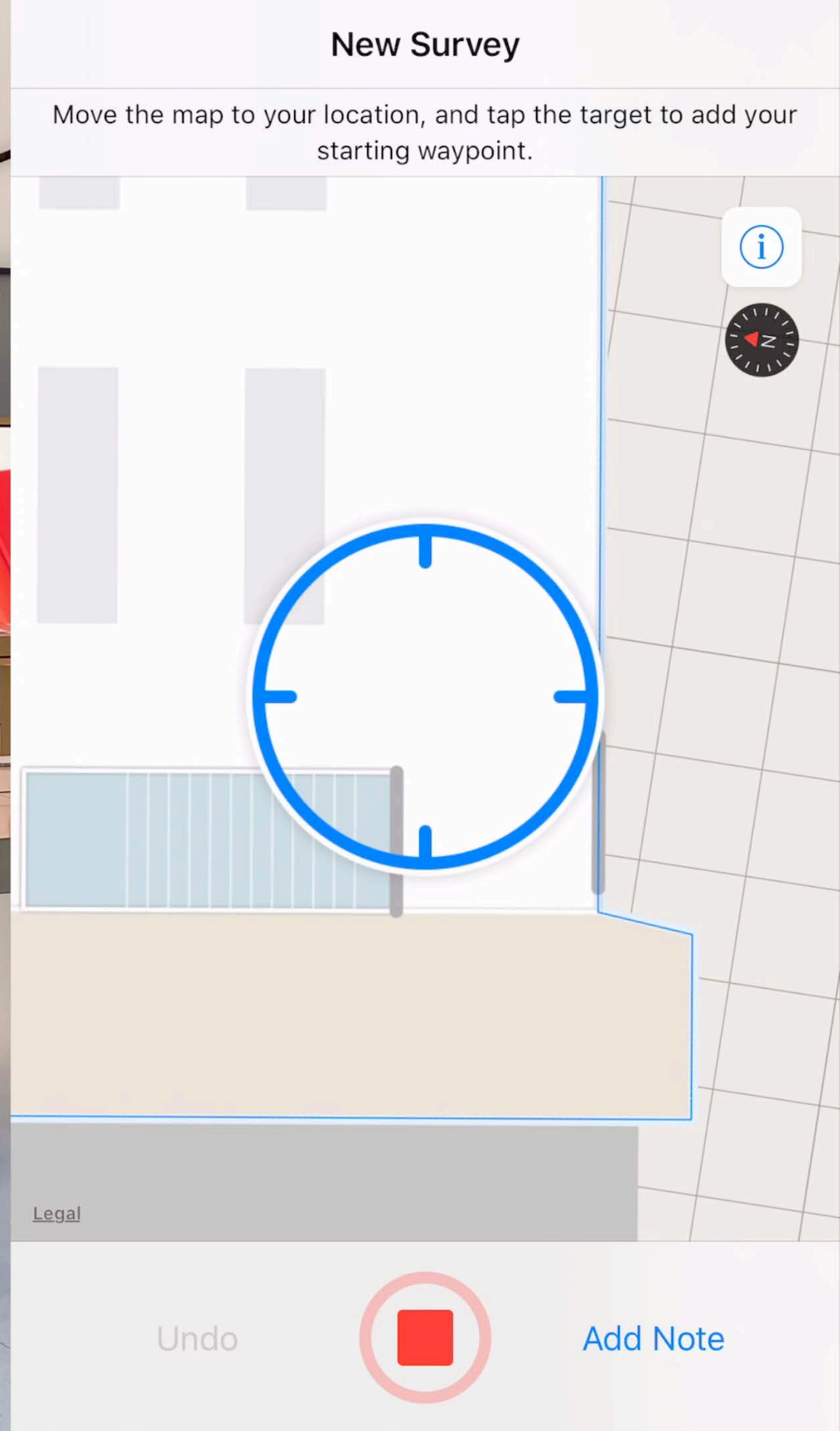
Upload the surveys for analysis and activation

Test indoor positioning for accuracy



Demo

Surveying for Indoor Positioning



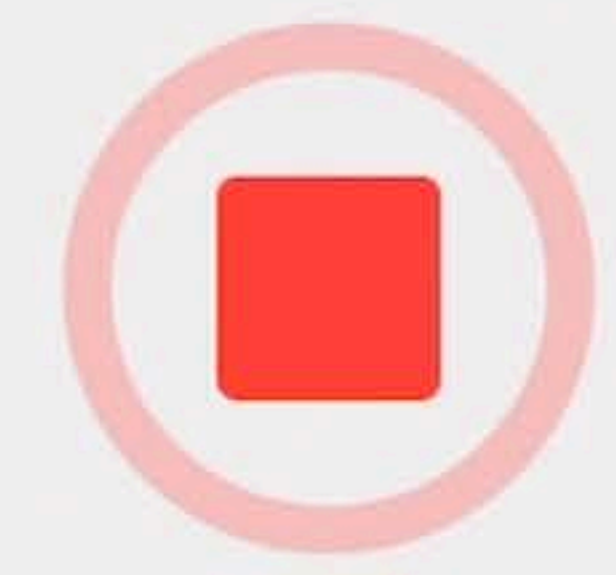
New Survey

Move the map to your location, and tap the target to add your starting waypoint.



Legal

Undo

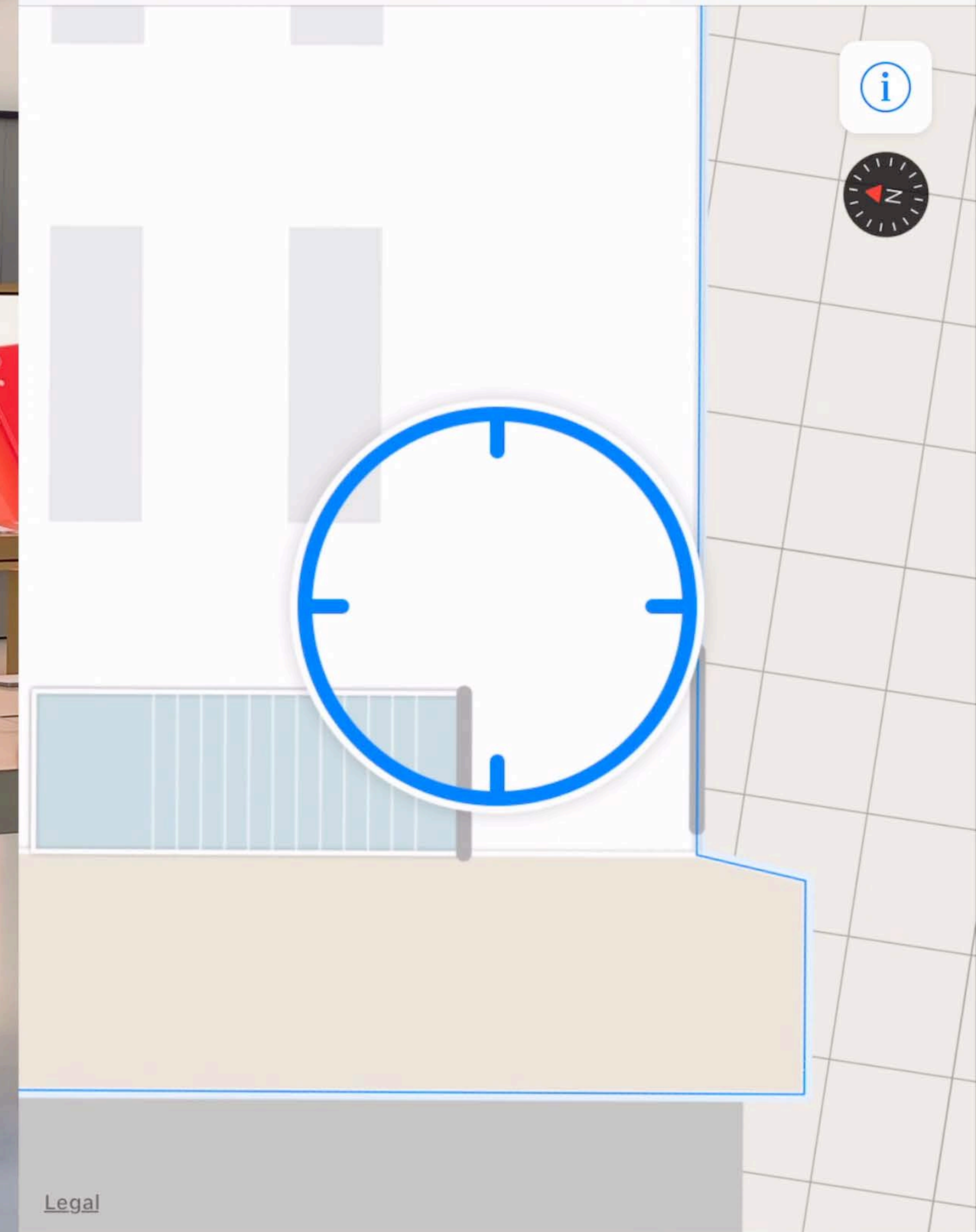


Add Note



New Survey

Move the map to your location, and tap the target to add your starting waypoint.



[Legal](#)

Undo

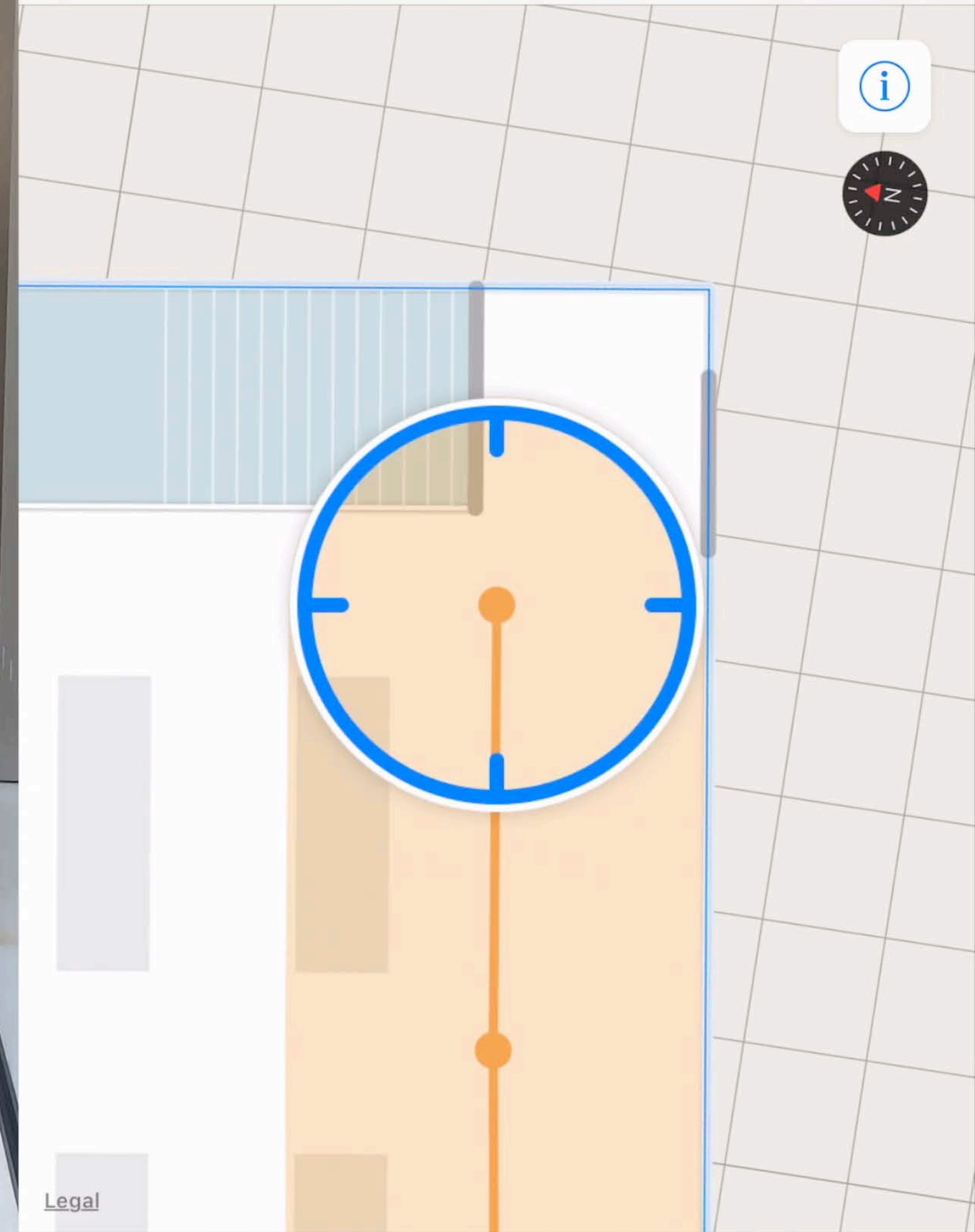


Add Note

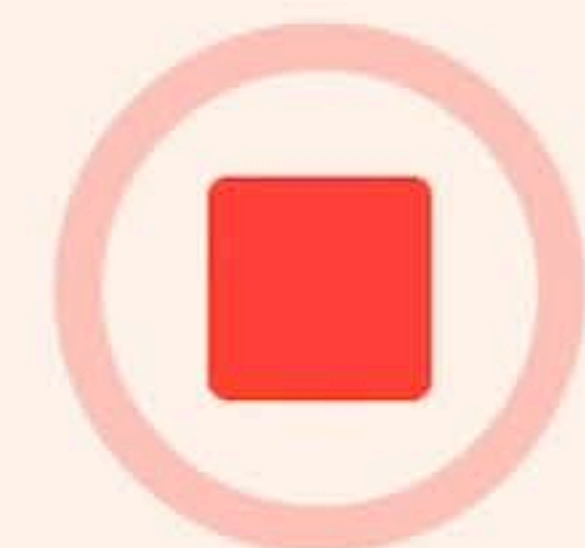


● 0:24

Roughly every 5 meters, move the map to your location, and add a waypoint.



Undo

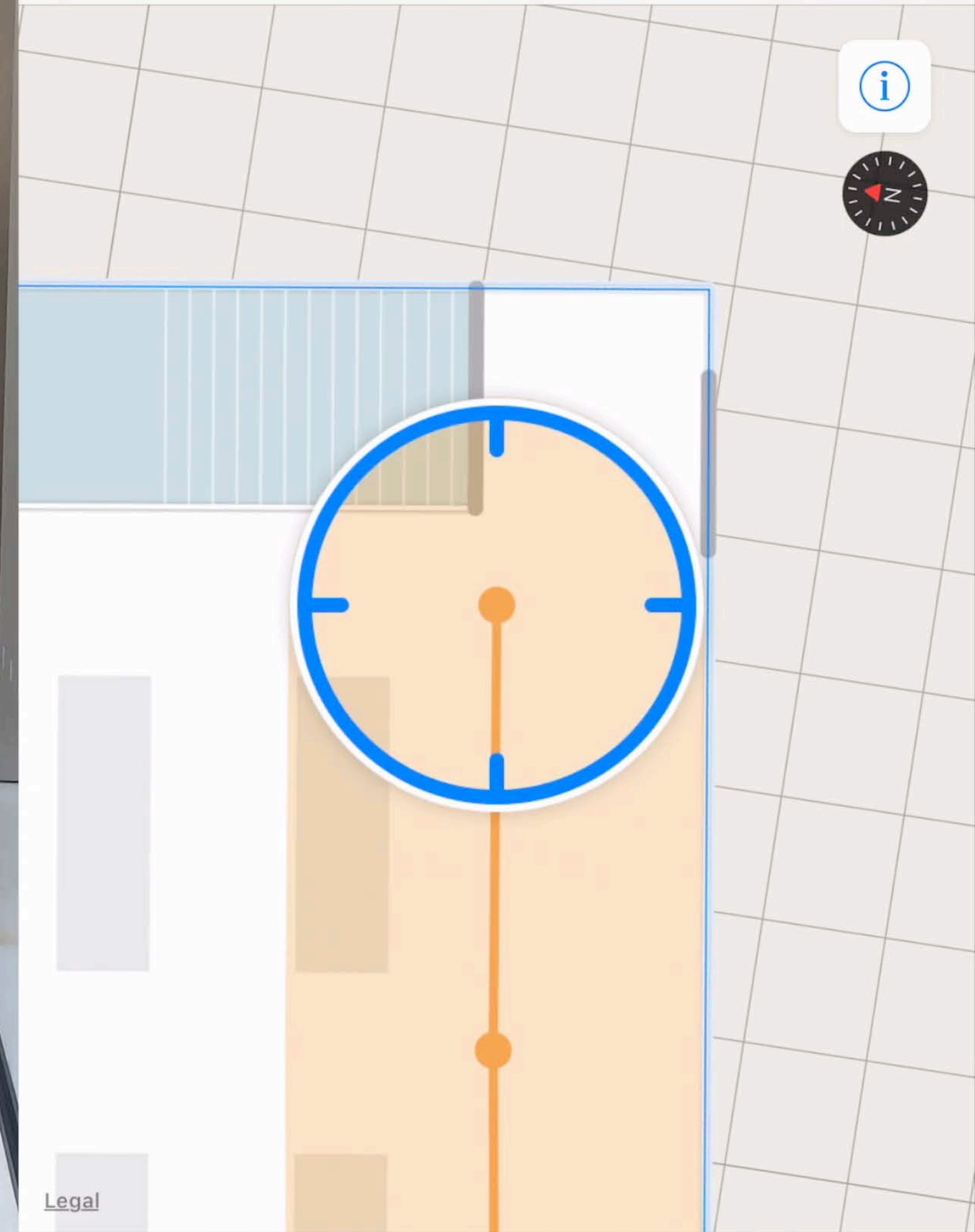


Add Note

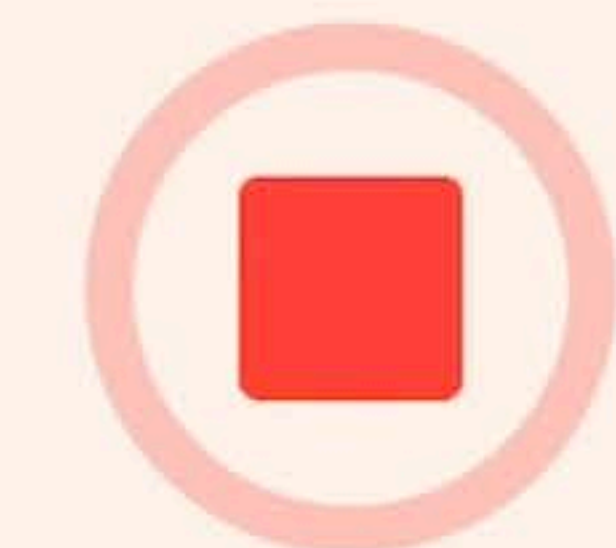


0:24

Roughly every 5 meters, move the map to your location, and add a waypoint.



Undo



Add Note

Demo

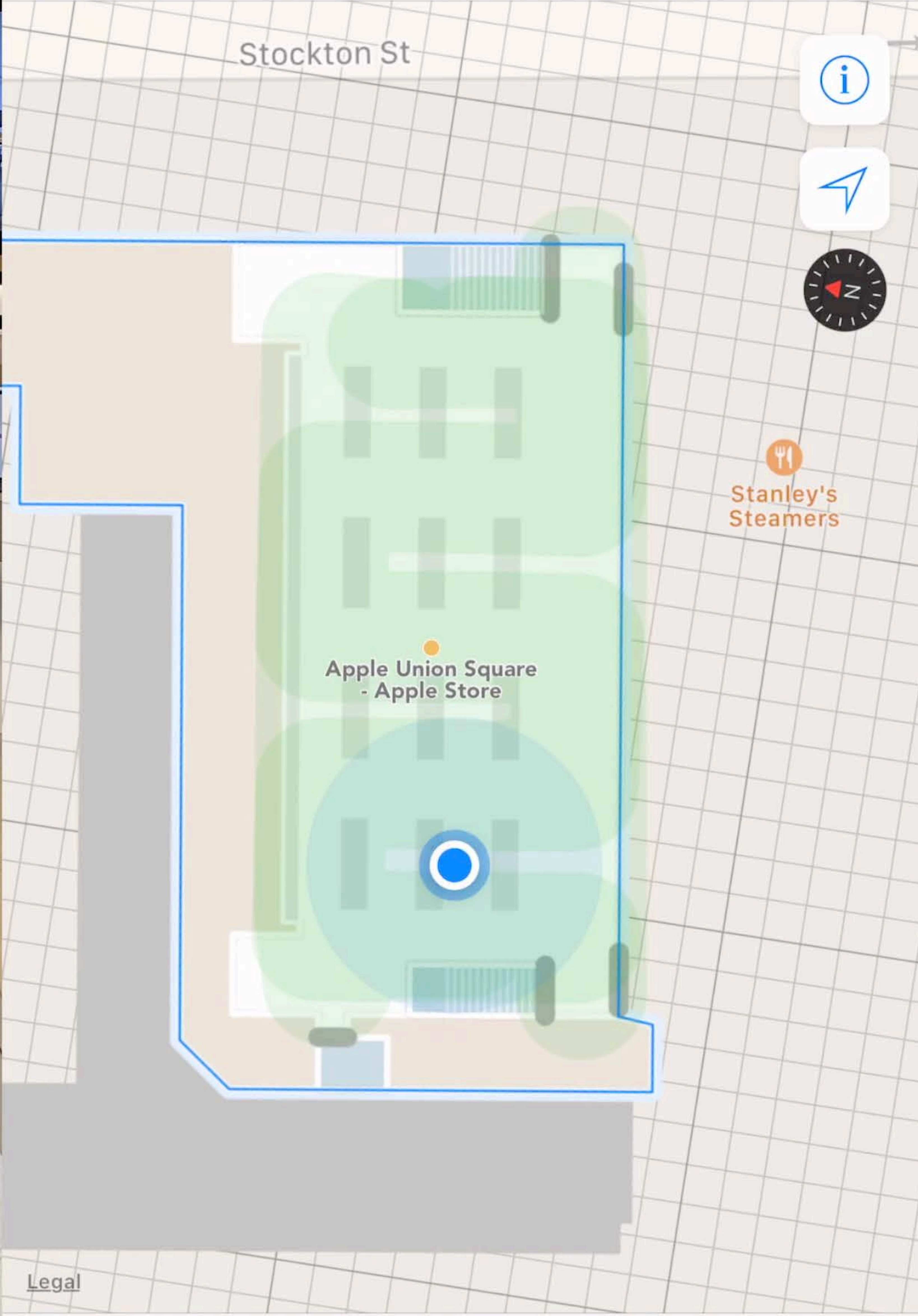
Testing Indoor Positioning



< Venue

Indoor Positioning

Walk the venue and test positioning. If you find an issue, survey the affected area again.



Legal

Location: Apple Store - Union Square,

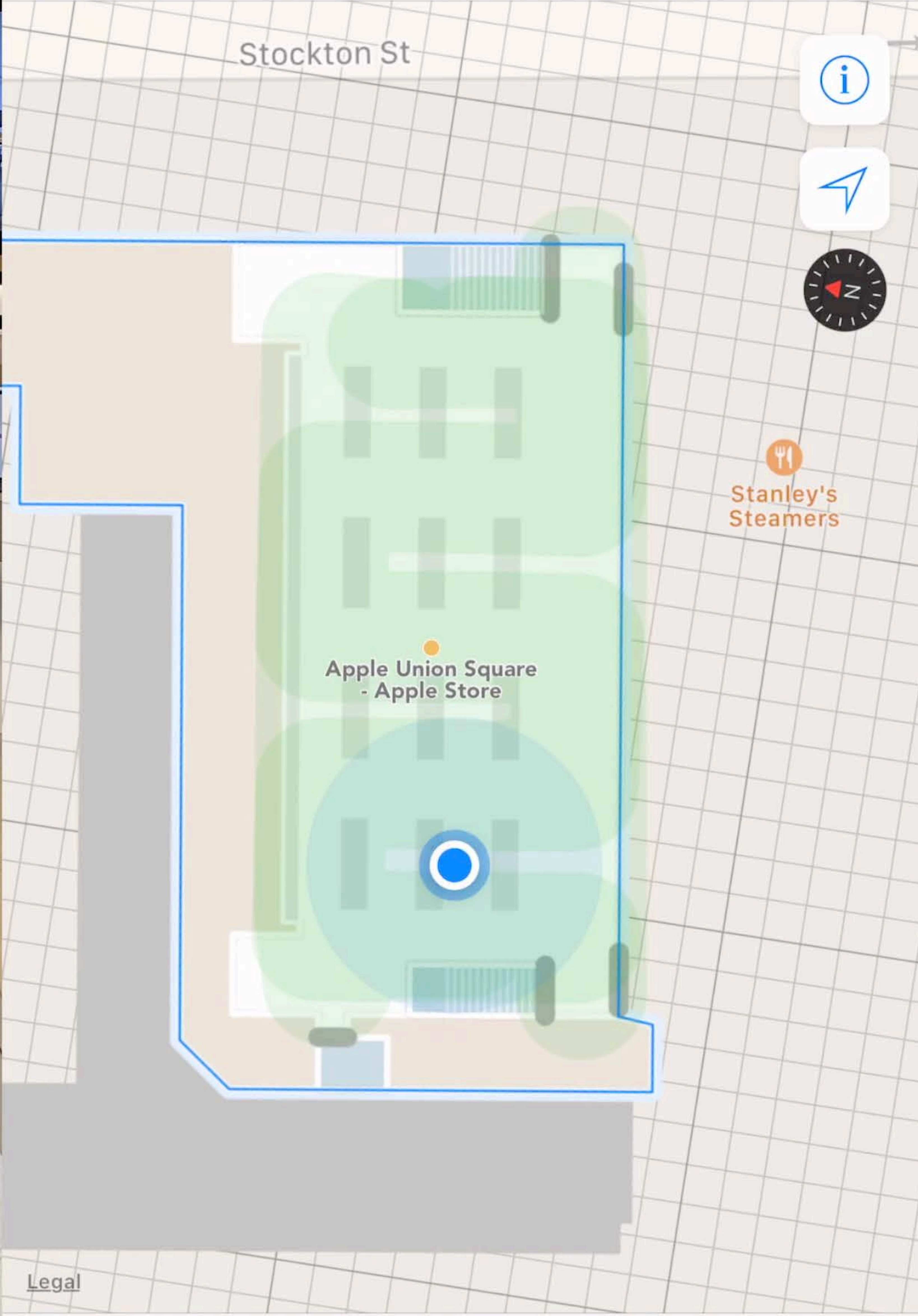
[New Survey](#)



< Venue

Indoor Positioning

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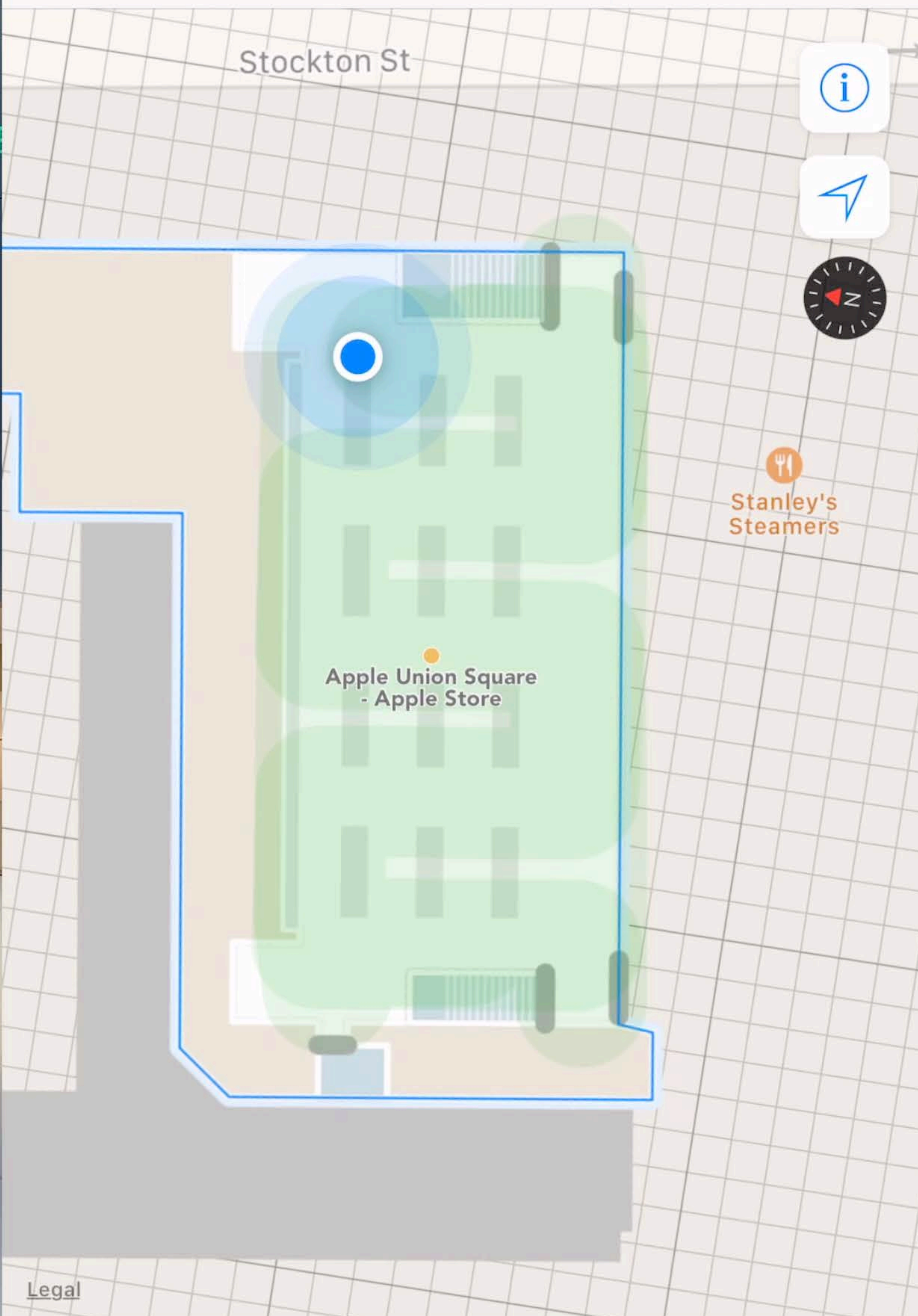
Legal

Location: Apple Store - Union Square,

[New Survey](#)



Walk the venue and test positioning. If you find an issue, survey the affected area again.

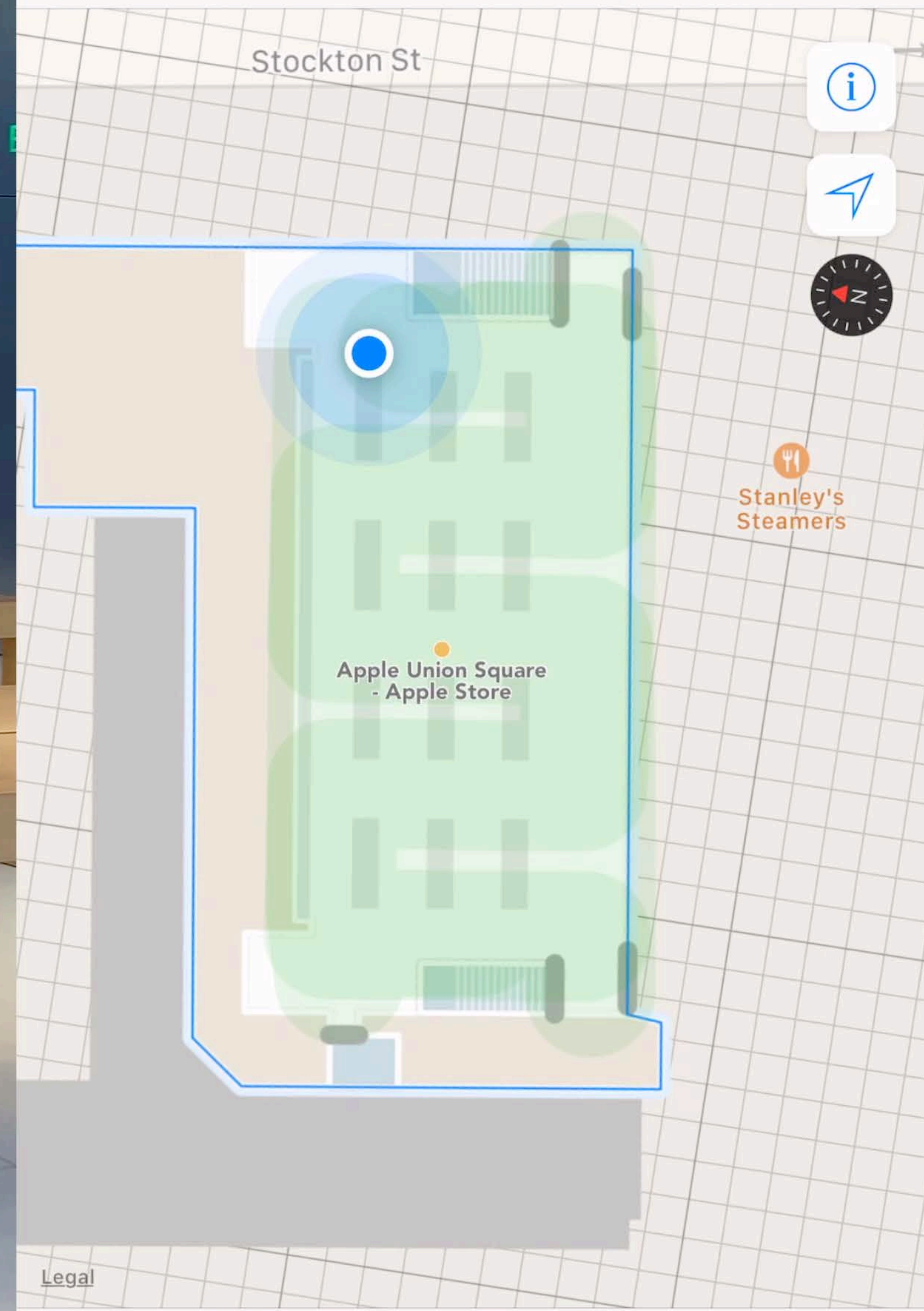




< Venue

Indoor Positioning

Walk the venue and test positioning. If you find an issue, survey the affected area again.



Location: Apple Store - Union Square,

[New Survey](#)

Enable Indoor Positioning

Best practices



Enable Indoor
Positioning

Enable Indoor Positioning

Best practices

WiFi fingerprinting, no impact to network



Enable Indoor
Positioning

Enable Indoor Positioning

Best practices

WiFi fingerprinting, no impact to network

Enabled using IMDF and indoor survey app



Enable Indoor
Positioning

Enable Indoor Positioning

Best practices

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Enabled using IMDF and indoor survey app

Survey is simple to do, but steps are specific



Enable Indoor
Positioning

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Best practices

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Survey is simple to do, but steps are specific

Use the same model of iPhone and iOS



Enable Indoor
Positioning

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Use the same model of iPhone and iOS

Keep in center of walkways and away from walls



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Avoid cases that can attenuate the WiFi signal



Enable Indoor
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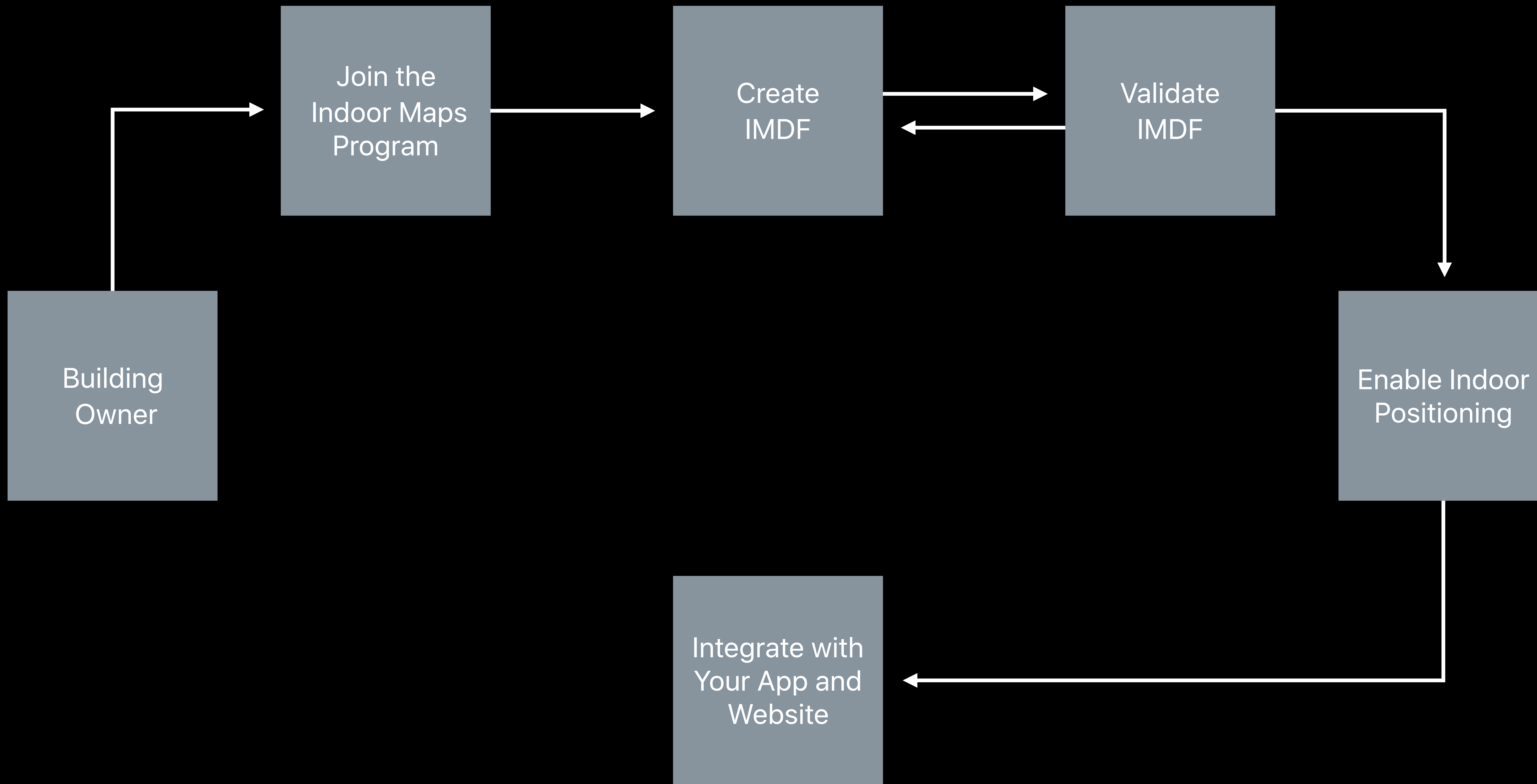
Keep in center of walkways and away from walls

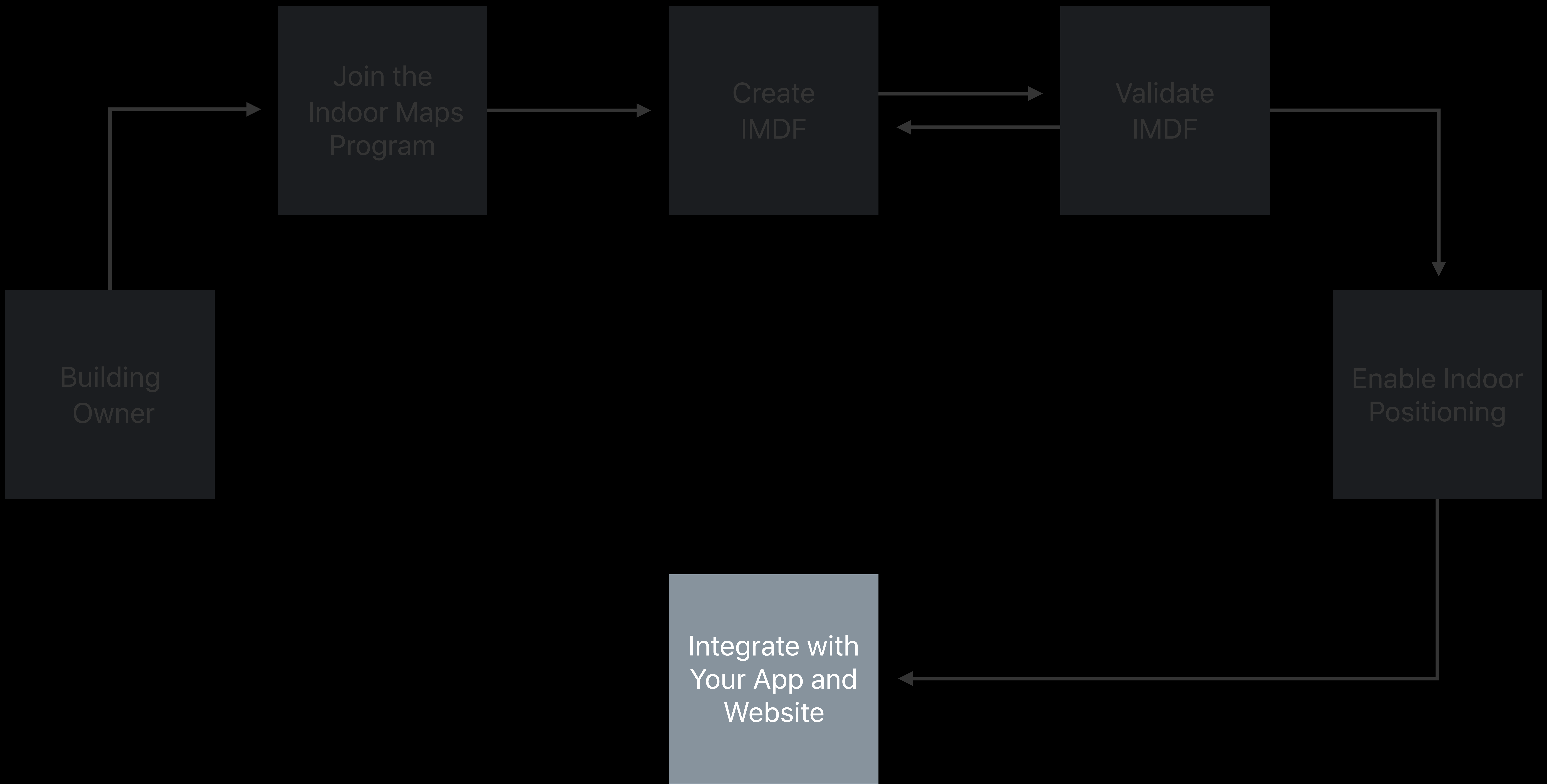
Avoid cases that can attenuate the WiFi signal

Read the help documentation



Enable Indoor
Positioning





Integrate with Your App and Website

Integrate with Your App and Website

MapKit Render GeoJSON as overlays and annotations

Integrate with Your App and Website

MapKit Render GeoJSON as overlays and annotations

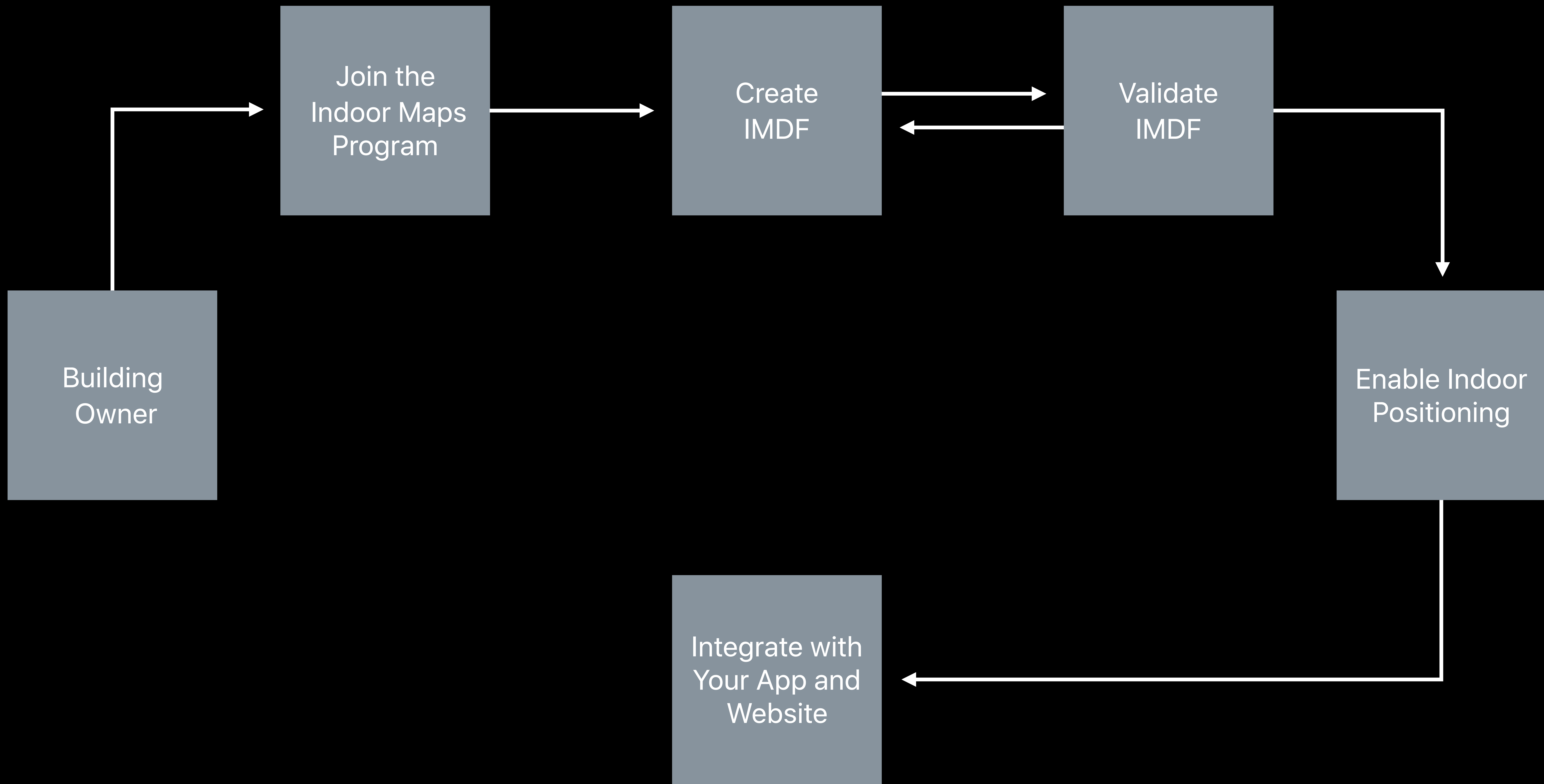
Style your indoor maps elements

Integrate with Your App and Website

MapKit Render GeoJSON as overlays and annotations

Style your indoor maps elements

Display user location indoors



More Information

register.apple.com/indoor

