real time geo APIs

http://jden.us

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things are in the real world

they are located in spaces

they happen at a certain time

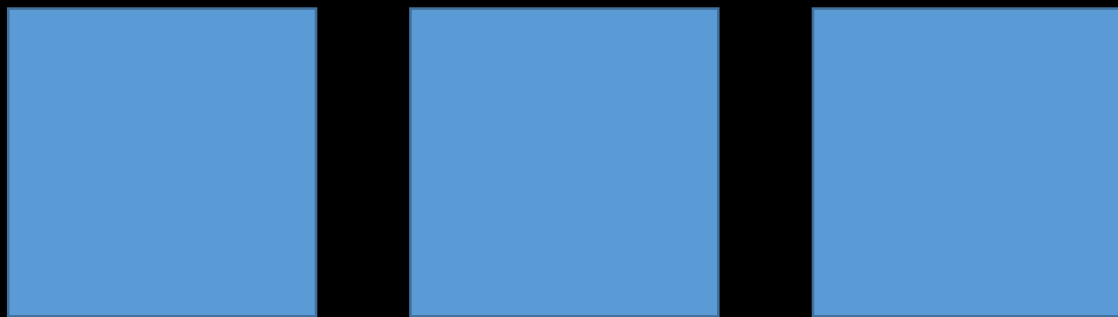right here, right now

API design principles

- use common formats
- simple protocols
- principle of least surprise
- understand patterns of use

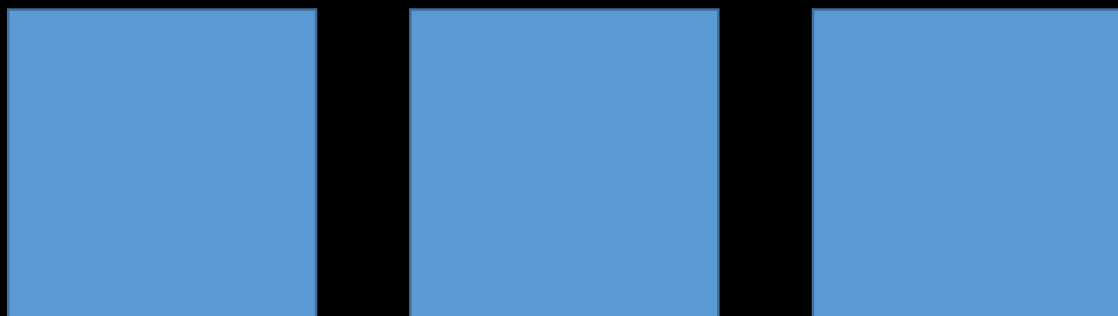# API design principles

- use common formats   GeoJSON
- simple protocols   HTTP, Server Sent Events
- principle of least surprise   "exploit users' pre-existing knowledge" -*Wikipedia*
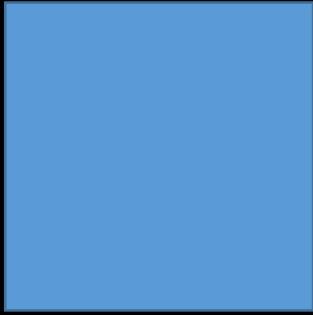- understand patterns of use   General Update Pattern
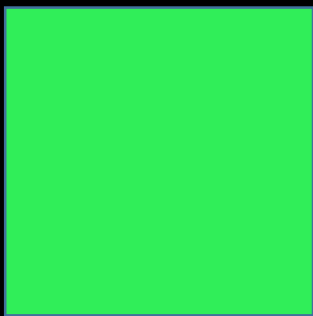
General Update Pattern

General Update Pattern - Enter

General Update Pattern - Exit

General Update Pattern - Change

General Update Pattern

Updating a web map

Events

- zoom
- drag
- click / touch

Events

- vehicle enters service
- vehicle drives around
- passenger embarks / disembarks
- vehicle stops at a red light
- vehicle leaves service

Events

- vehicle enters service
- vehicle drives around
- ~~passenger embarks / disembarks~~
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Events

- Enter
- Change
- ~~passenger embarks / disembarks~~
- ~~vehicle stops at a red light~~
- Exit

EventSource

```
var source = new EventSource('http://api.com')

source.addEventListener('add', onAdd)
source.addEventListener('change', onChange)
source.addEventListener('remove', onRemove)
```

Server-Sent Events

```
event: add
data: {"some": "json"}

event: change
data: {"some": "json"}

event: remove
data: {"some": "json"}
```

Demo

- Let's build a bus map!

Attribution

- Travel designed by Elliot Verhaeren from the Noun Project
- Person designed by Wilson Joseph from the Noun Project
- Bus image public domain from the Noun Project
- Square designed by Archimedes or Pythagoras or someone maybe?

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