

Mixed Reality Service

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www.mixedrealitysystem.org

W3C Workshop on the Web and VR
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(Slack: #mrs)



Pokémon Go delights millions — but demonstrates that we need protocol infrastructure to help AR applications comply with the requirements and capacities of the real world.

Should augmented-reality games like 'Pokémon Go' place limits on the real-world locations they include?



"Pokémon Go" runs on a mobile phone at the former death camp Auschwitz. The Auschwitz-Birkenau State Museum appealed to producers to stop using the site in its game. (EPA/Stanislaw Rozpedzik)

By **Alex Schiffer**

JULY 20, 2016, 5:00 AM

The magic of "Pokémon Go" is in the way it overlays the Pokémon world atop the real world. Step outside and you'll spot cartoonish creatures to capture. Head to a place where people congregate — say a park or a bus stop — and you'll battle other players or encounter the rarest beasts.

There's an immediate need for a protocol that will **let the world speak for itself.**

In Case You Missed It



How a stockpile of America's nuclear weapons got tangled up in a Middle East crisis

3:00 AM



Who is Hillary Clinton's running mate Tim Kaine?

JUL. 22, 2016



Pop star Ana Bárbara the latest to sue Wells Fargo over fake accounts

3:00 AM

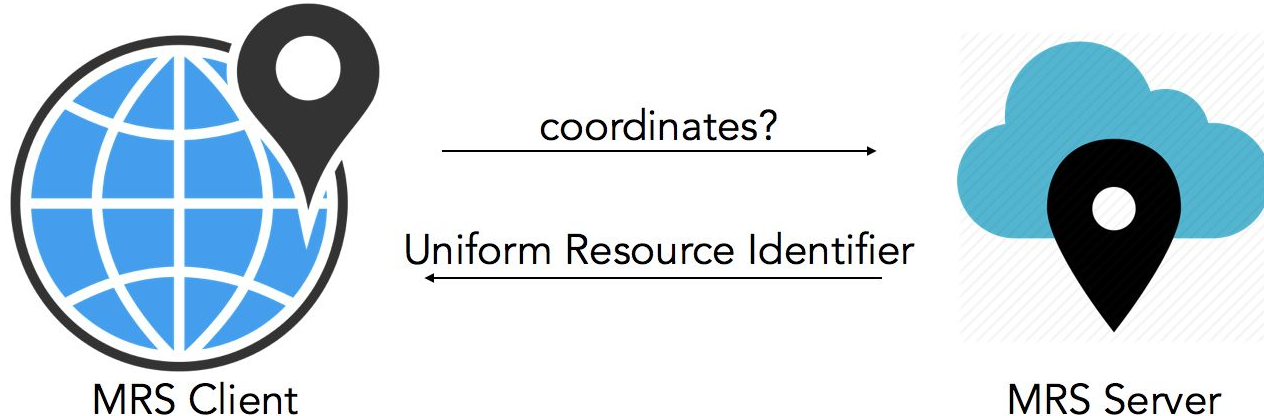
[See More](#)

Mixed Reality Service provides this metadata layer, binding the real and virtual worlds.

DNS translates names into IP addresses.

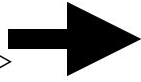


Mixed Reality Service translates coordinates into URIs.

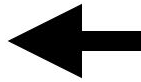


MRS 'add' operation:

```
{ "add": {  
  "lat": <value>,  
  "lon": <value>,  
  "ele": <value>,  
  "range": <value>,  
  "FOAD": <boolean>,  
  "Service_Point": <URI>  
} }
```



MRS Server



```
{ "response": {  
  "added": <boolean>  
} }
```

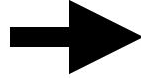


MRS servers publish mappings using Distributed Ledger Technology (DLT), ensuring security and consistency across the Internet.

The MRS 'delete' operation is the logical inverse of 'add'.

MRS 'search' operation:

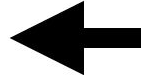
```
{ "search": {  
  "lat": <value>,  
  "lon": <value>,  
  "ele": <value>,  
  "range": <value>  
} }
```



For a given set of coordinates, elevation and range, a list of mappings and associated URIs are returned. A single location can (and likely will) return multiple mappings.



MRS Server



```
{ "response": {  
  "matches": <value>,  
  "matching": [ array of entries... ]  
} }
```

for each 'matching' array entry:

```
{  
  "lat": <value>,  
  "lon": <value>,  
  "ele": <value>,  
  "range": <value>,  
  "FOAD": <boolean>,  
  "Service_Point": <URI>  
}
```

Service Point URIs point to resources as simple as web pages, or as complex as rich metadata sets. **MRSE** defines a metadata taxonomy for mixed reality applications.

Demo time!

Point your mobile browsers at
<https://mixedrealitysystem.org/demo>

With simple modifications,
Mixed Reality Service
provides mapping services
for both mixed reality and
virtual reality.

Mixed reality maps geospatial coords onto URIs.



MRS Client

(lat, long, elevation, range)

Uniform Resource Identifier



MRS Server

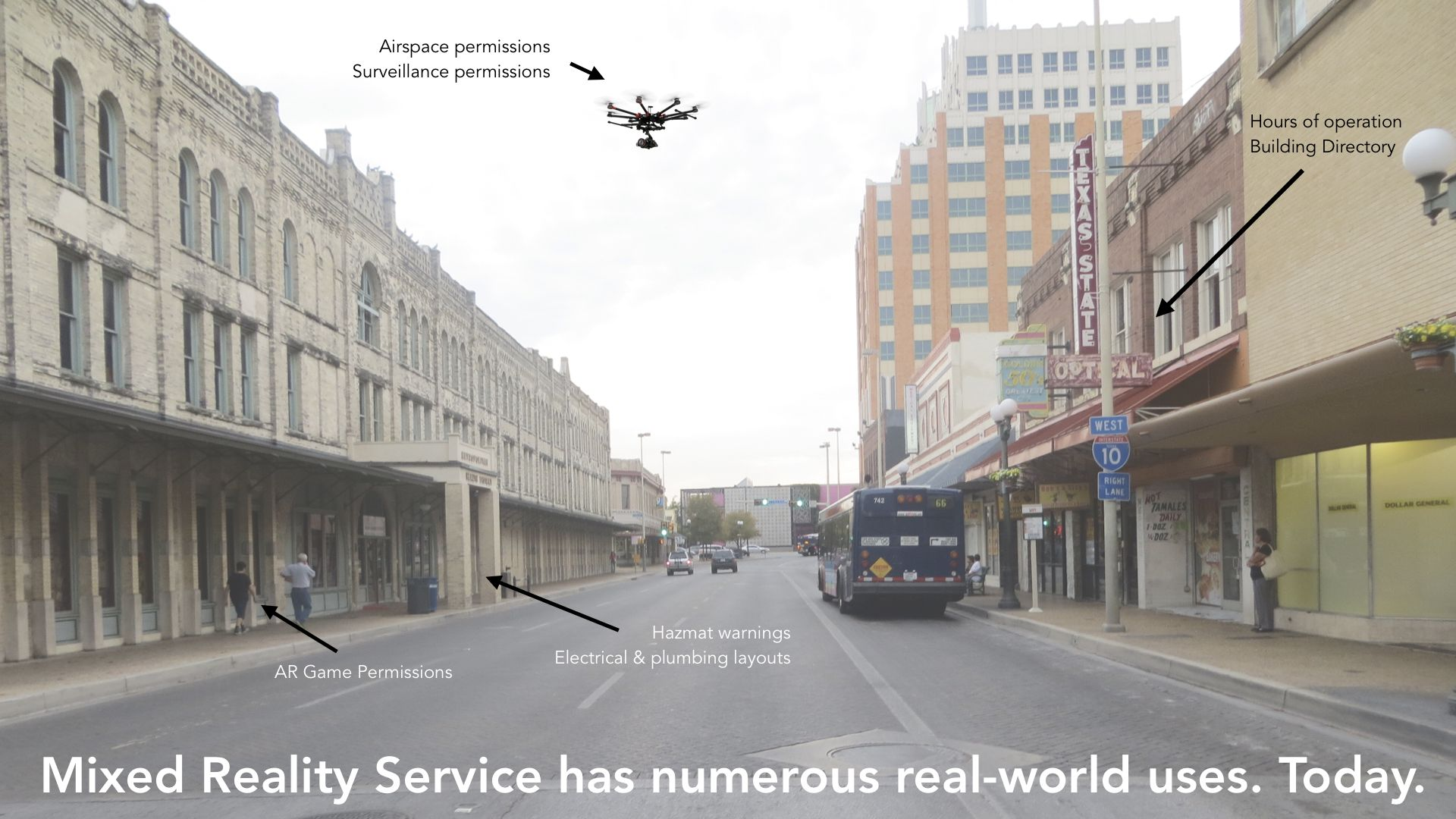
Virtual reality maps 3-space coords onto URIs.



(x, y, z, range)

Uniform Resource Identifier





Airspace permissions
Surveillance permissions

Hours of operation
Building Directory

AR Game Permissions

Hazmat warnings
Electrical & plumbing layouts

Mixed Reality Service has numerous real-world uses. Today.

We need MRS — or something very much like it.

Mixed Reality Service enables
'discovery', allowing us to **detect**,
interrogate and **interact** with the
intersections between the real and
virtual worlds.

Details at www.mixedrealitysystem.org

