Mixed Reality Service

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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?

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

Mixed Reality Service translates coordinates into URIs.

DNS translates names into IP addresses.

Browser

www.elie.net

1.2.3.4

DNS server

MRS Client

coordinates?

Uniform Resource Identifier

MRS Server
MRS ‘add’ operation:

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

```
{  "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:

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

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

For each ‘matching’ array entry:

```json
{  
    "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.

$(\text{lat, long, elevation, range})$

Uniform Resource Identifier

**Virtual reality** maps 3-space coords onto URIs.

$(x, y, z, \text{range})$

Uniform Resource Identifier
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.mixedrealitiesystem.org