GiGa infosystems

# How Data Management and Services help to share 3d Models across Systems

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Why do you model?

How do you model?

## Structural Modelling

## Numerical Modelling

## Mapping

## BIM

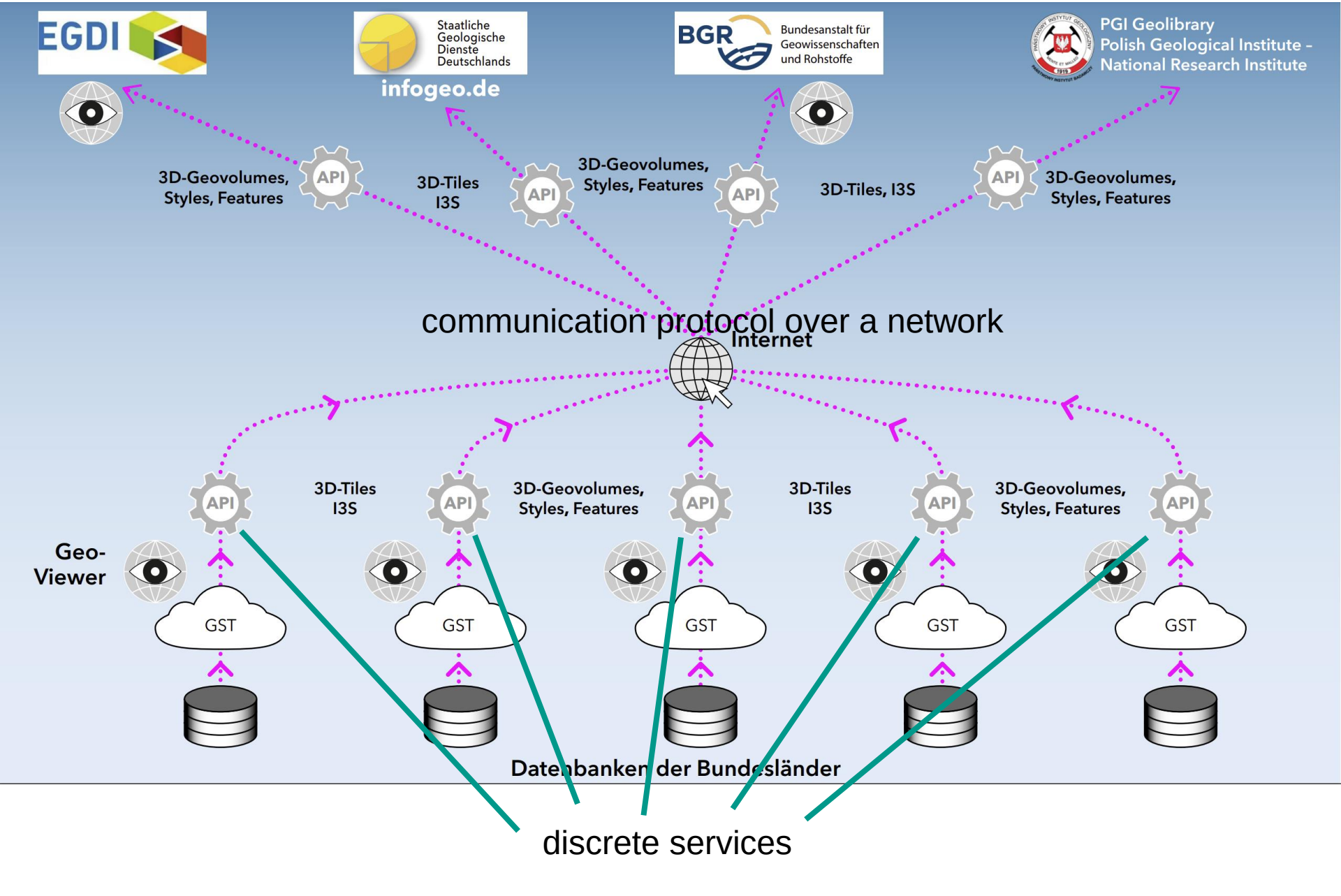
## Visualization

# What is an SOA?
(service-oriented architecture)

In software engineering, service-oriented architecture (SOA) is an architectural style that focuses on discrete services instead of a monolithic design. SOA is a good choice for system integration.

By consequence, it is also applied in the field of software design where services are provided to the other components by application components, through a communication protocol over a network. A service is a discrete unit of functionality that can be accessed remotely and acted upon and updated independently, such as retrieving a credit card statement online. SOA is also intended to be independent of vendors, products and technologies.

https://en.wikipedia.org/wiki/Service-oriented_architecture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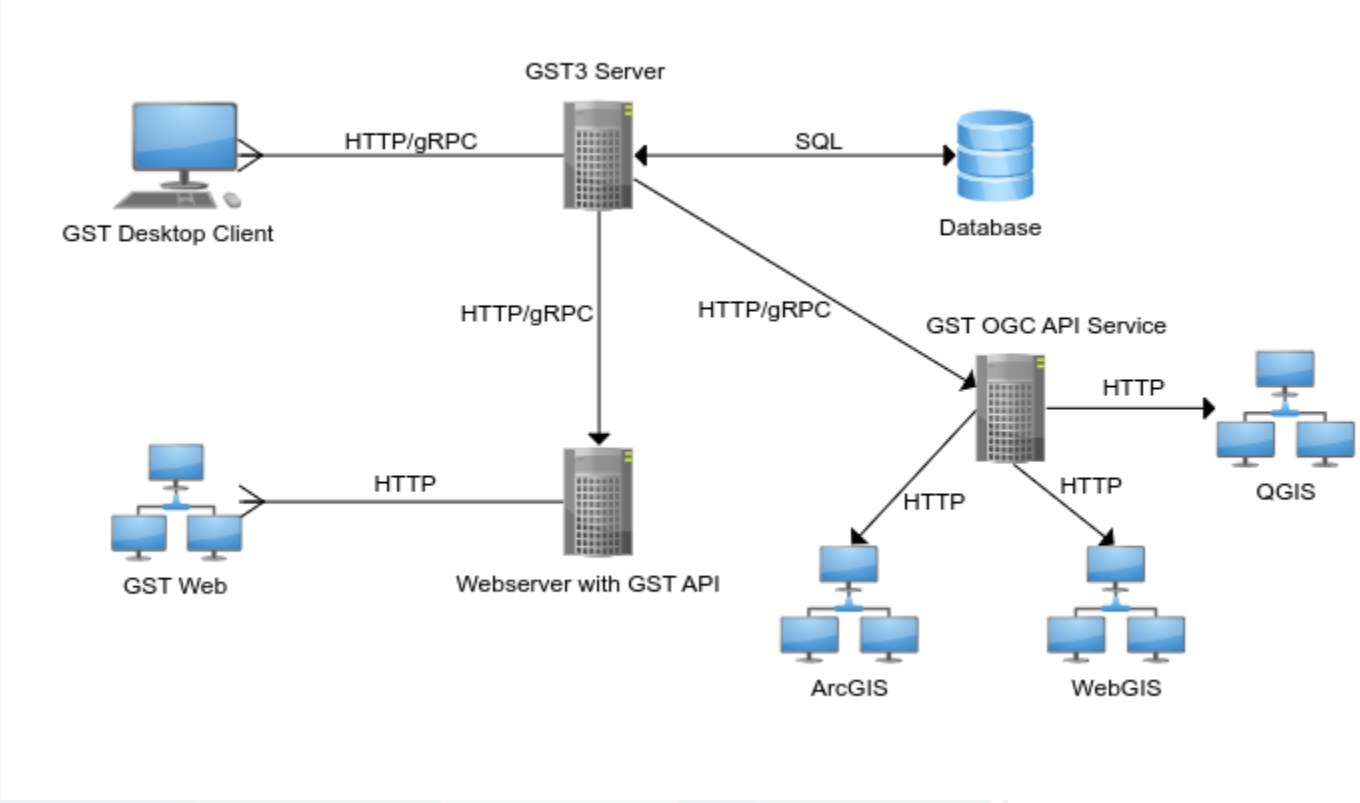
Staatliche Geologische Dienste Deutschlands
infogeo.de
BGR
Bundesanstalt für Geowissenschaften und Rohstoffe
PGI Geolibrary
Polish Geological Institute – National Research Institute
3D-Geovolumes, Styles, Features
API
3D-Tiles I3S
3D-Geovolumes, Styles, Features
API
API
3D-Tiles, I3S
API
3D-Geovolumes, Styles, Features
communication protocol over a network
Internet
API
3D-Tiles I3S
API
3D-Geovolumes, Styles, Features
API
3D-Tiles I3S
API
3D-Geovolumes, Styles, Features
API
Geo-Viewer
GST
GST
GST
GST
GST
Datenbanken der Bundesländer
discrete services

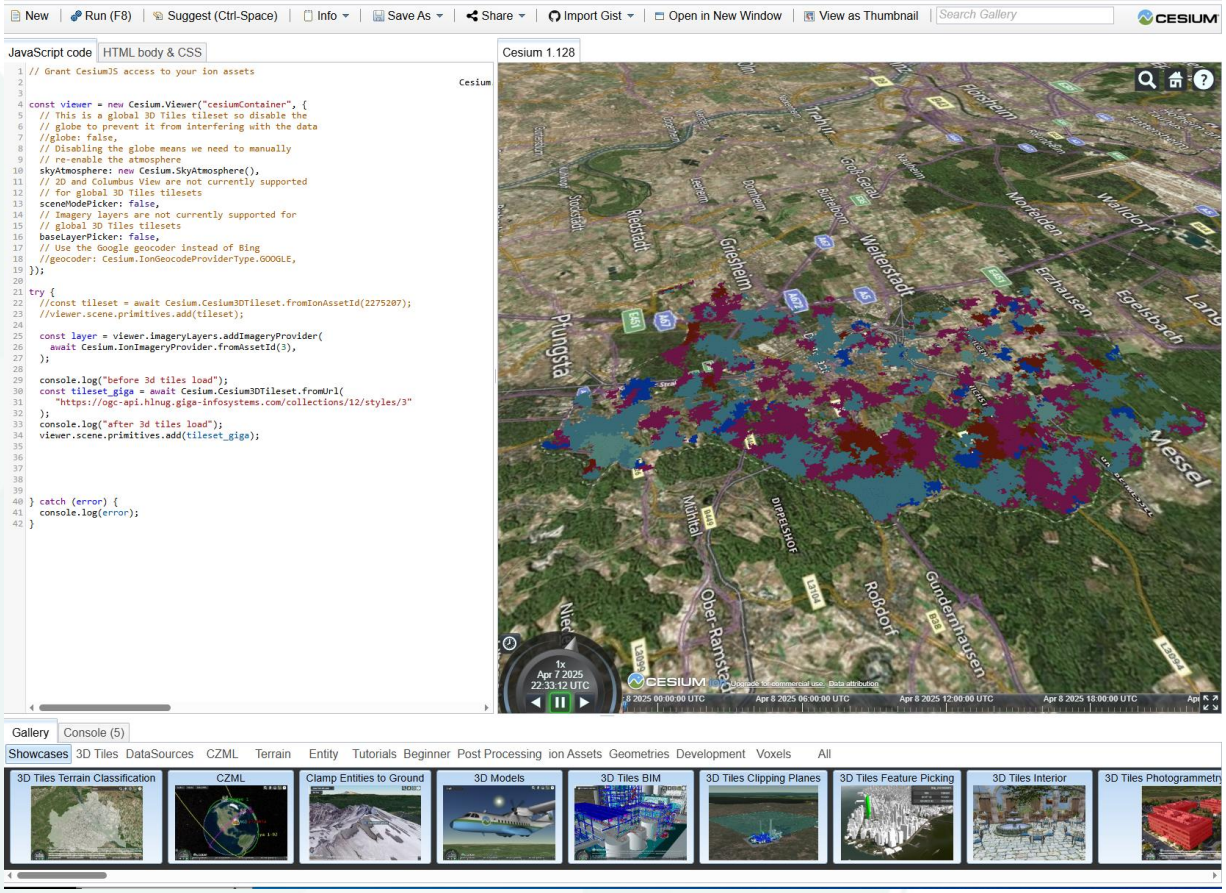
# OGC API

- Multiple Modules
  - Maps (former WM(T)S)
  - Features (former WFS)
  - Styles
  - Volumes
  - Processes (former WPS)

# GST OGC API Volumes



# GST OGC API Volumes



# GST OGC API Volumes

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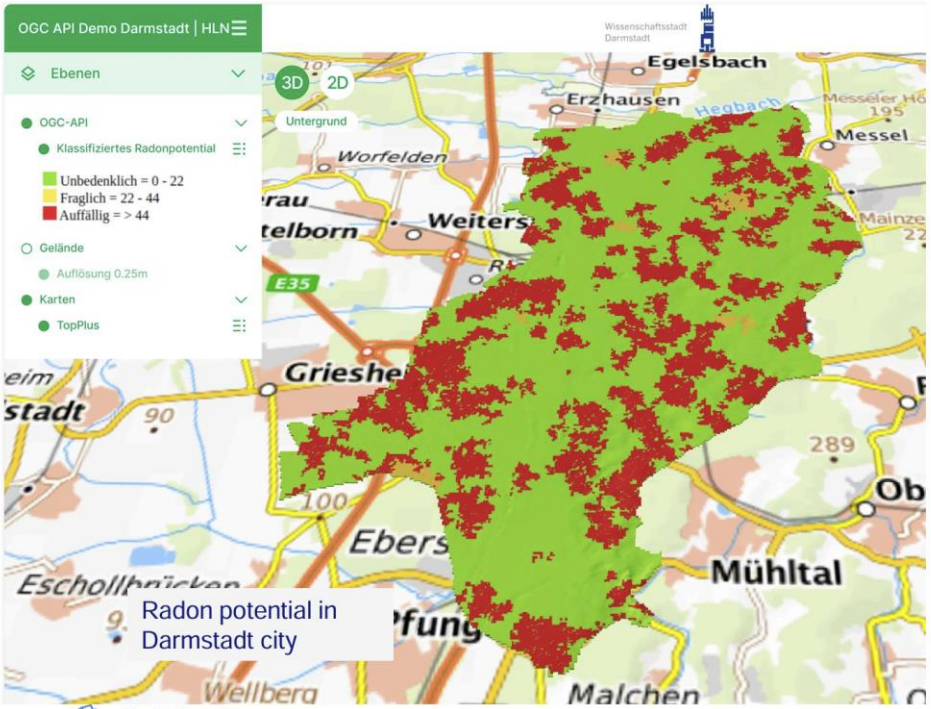
## Interoperable deployment through GST

### OGC-APIs




Hessisches Ministerium für Digitalisierung und Innovation

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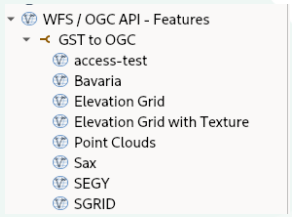
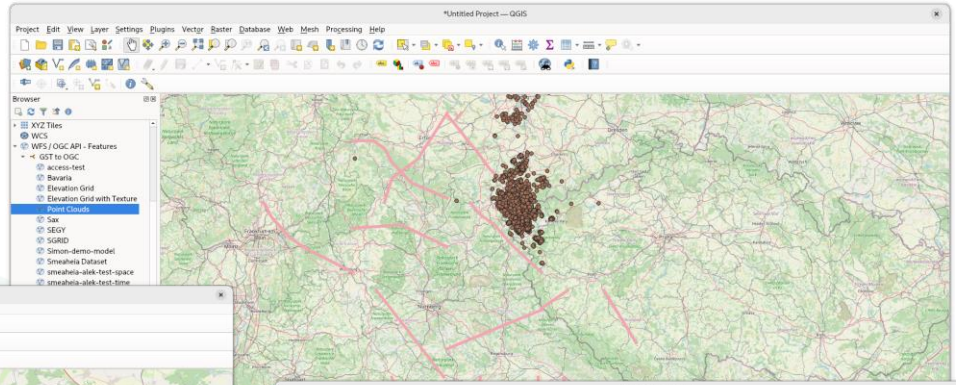
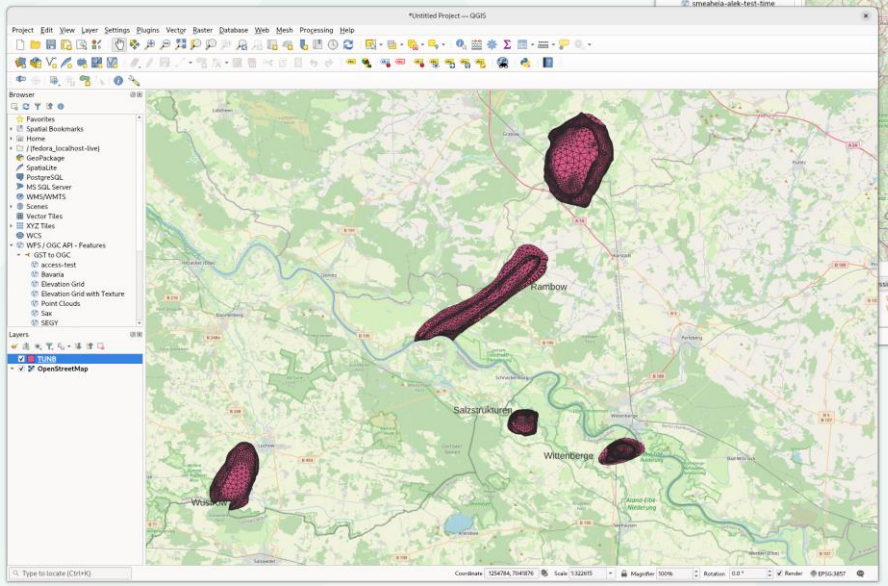
GST AWT 2025 - Rouwen Lehné

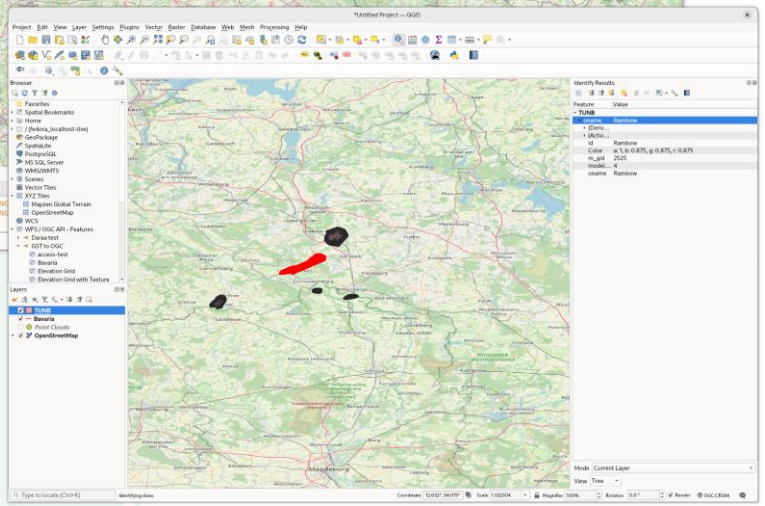
HLNUG Für eine lebenswerte Zukunft

# GST OGC API Features





# Conclusion

- Data in silos is not beneficial, sharing is caring!
- OGC API is certainly one way to go
- New OGC API seems more promising than old W*S
- Successful demo with HLNUG, Darmstadt and Kassel

# Thank you!

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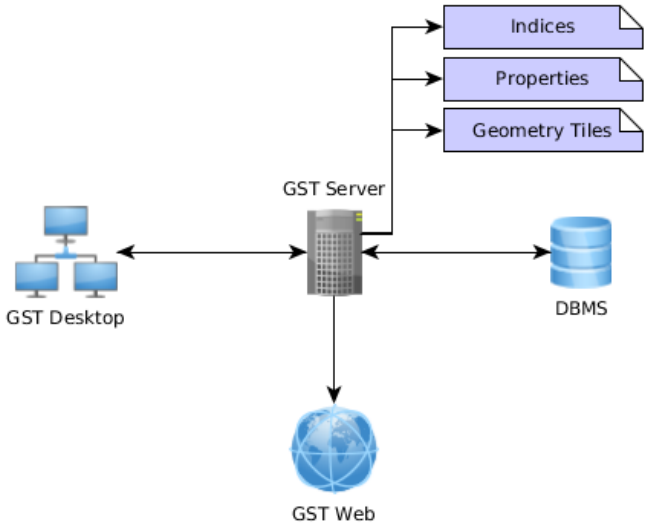
Questions?

Remarks?

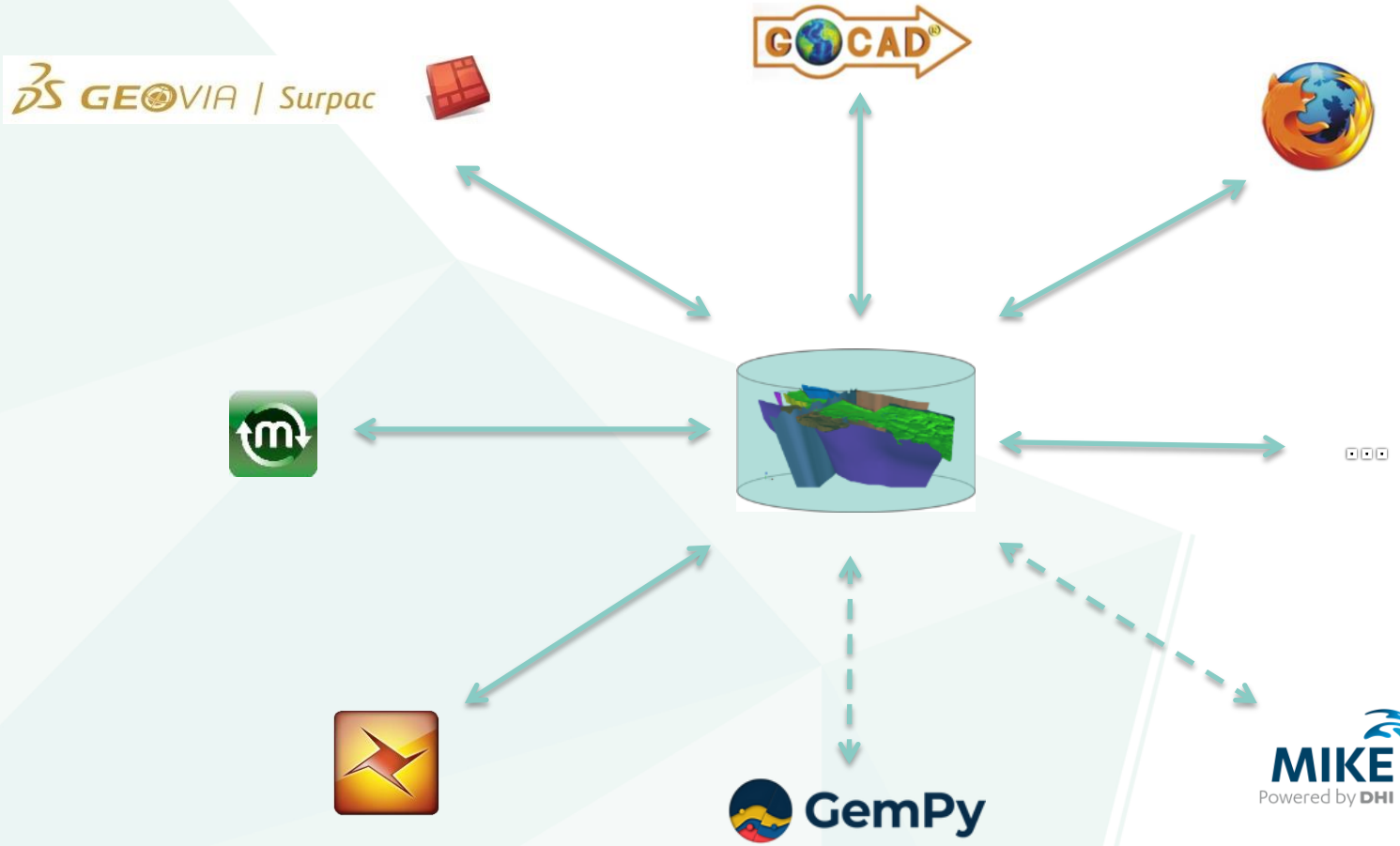
Wishes?

# What's GST?

* 3 tier architecture




* GST API <-> GST Server: GRPC, Port 50051
* Web application
* Several Clients → GST Desktop, GST Py, (C++)


GEOVIA | Surpac
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GemPy
MIKE
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# GST OGC API Volumes

JavaScript code | HTML body & CSS

```
const viewer = new Cesium.Viewer("cesiumContainer", {
  // This is a global 3D Tiles tileset so disable the
  // globe to prevent it from interfering with the data
  //globe: false,
  // Disabling the globe means we need to manually
  // re-enable the atmosphere
  skyAtmosphere: new Cesium.SkyAtmosphere(),
  // 2D and Columbus View are not currently supported
  // for global 3D Tiles tilesets
  sceneModePicker: false,
  // Imagery layers are not currently supported for
  // global 3D Tiles tilesets
  baseLayerPicker: false,
  // Use the Google geocoder instead of Bing
  //geocoder: Cesium.IonGeocodeProviderType.GOOGLE,
});

try {
  //const tileset = await Cesium.Cesium3DTileset.fromIonAssetId(2275207);
  //viewer.scene.primitives.add(tileset);

  const layer = viewer.imageryLayers.addImageryProvider(
    await Cesium.IonImageryProvider.fromAssetId(3),
  );

  console.log("before 3d tiles load");
  const tileset_giga = await Cesium.Cesium3DTileset.fromUrl(
                                    tems.com/collections/762/styles/11"
  );
  console.log("after 3d tiles load");
  viewer.scene.primitives.add(tileset_giga);

} catch (error) {
  console.log(error);
}
```

Cesium 1.127