OGC ISG Year 2 Sprint Kickoff

Presentation: Ecere

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Findable



<u>A</u>ccessible



<u>I</u>nteroperable

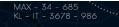


Reusable



Scenario 1A / 1B

- Improve generation of 3D Tiles tilesets of SanDiego CDB from GNOSIS Map Server (e.g. proper multi-resolution levels) http://maps.ecere.com/ogcapi/collections/SanDiegoCDB:Buildings/3DTiles/tileset.json
- Improve visualizing and serving directly from prototyped CDB X GeoPackage data store (flexible tile pyramid groupings) https://portal.ogc.org/index.php?m=projects&a=view&project_id=466&tab=2&artifact_id=95315
- Develop the GeoPackage 3D Models Extension https://github.com/ecere/geopackage/tree/master/spec/3d-models
- Develop specifications to retrieve 3D data from OGC API Tiles
- Support TIEs with our GNOSIS Map Server





- Improve GNOSIS 3D Tiles client (interoperability, point clouds)
- Improve support for VR & AR in our GNOSIS engine (HoloLens 2, Oculus Rift, MagicLeap) – test with CDB X data
 - Possibly test with high-resolution data originating from e.g.
 IndoorGML converted to CDB X geopackages (scenario 2)
- Improve E3D specification for 3D models encoding & setup dedicated repository for it – latest embedded in: https://docs.ogc.org/per/18-025.html#E3DSpecs



Opportunities for Technology Integration Experiments

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- Testing prototyped CDB X GeoPackage data store in other clients / viewers; Generating in other producers
 - Single GeoPackage for whole CDB (~10 gb) (JSON packages description)
 - Multiple tiles grouped by few LoDs in multiple GeoPackages tile pyramids (~10 gb)
 (JSON packages description) (Small subset: 217 mb)
 - Variations: <u>batched</u> vs. referenced 3D models; gITF vs. <u>E3D</u>; <u>GMT</u> vs. MVT/<u>TIF</u>; different tile <u>LoD groupings</u>
- Testing OGC API GeoVolumes / 3D Tiles from GNOSIS Map Server in other clients / viewers
 - https://maps.ecere.com/ogcapi/collections/SanDiegoCDB
- Testing OGC API Tiles approach to accessing 3D data in other clients & from other server implementations
 - Fixed ("implicit") tiling scheme / TileMatrixSet tiles can also be used as content of 3D Tiles tileset
 - Geo-referencing points (vector tiles): .../{collectionId}/tiles/{tmsId}/{level}/{row}/{col}.geojson, .mvt
 - Batched 3D models: .../{collectionId}/tiles/{tmsId}/{level}/{row}/{col}.glb, .e3d, .b3dm

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- Models: .../{collectionId}/models/{modelId} (e.g. glTF, OpenFlight, E3D)
- Textures: .../{collectionId}/textures/{textureId} (e.g. JPG, PNG)



- https://ecere.ca
- https://maps.ecere.com/ogcapi (OGC API GeoVolumes server)
 (SanDiegoCDB / SanDiegoCDBX / SanDiegoCDBLayers collections)
- https://portal.ogc.org/modules/files/details.php?m=files&artifact_id=95315
 (CDB X prototypes of San Diego CDB, including 3D Models)
- https://github.com/ecere/geopackage/tree/master/spec/3d-models (GeoPackage 3D Models extension)
- E3D 3D model format https://docs.ogc.org/per/18-025.html#E3DSpecs
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