OGC ISG Year 2 Sprint Kickoff

Presentation: Ecere

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The world's leading and comprehensive community of experts making location information:

- **F**indable
- **A**ccessible
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- **R**eusable

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Main Objectives for the sprint

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

Stretch Goals

- 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

- 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: batched vs. referenced 3D models; glTF vs. E3D; GMT vs. MVT/TIF; different tile LoD groupings
- 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
  - Models: .../{collectionId}/models/{modelId} (e.g. glTF, OpenFlight, E3D)
  - Textures: .../{collectionId}/textures/{textureId} (e.g. JPG, PNG)

Thank you!

- 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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