V3ct3D

Structuring project

École nationale des sciences géographiques

09 december 2016

Brainware

FIGURE – img

Personal report

- Scrum master and part of a big team
- Tools
- 3D world
- Advanced thinking

BD UNI & BD TOPO

BD uni

- ▶ Is a database of vector data for the whole of France containing all the themes that constitute the commercial products of the IGN.
- ▶ Its regroup 10 domains : The road network, The building, the vegetation etc...
- ▶ The vector component of the RGE

BD TOPO

- ▶ Is the topographic component of the RGE

iTowns

- ▶ IGN technology platform : viewing and exploiting 3D geographic data
- ▶ Writen in Javascript/WebGl
- ▶ Collective intelligence : Several companies are participating in the project :
  - ▶ IGN
  - ▶ Oslandia
  - ▶ AtolCD
- ▶ Github : https ://github.com/iTowns/itowns
- ▶ Supported data types :
  - ▶ Panoramic images
  - ▶ Point Clouds
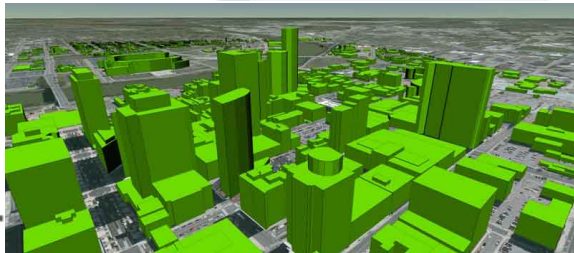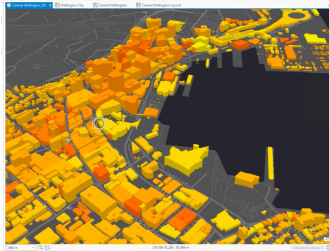 - ▶ 3D textured models
  - ▶ WFS Vector

Personnal report

This project allowed me to :

- Discover iTowns ;
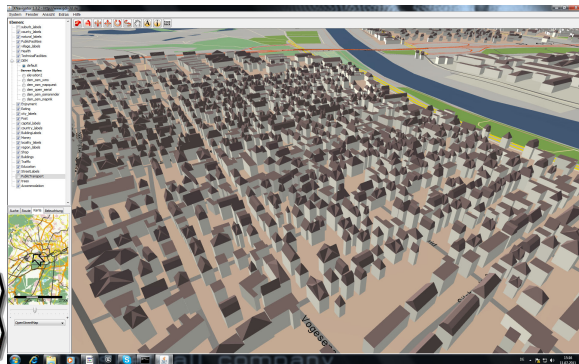- Discover cesium ;
- And be able to write in Markdown.

Different kind of data to do 3D

Different kind of data to do 3D (2)

Personal report - Victor BRINON

Computer skills

- Markdown
- Github
- Taiga
- Slack

Social skills

- Work in a big group
- Communication
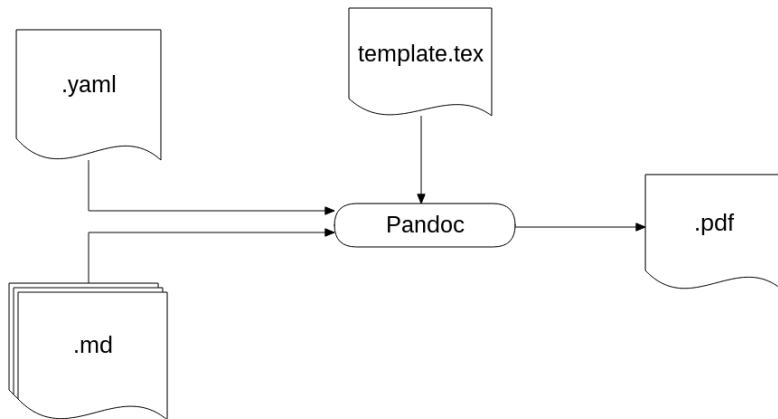- Relationships
- Daily meeting

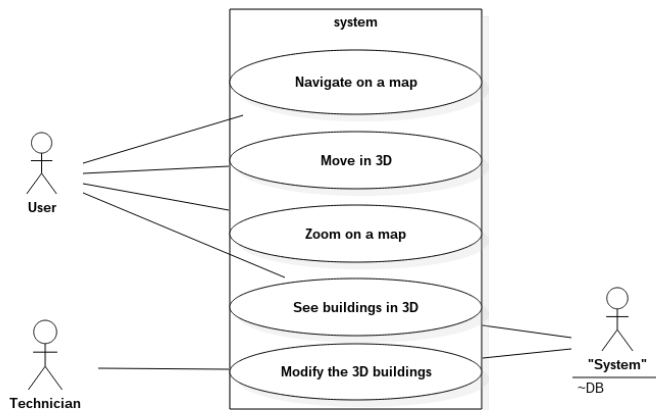# Processing chain md => pdf

Use case diagramm

FIGURE – Use case diagram

Personal report - Hugo BALTZ

Computer skills

- ▶ Pandoc
- ▶ Markdown
- ▶ UML diagrams
- ▶ 3D-Viewer

Social skills

- ▶ Organization
- ▶ Relationships
- ▶ Communication
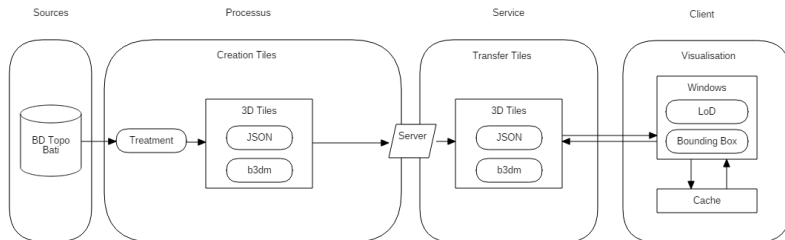- ▶ Efficiency

Production chain : global

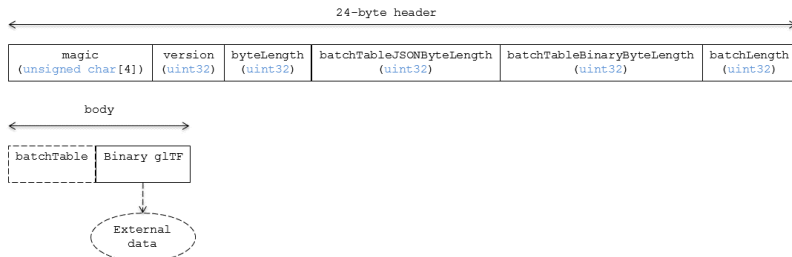FIGURE – Production chain

Personal report - Julie MARCUZZI

- ▶ Learn Markdown methods
- ▶ UML diagrams
- ▶ Communication
- ▶ Discover Cesium, file format & library

b3dm *Batched 3D Model*

OGC is considering a proposed work item for 3D Tiles as a Community

The Batched 3D Models is an initial tile format proposed by **Open Geospatial Consortium (OGC®)** for **buildings**, terrain, massive models, etc. and the transfer of **3DTiles**.
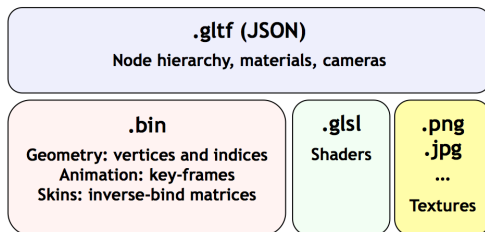
A tile is composed of two sections : a **header** immediately followed by a **body**, i.e. Binary glTF.

glTF *GL Transmission Format*

Used by 3DTiles

- ▶ Efficient, extensible, interoperable format (3D transmission and loading)
- ▶ Preserve full hierarchical scenes
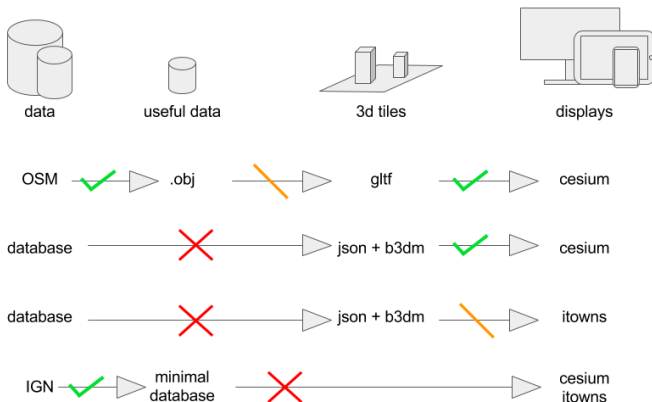- ▶ Making no assumptions about the target application or 3D engine.

.gltf (JSON)
Node hierarchy, materials, cameras

.bin
Geometry: vertices and indices
Animation: key-frames
Skins: inverse-bind matrices

.glsl
Shaders

.png
.jpg
...
Textures

Personal report

- ▶ Rediscovery of **Cesium** & Node js
- ▶ Discovery of streams (WMTS) and **file transfers** (gltf, b3dm
  . . .) + library js like OpenLayers
- ▶ Knowledge about **Markdown**
- ▶ Curious and Analytical mind

Demonstrator

Explainations

Demonstrator

Movie time

Personal report

- ▶ Relationship :
- ▶ Oslandia team
- ▶ IGN team
- ▶ Technical skills :
- ▶ 3d data mechanisms
    - ▶ cesium exploration
    - ▶ iTowns exploration

- ▶ Team skills :
- ▶ team splitting
- ▶ feedbacks

Conclusion

- ▶ Suggestion of a chain of production
- ▶ Creation of an interest