3D Web Mapping

Yes, We Can!

FOSS4G 2010
Agenda

- Camptocamp
- Why 3D Maps?
- 3D Models With Textures
  - ✔ Data acquisition
  - ✔ 3D models
  - ✔ Textures
- 3D Web Viewer
  - ✔ Integration
  - ✔ Interaction with 2D maps
- Questions
- Open Source solutions provider as editor and integrator
- Staff of 35 in Switzerland and France
- Camptocamp helps you move forward with the latest Open Source technologies
Camptocamp Domains of Activity

Geospatial Solutions
- Webmapping
- GIS
- Geospatial databases
- Spatial Data Infrastructure
- OGC Web Services

Business Solutions
- ERP
- Business Intelligence
- ETL

Infrastructure Solutions
- Linux
- HTTP, Apache Load balancing
- Cloud computing (AWS)
- VoIP

CONSULTING, RESEARCH & DEVELOPMENT

ENGINEERING, IMPLEMENTATION

OPEN SOURCE SUPPORT

TRAINING
Why 3D Maps?

- Because it's cool (and clients like cool stuff)
Why 3D Maps?

- Because it can help understand current and future 3D data
3D Models With Textures

An example: EPFL campus in Lausanne, Switzerland
Data Sources

- Architects floor plans and meta data

3D Models With Textures
Data Sources

- LIDAR points clouds

3D Models With Textures
Data Sources

- Helicopter images
Data Sources

- Drone (UAV) images

3D Models With Textures
Partners

- EPFL
  - Floor plans, meta data
  - www.epfl.ch

- Helimap
  - Helicopter images and LIDAR points cloud
  - www.helimap.ch

- SenseFly
  - Drone images
  - www.sensefly.com

- CVLAB (Computer Vision Laboratory, EPFL)
  - Camera position and angle out of drone images
  - cvlab.epfl.ch

- IGN (Institut Géographique National, France)
  - Model textures and automatic model generation
  - www.ign.fr

- Camptocamp
  - Everything else!
  - www.camptocamp.com
  - Global project management
Classical Approach

1. Architects Floor Plans
2. Helimap Points Cloud
3. Helimap Images
4. SenseFly Images
5. Any image

→ AutoCAD Modeling

→ Photoshop Textures

→ SketchUp Mapping

Non-textured 3D Model
Classical Approach

Floor plans to 3D
Classical Approach

3D Models With Textures
Classical Approach

- Preparing textures
Using Helimap Images

- Helimap Images
- Helimap Points Cloud
- Architects Floor Plans
- AutoCAD Modeling
- IGN Mapping

Non-textured 3D Model
Using Helimap Images

3D Models With Textures
Using SenseFly Images (beta)  3D Models With Textures

- SenseFly Images
  - CVLab Positions
  - AutoCAD Modeling
  - Helimap Points Cloud
- Architects Floor Plans
- IGN Mapping

Non-textured 3D Model
Using SenseFly Images (beta) 3D Models With Textures
Other Buildings

3D Models With Textures

Helimap Images

OR

CVLab Positions

IGN Modeling

SenseFly Images
Other Buildings

3D Models With Textures
3D Web Viewer

- MapFish architecture

MapFish Client

GeoExt Google Earth Module

GeoExt

OpenLayers

ExtJS

MapFish Server

MapFish Rest Protocol

POST/GET

PUT/DELETE

JSON/GeoJSON

OGC Protocols

OGC Services

WMS

WFS/WFS-T

CSW

WPS

MapFish architecture
EDF Project

3D Web Viewer
SITN Project
Thank you for your attention

Camptocamp SA

info@camptocamp.com     +41 21 619 10 10     +33 4 79 44 44 94