

# *3D & Augmented reality*

«3D Processing- Acquizition technics – Modeling and integration »  
*Applicative context: 3D Mapping*

Dr. Taha Ridene

[taha.ridene@mines-paris.org](mailto:taha.ridene@mines-paris.org)

[taha-ridene.com](http://taha-ridene.com)

# Plan

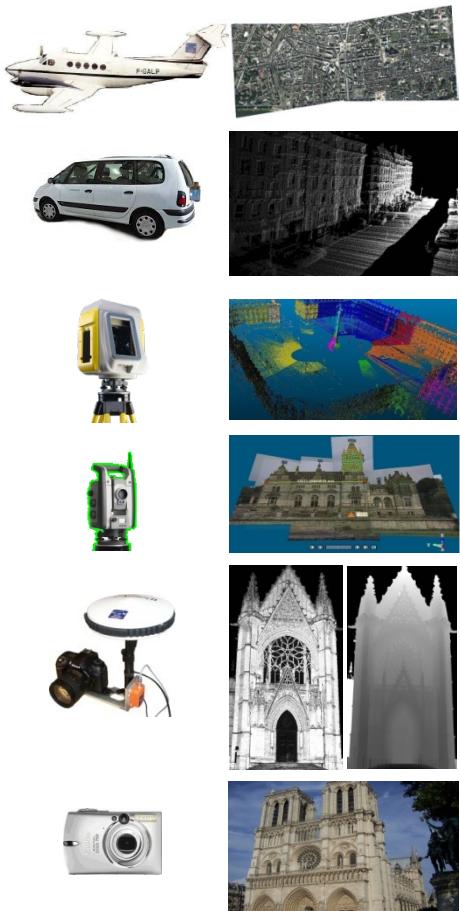
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*I. Introduction*

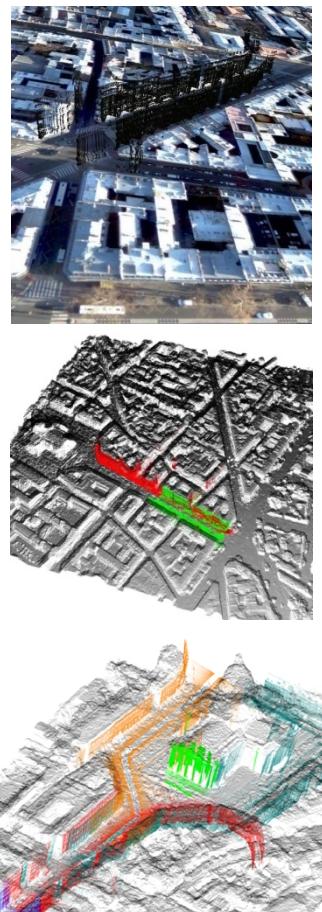
*II. 3D processing in mapping context*

*III. Planning*

## Acquisition



## Registration



## Reconstruction



## Intégration



## production 3D Maps

- Topographie : Classical approach
- Photogrammetry : aerial
- Lasergrammetry : terrestrial
- Procedural...

Partial Overlapping

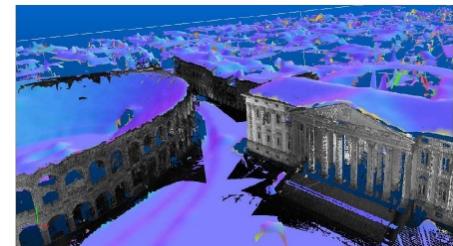
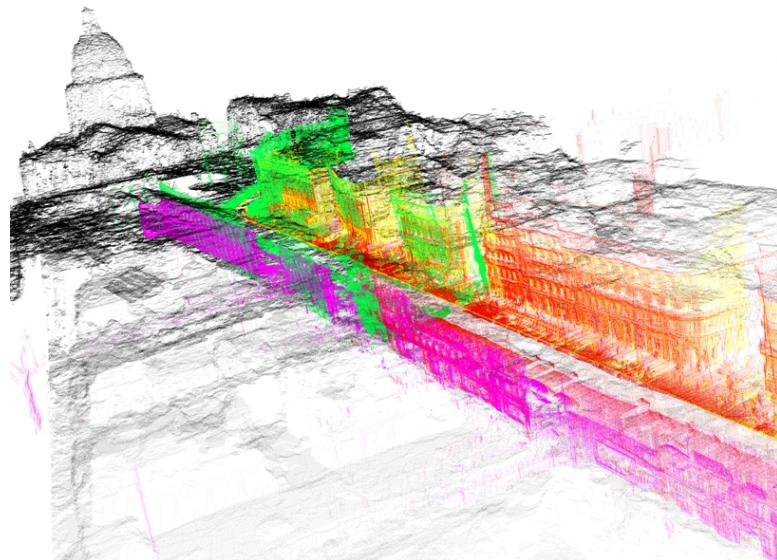


## production 3D Maps

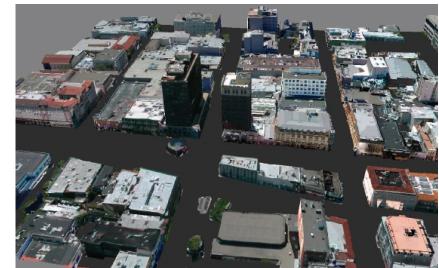
- Topographie : Classical Approach
- Photogrammetry : aerial
- Lasergrammetry : terrestrial
- Procedural...

Partial Overlapping

### 3D FUSION



JRC, ISPRA (Gonçalves et al)



UC Berkeley (Früh and Zakhor)

Mensi Trimble



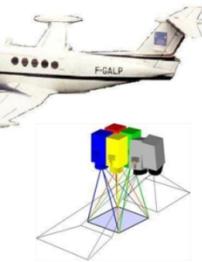
**1-5cm  
Building**

Mines ParisTech



**10-20cm  
Street**

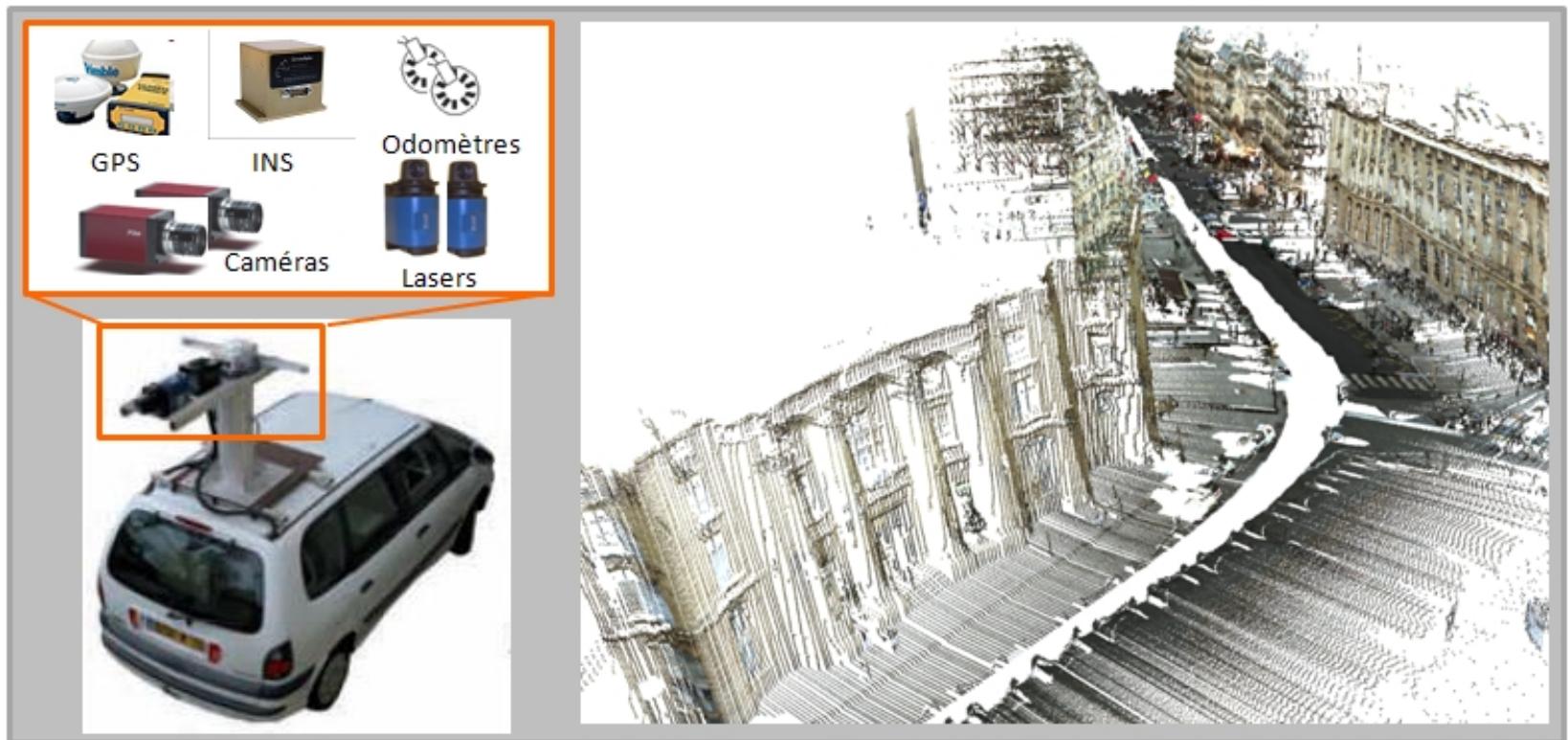
IGN



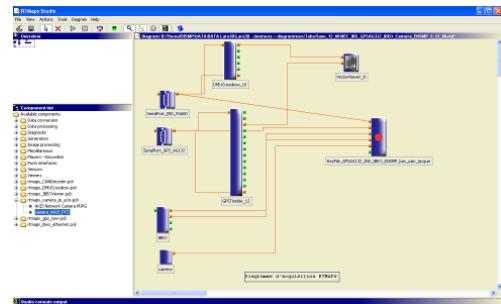
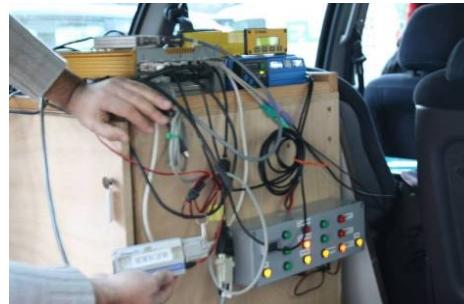
**0.5-1m  
city**



## MMS : Lara3D



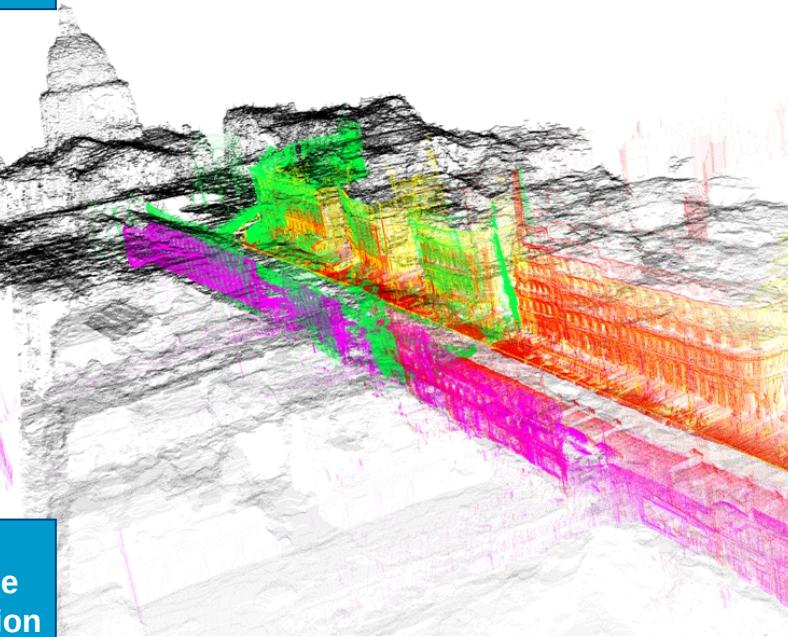
## Acquisitions : Lara3D





<http://taha-ridene.com/research/3d-maps-mobile-mapping-systems/mmt>

Données hétérogènes  
géo référencées Lambert2  
(1<sup>ère</sup> initialisation au recalage)

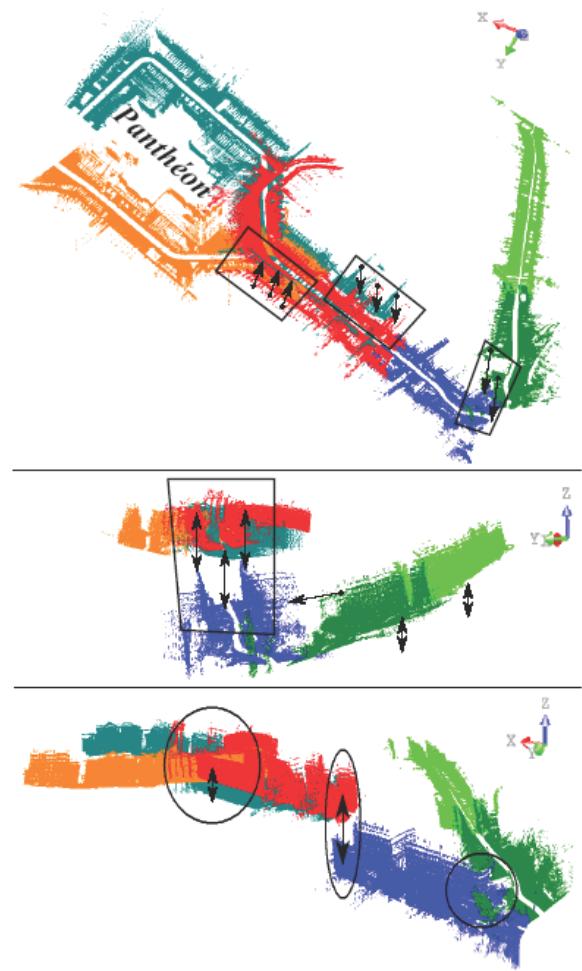


Recalage fin  
entre les données

Mise en cohérence

Données uniformisées en entrée  
de la phase de fusion/modélisation

Diagramme du processus de  
mise en cohérence et de fusion



- 3D DATA /2.5D Data
- 3D Mobile Mapping System
- 3D Processing
- RA Application using 3D

g 3D point clouds - Google × PCL - Point Cloud Library ×

pointclouds.org

 pcl

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## *References*

- <http://pointclouds.org/>
- <http://imara.inria.fr/caor>
- <http://imara.inria.fr/>
- <http://recherche.ign.fr/labos/matis/>
- <http://www.trimble.com/>
- <http://citu.fr/#in>
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*Thank you for your attention*