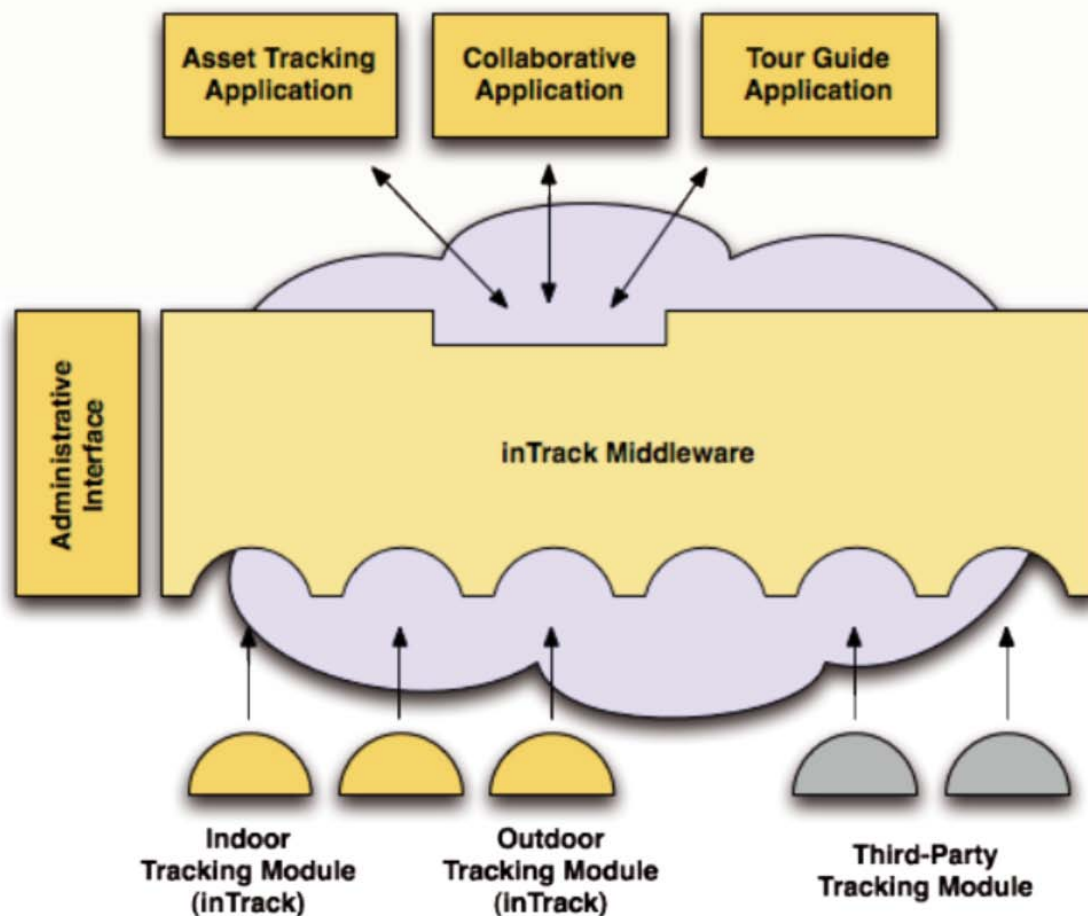


In-Track : Integrated Platform for LBS



heig-vd

Haute Ecole d'Ingénierie et de Gestion
du Canton de Vaud

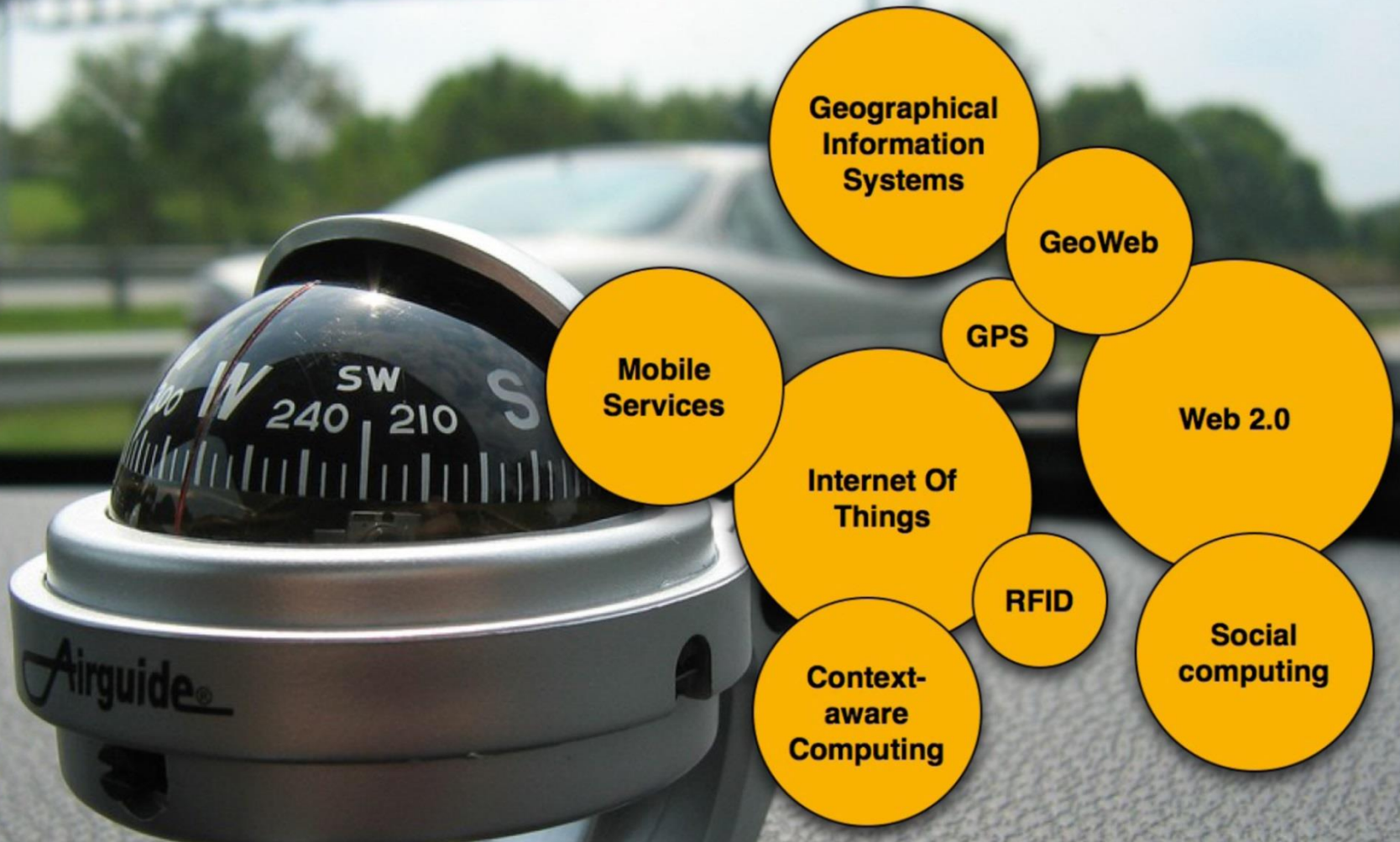
Hes·SO VALAIS
WALLIS

EIA-FR
HTA-FR

Unil

UNIL | Université de Lausanne

Le contexte ...



Une plateforme de services unifiée ?

Applications

infrastructures logicielles

modèles, services, flexibilité, charge, sécurité...?

infrastructures matérielles

RFID, NFC... WSN... GPS, WIFI, CELL ID...

inTrack expérimentations...

myFest

Kyoto
MEP

Sower

mWT

uBike

-> middleware (RESTful API)

wifi

GPS

...

indoor

3D ...

myFest en bref...





Jérôme Freyre
... client web
et services web

paleo
FESTIVAL
NYON



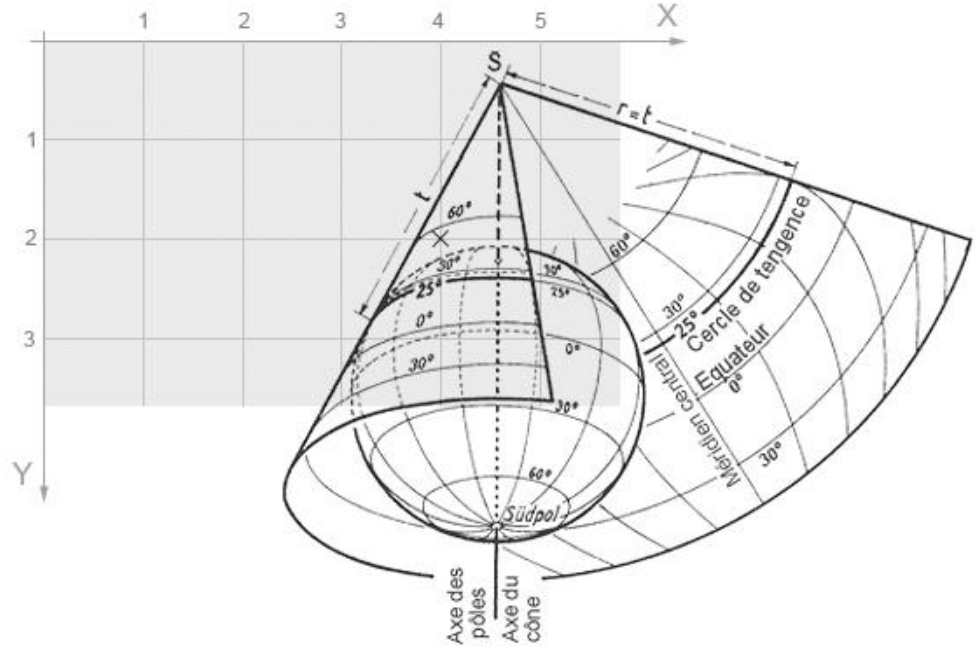
Gaël Rayot
... client Android



Avec David Johannot...
Dans le rôle du client iOS



Spécifications, les « must-have »...



Le dilemme OGC...



Les ingrédients... « tools »

Serveurs « géographiques »

<http://www.geoserver.org>

<http://www.mapserver.org>

APIs « moteurs de rendu »

iPhone:

<http://code.google.com/p/route-me/>

<http://code.google.com/p/iphone-google-maps-component/>

<http://developers.cloudmade.com/projects/show/iphone-api/>

Android:

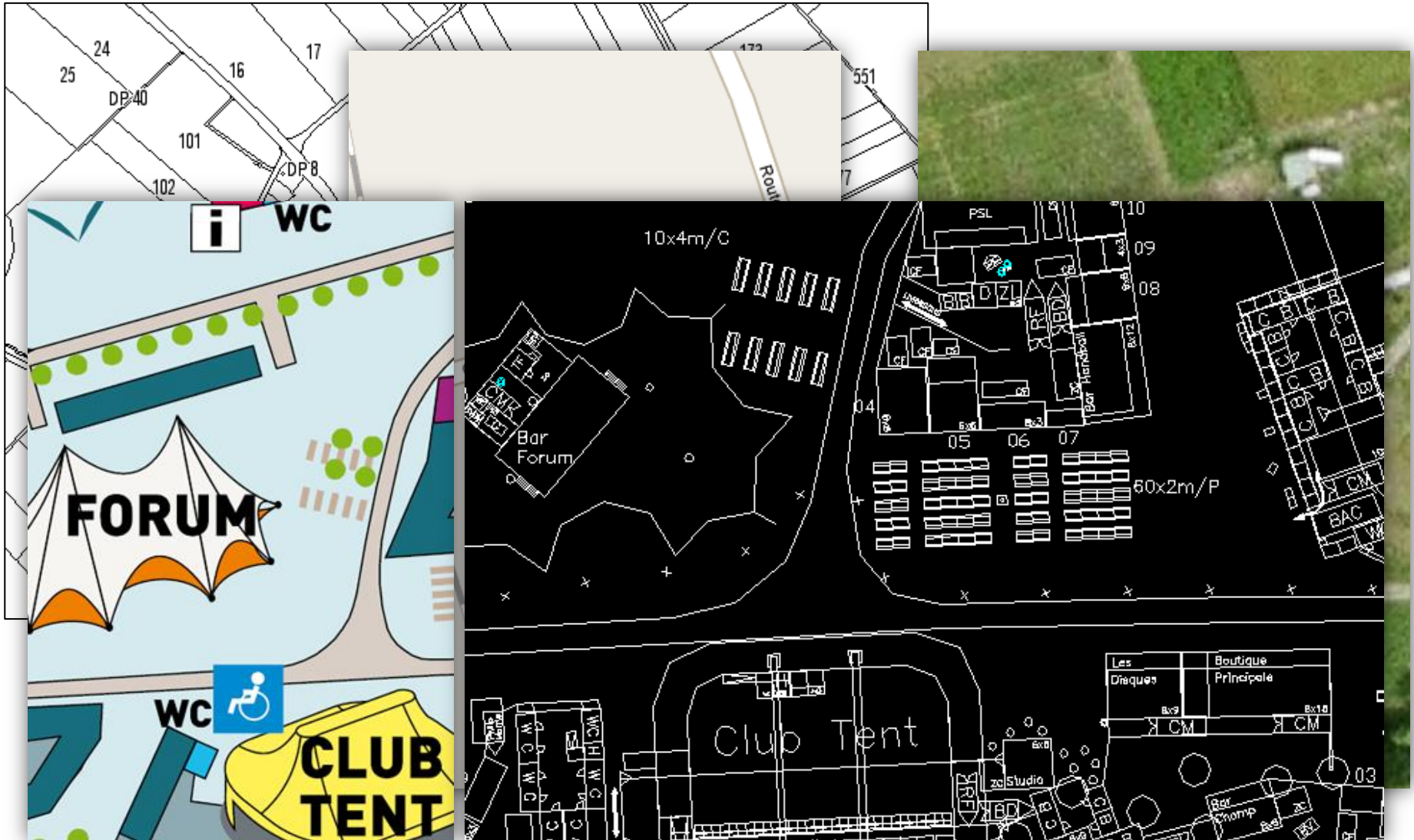
<http://developer.android.com/guide/topics/location/>

<http://www.nutiteq.com/mobile-map-api/>

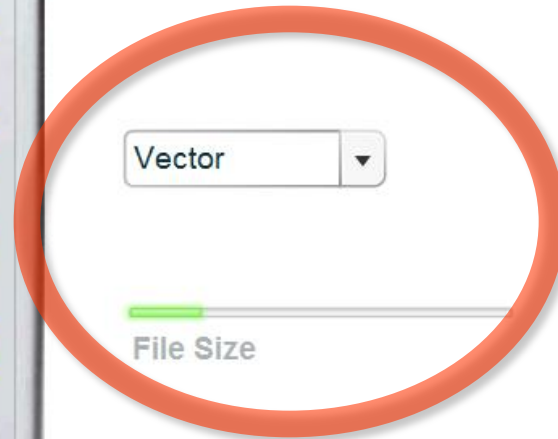
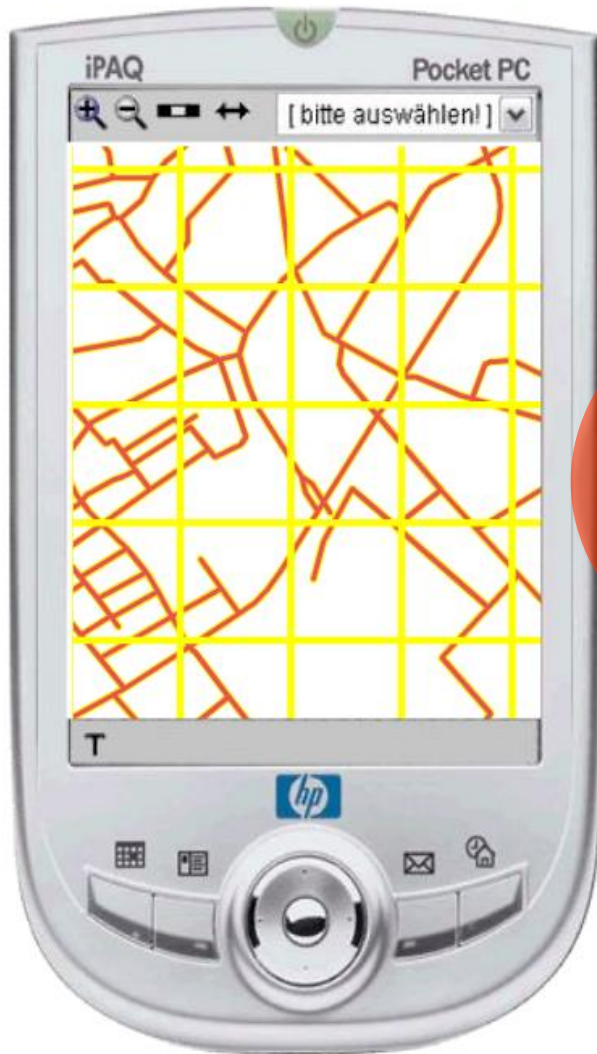
<http://code.google.com/android/add-ons/google-apis>

...

Les ingrédients... « data »



Vecteurs ou bitmaps?



Vector

Raster



Vecteurs ou bitmaps?



3 Num Layers

4 Tile Level

Vector

File Size

Response Time

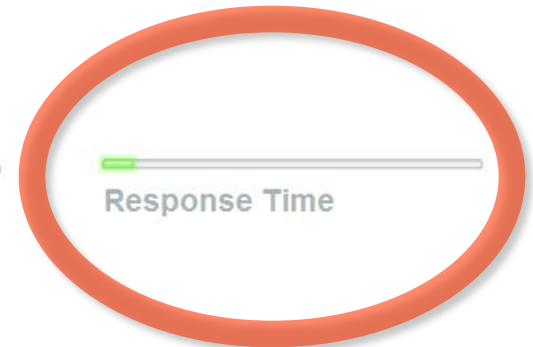
3 Num Layers

4 Tile Level

Raster

File Size

Response Time



Des bitmaps, oui... mais tuilés!

Table 9-4. *Tile Size and Storage Requirements for Each Zoom Level of the Google Mercator Projection*

Zoom	Tile Dimensions	Pixel Dimensions	Number of Tiles	Disk Space Required*
0	1×1	256×256	1	10.209KB
1	2×2	512×512	4	40.839KB
2	4×4	1024×1024	16	163.359KB
3	8×8	2048×2048	64	653.437KB
4	16×16	4096×4096	256	2.552MB
5	32×32	8192×8192	1024	10.209MB
6	64×64	16384×16384	4096	40.839MB
7	128×128	32768×32768	16384	163.359MB
8	256×256	65536×65536	65536	653.437MB
9	512×512	131072×131072	262144	2.552GB
10	1024×1024	262144×262144	1048576	10.209GB
11	2048×2048	524288×524288	4194304	40.839GB
12	4096×4096	1048576×1048576	16777216	163.359GB
13	8192×8192	2097152×2097152	67108864	653.437GB
14	16384×16384	4194304×4194304	268435456	2.552TB
15	32768×32768	8388608×8388608	1073741824	10.209TB
16	65536×65536	16777216×16777216	4294967296	40.839TB
17	131072×131072	33554432×33554432	17179869184	163.359TB
Total			22906492245	217.812TB

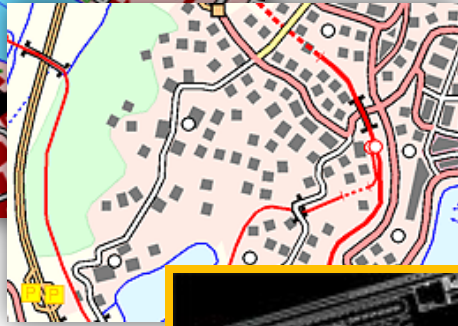
*Based on an average file size of 10,455 bytes per tile.



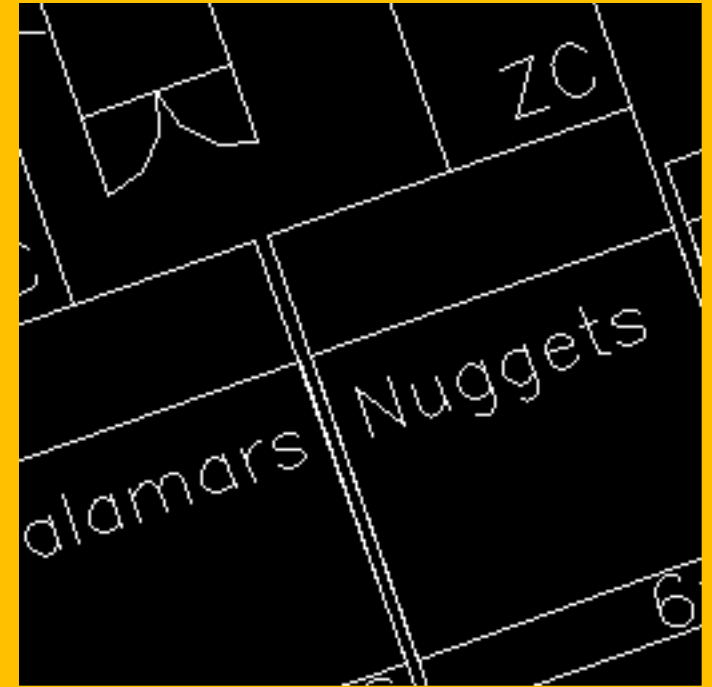
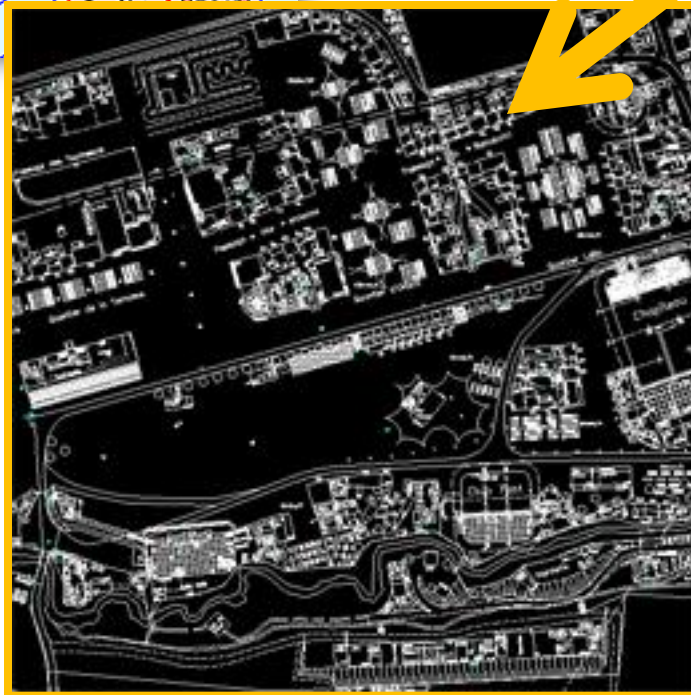
La tuile... c'est le coût!



Swisstopo, novembre 2009



24'000 heures
32 serveurs



Paléo ?

5 à 7 niveaux de zoom...
> 20'000 images...

Après quelques déconvenues...



Google

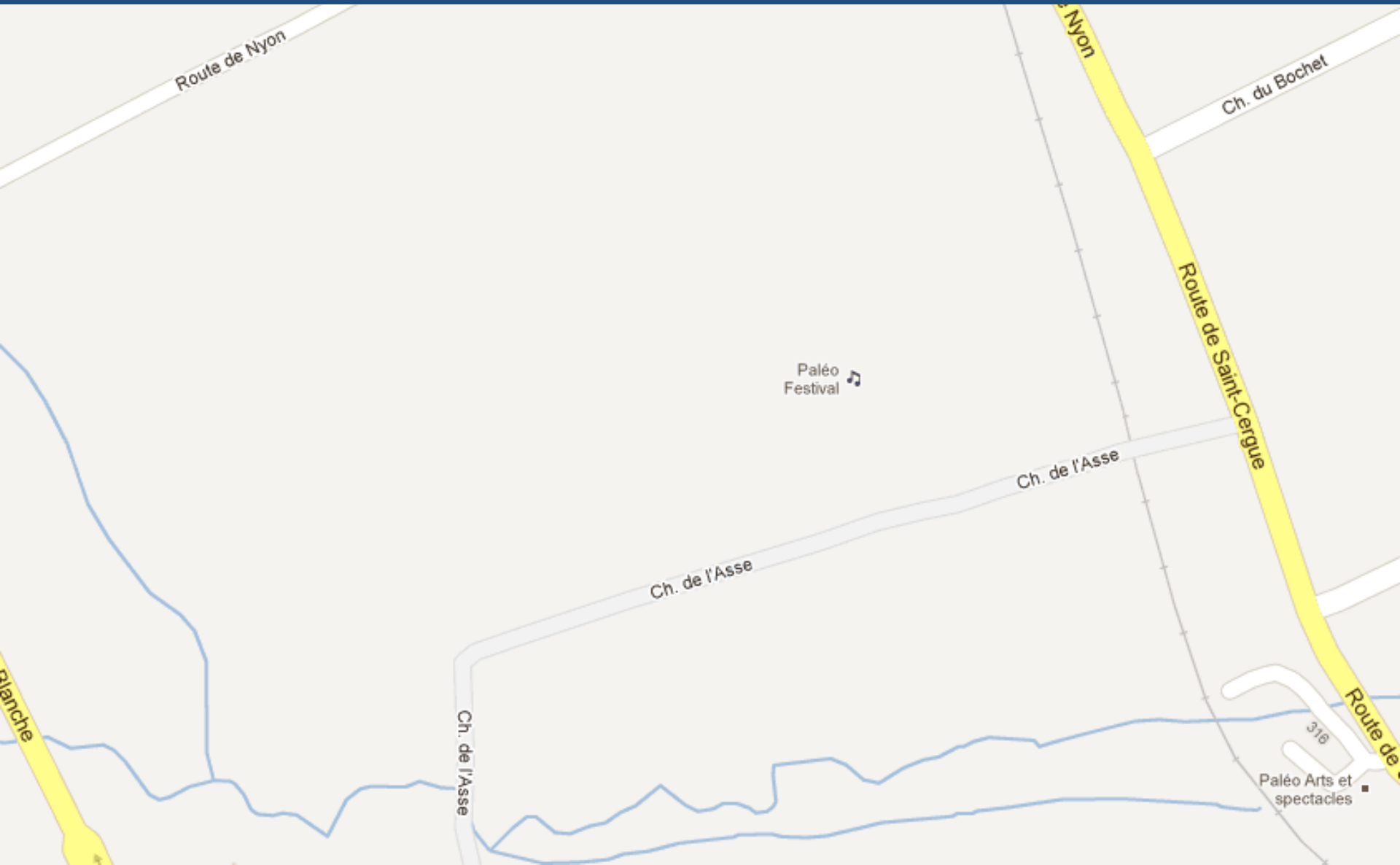
gmap API = gmap tiles only ☹️



...vecteurs superposables ☺️



Sans vecteurs, pas de salut!



Fonction de repérage vs détection...



bitmaps pour « habiller »...

Chapiteau
All kind of music
(8'000 places)



vecteurs idem... mais en plus:
pour interroger, interagir !

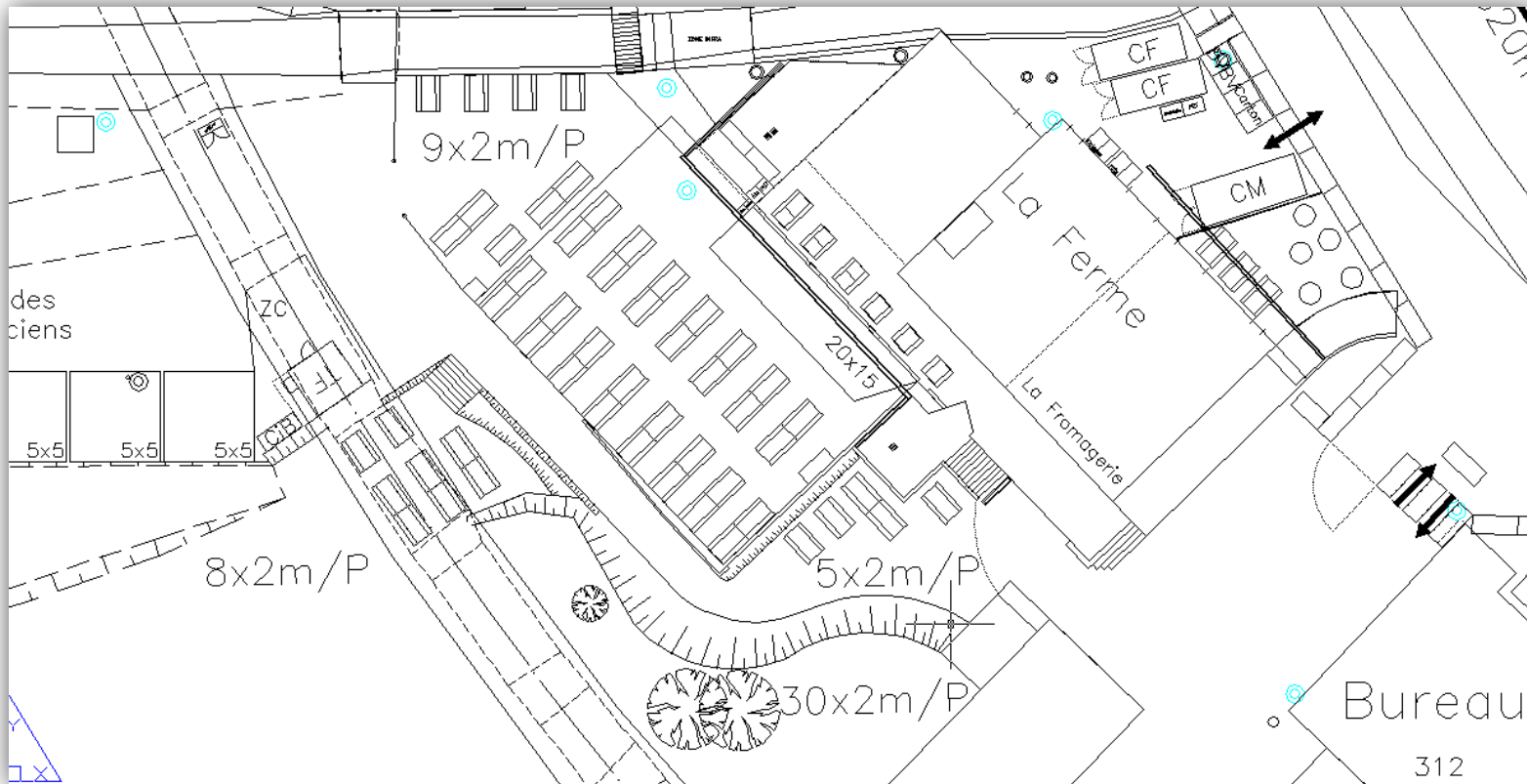


Un peu de ménage...



3 fichiers, « déconnectés »

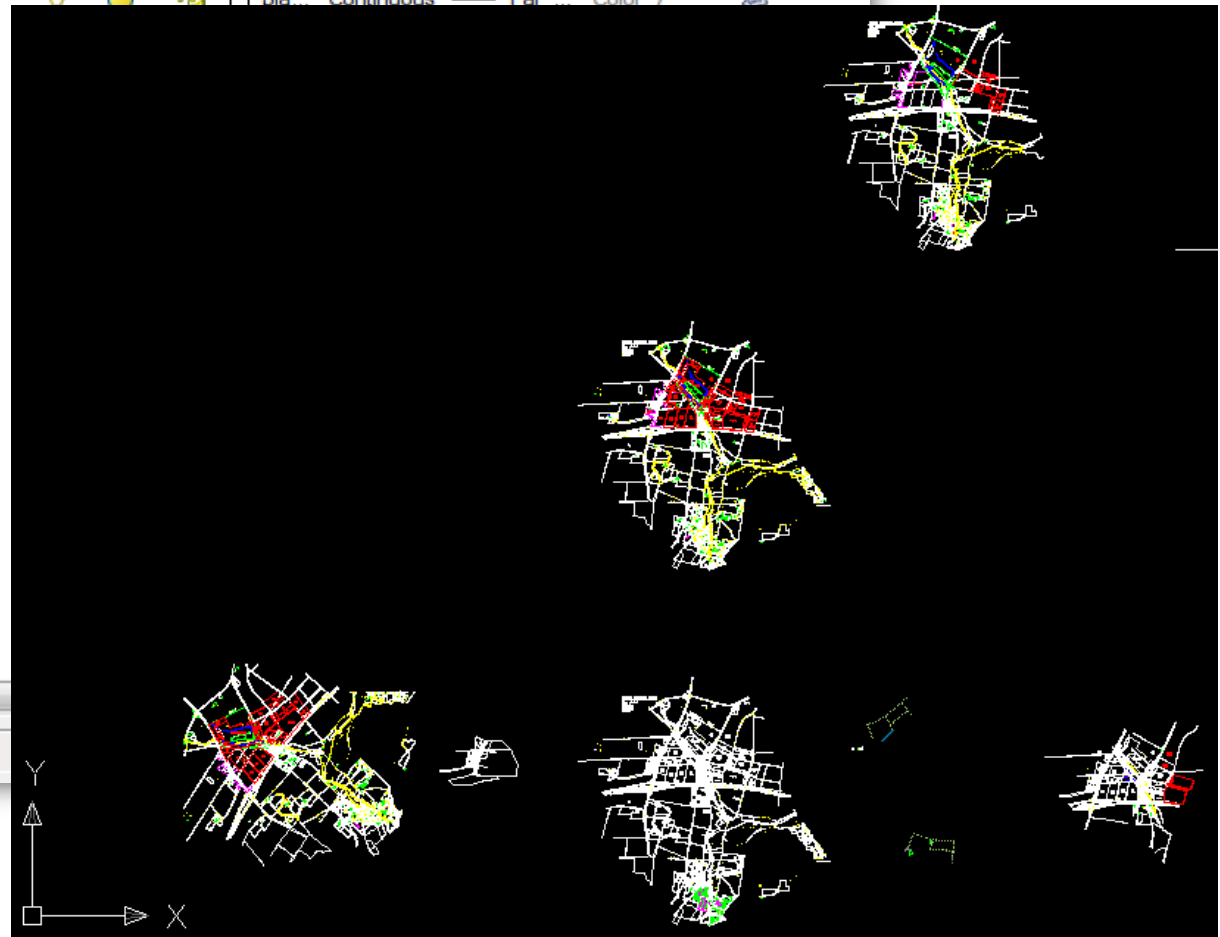
un niveau de détail impressionnant...



Beaucoup de ménage...

☒	POTEAUX	☒	☒	☒	73	Continuous	—	Par...	Color_73	☒
☒	POUBELLE	☒	☒	☒	rou...	Continuous	—	Par...	Color_1	☒
☒	Projet ARTE	☒	☒	☒	rou...	Continuous	—	Par...	Color_1	☒
☒	projet ecocup	☒	☒	☒	rou...	Continuous	—	Par...	Color_1	☒
☒	Projet TSR	☒	☒	☒	rou...	Continuous	—	Par...	Color_1	☒
☒	PROJET2	☒	☒	☒	bla...	Continuous	—	Par...	Color_7	☒
☒	REGARD									
☒	REGARDS									
☒	REPLISSAGE									
☒	RESTAURANTS									
☒	ROULOTTE									
☒	ROUTE_CHEMIN									
☒	RTES-CHEMINS									
☒	SANITAIRE_EAU_CLAIR									
☒	SANITAIRE_LAVABO									
☒	SANITAIRE_WC_CHIM									
☒	SCENE									
☒	SENTIER									
☒	SEQUENCE									
☒	SPONSORS									
☒	STANDARD									
☒	STANDS									
☒	TABLES									
☒	TALUS									
☒	Terrasse-JPF									
☒	TEXT									
☒	TEXT CHEMINS									

des calques...

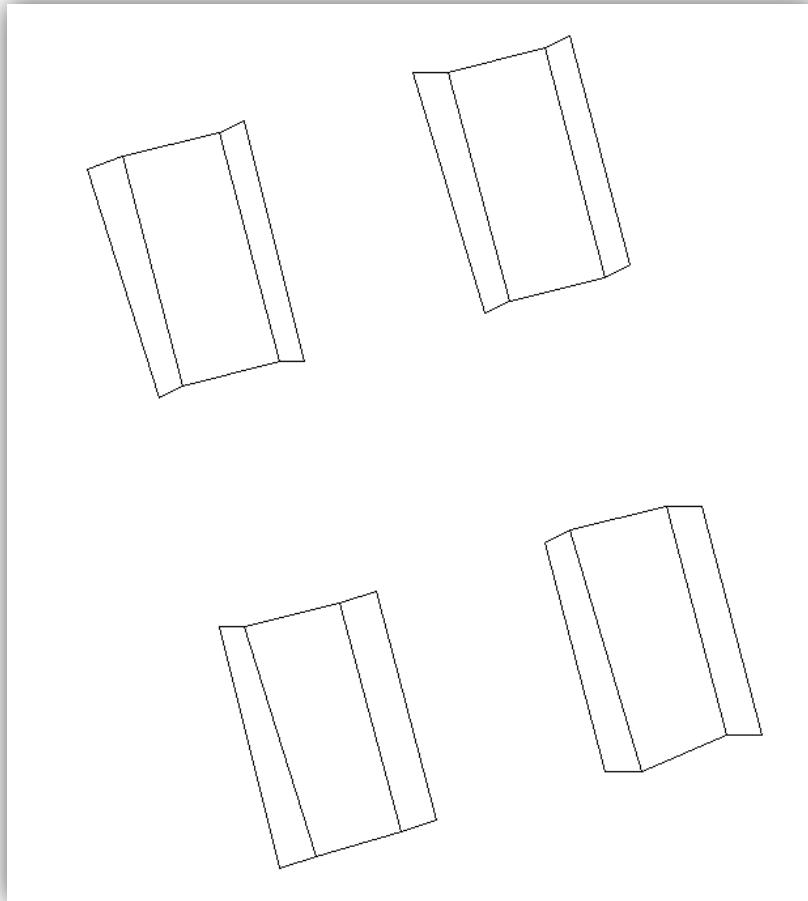


185 calques

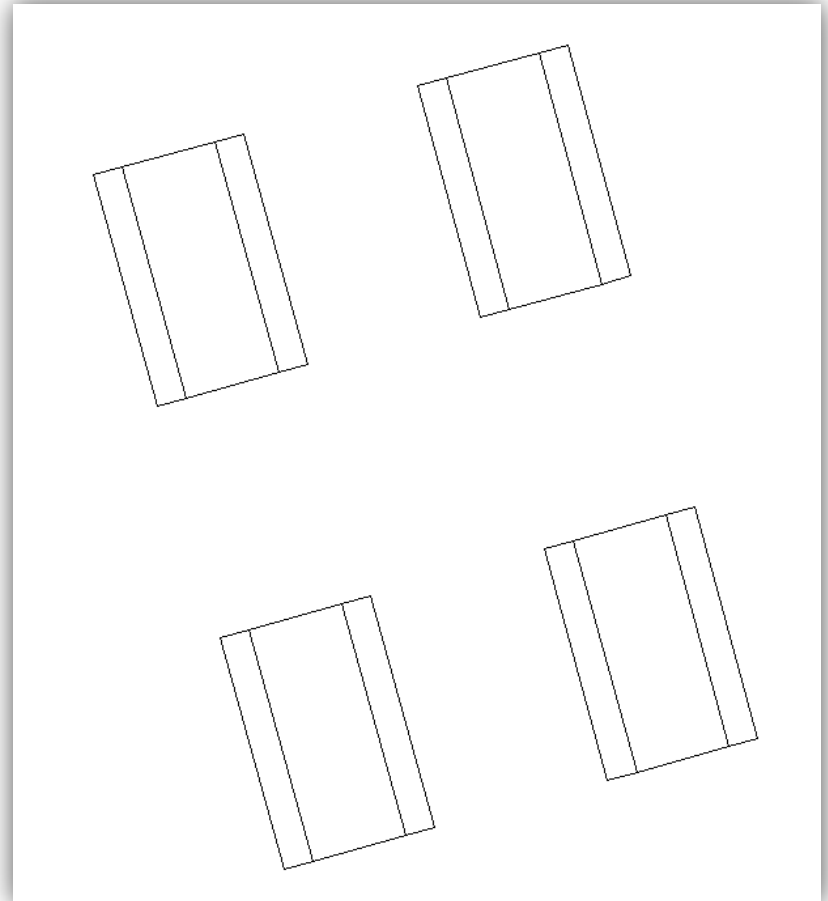
un référentiel graphique...

Tracasserie n + 1

Pour passer du graphique au géographique:

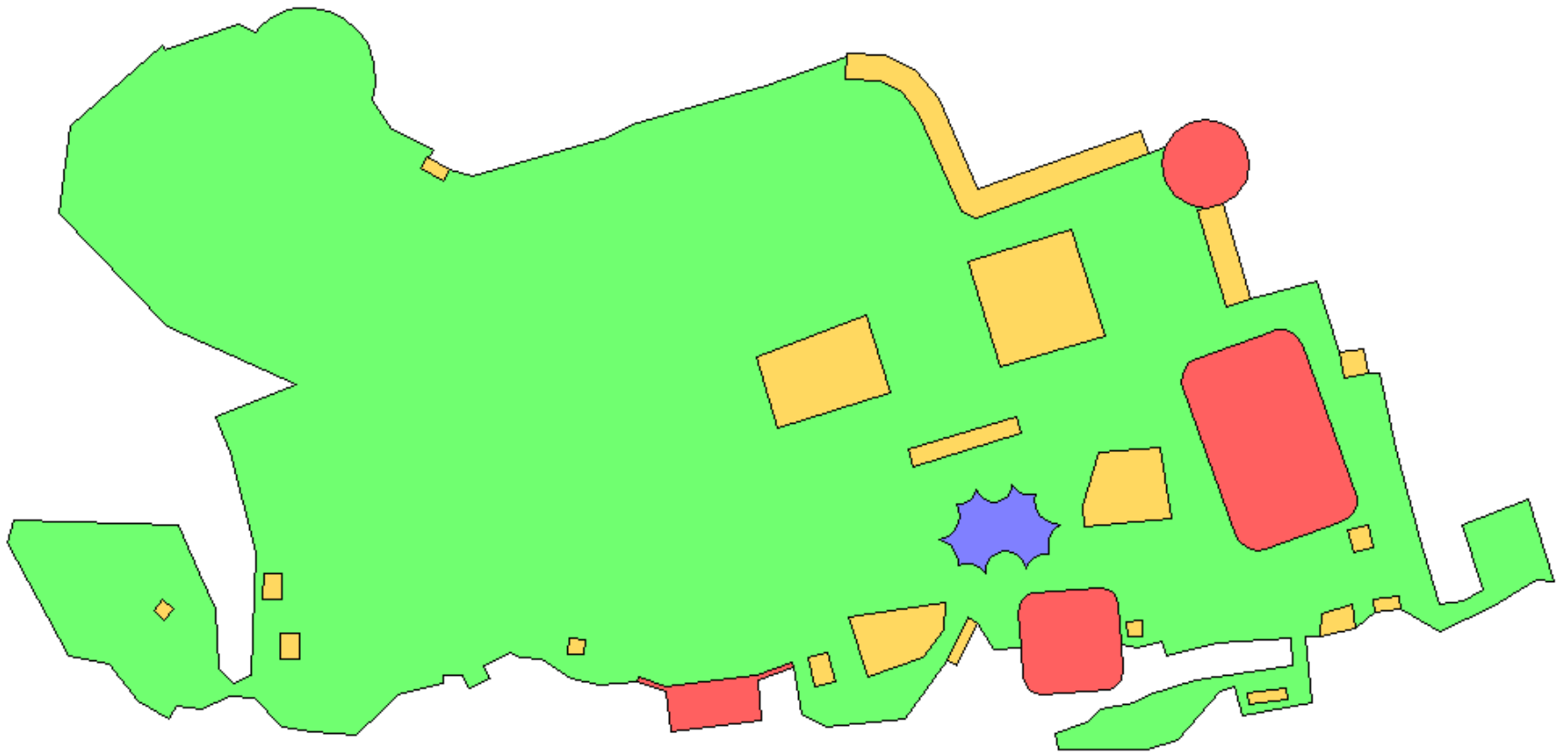


$\{x;y\} \rightarrow \{\text{lon};\text{lat}\} \rightarrow \{\text{lon};\text{lat}\}$

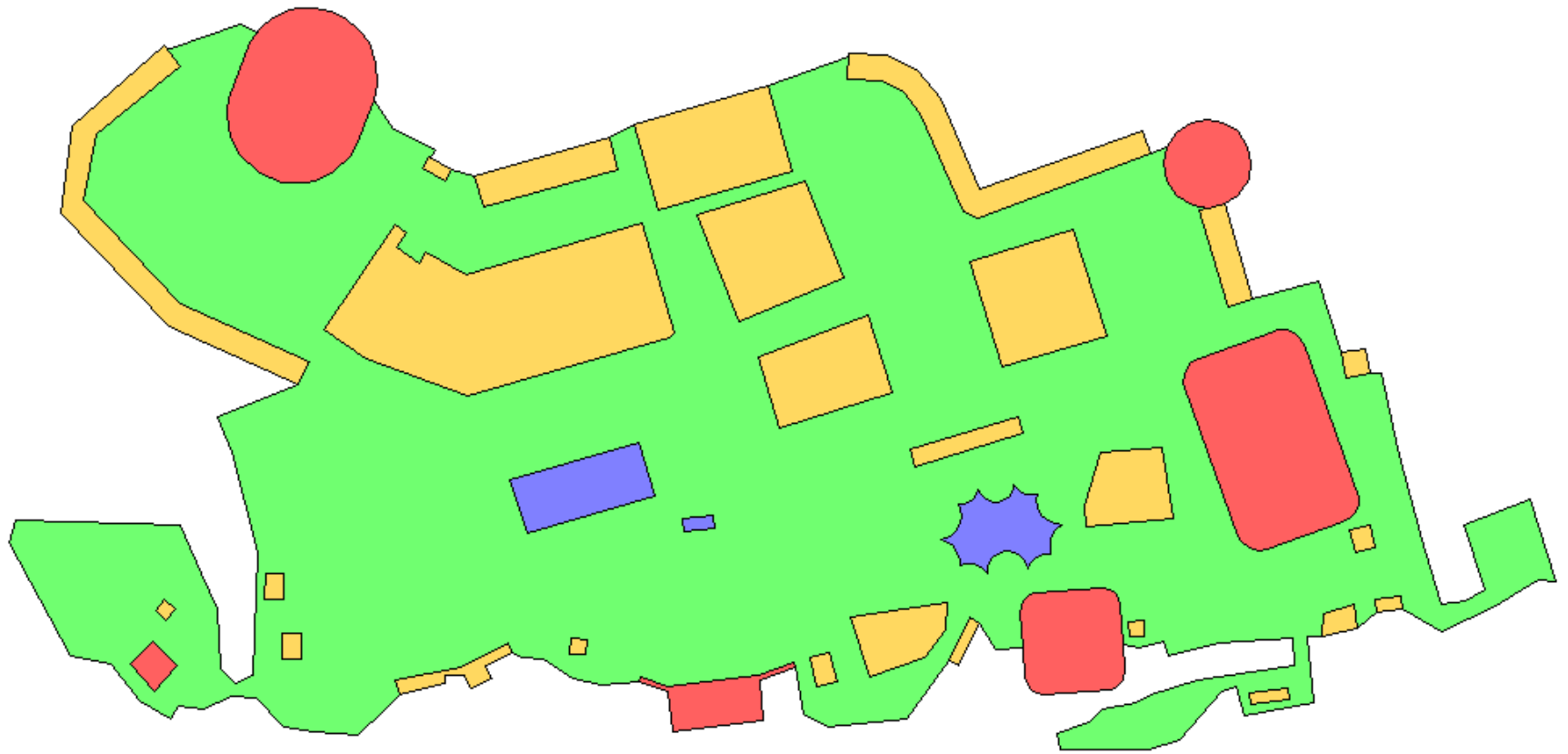


$\{x;y\} \rightarrow \{x;y\} \rightarrow \{\text{lon};\text{lat}\}$

Tracasserie n + 2



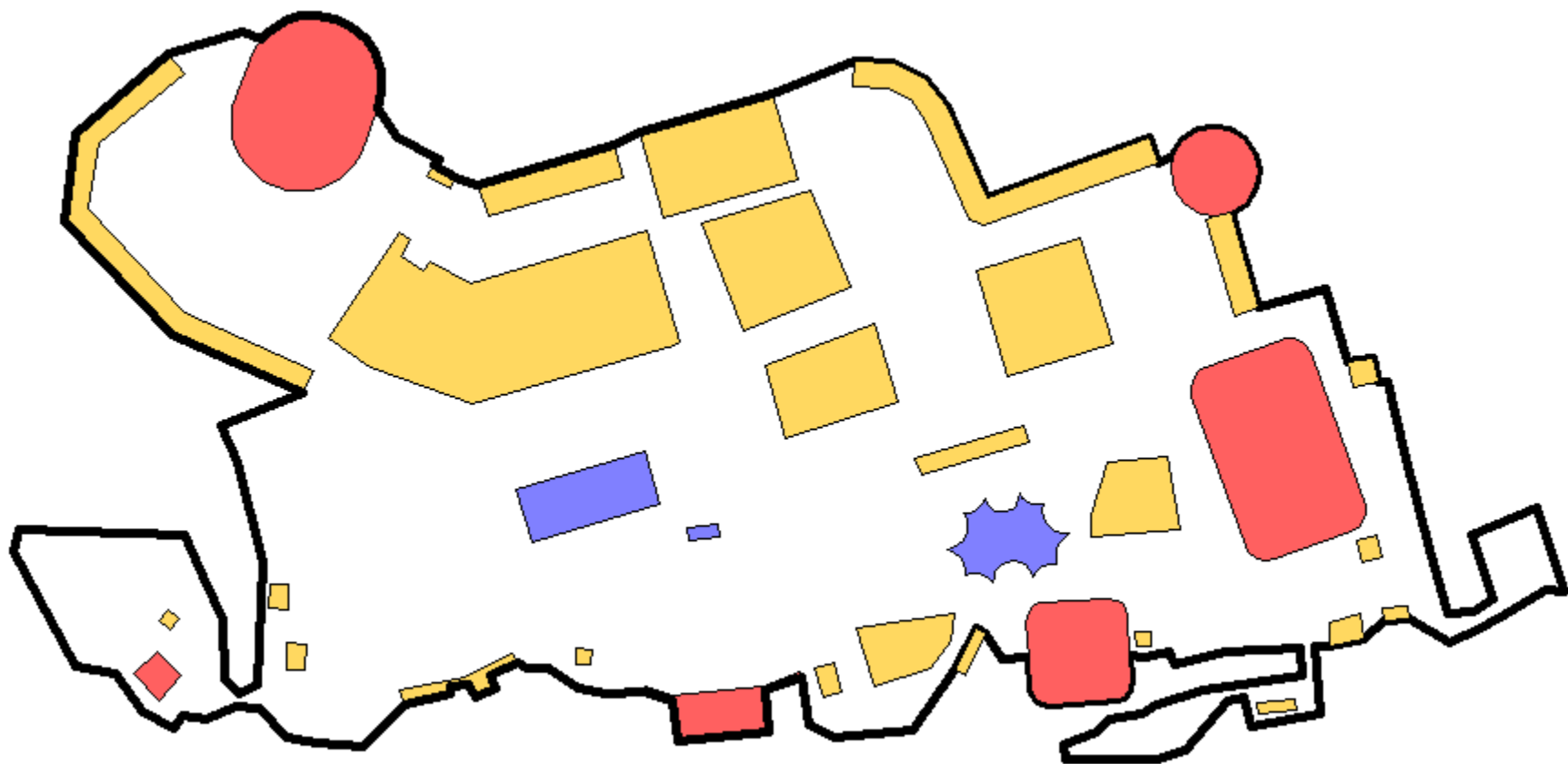
Tracasserie n + 2



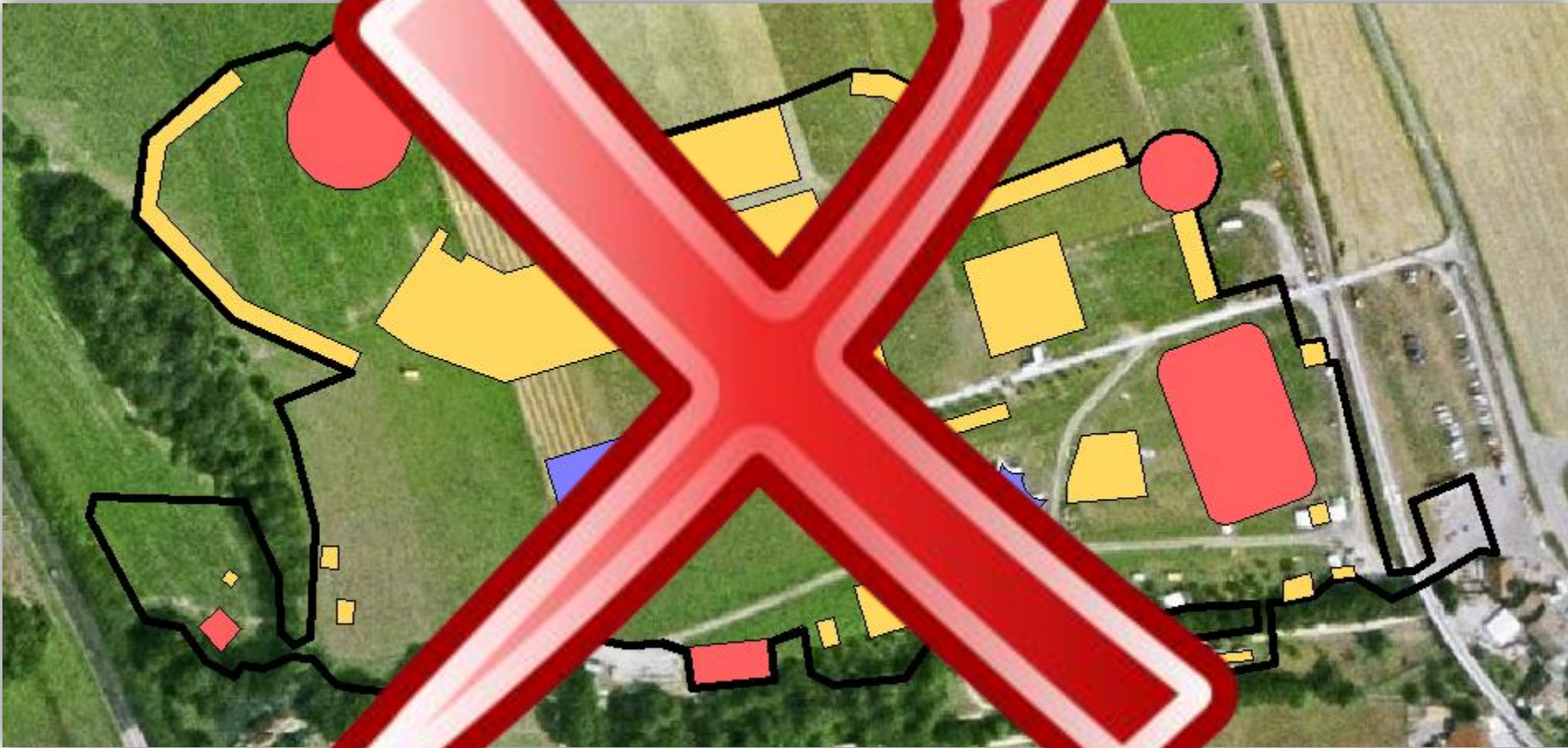
La transparence ?



Le vide ?



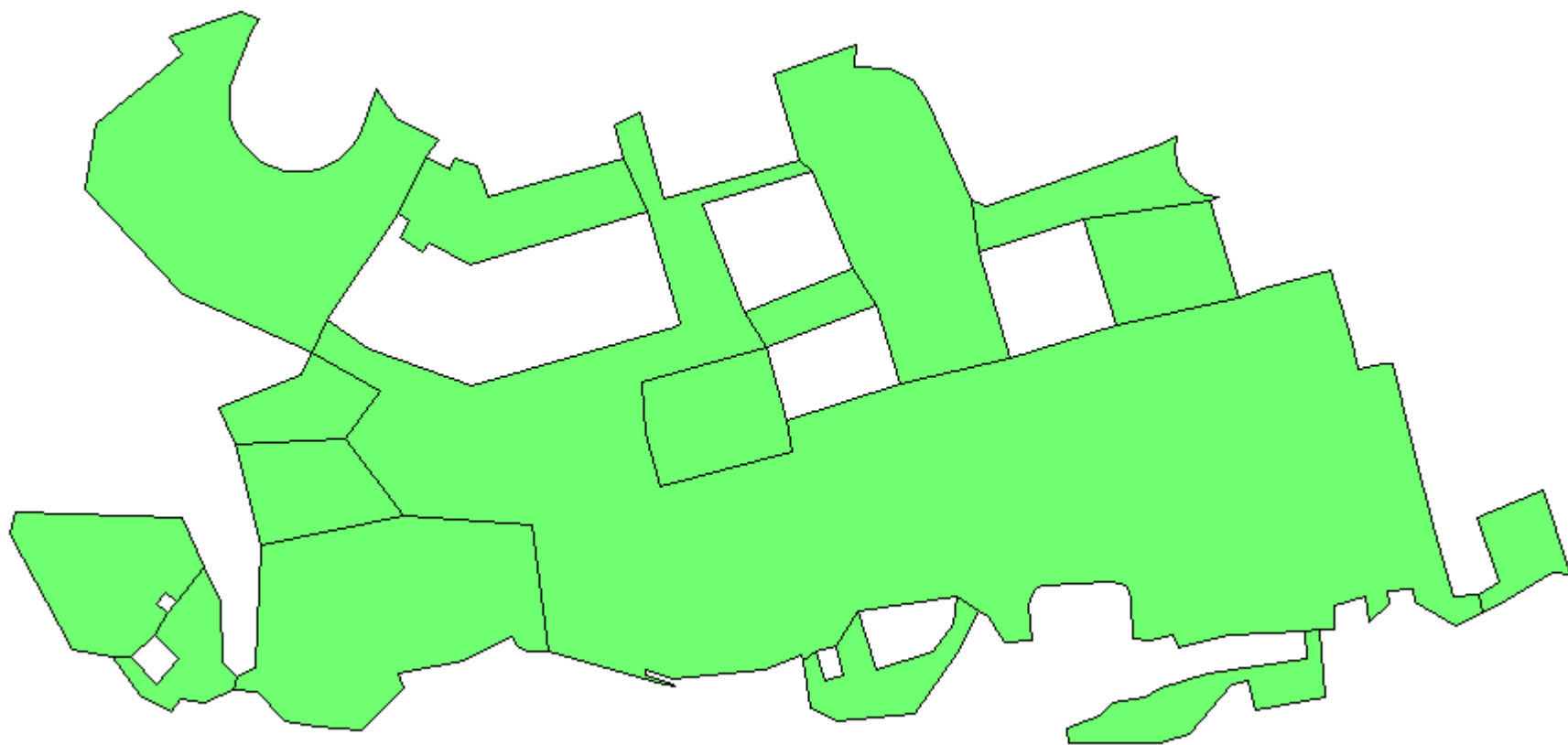
Le vide ?



Vide partiel ?

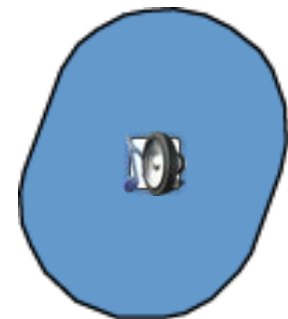


Sans les « trous », les quartiers...



Un phénomène étrange...

```
$styles['STAGE'] = array(  
    'externalGraphic' => 'music.png',  
    'color'           => '126,51,187,0.8',  
    'strokeColor'    => '0,0,0,1',  
    'strokeWidth'    => '1',  
    'categorized'    => 'true'  
);
```



Impossible sans les contours...



Des quartiers « disjoints » ?



Hum... avec deux fichiers data 😊



Tracasserie n+3 : event capture...

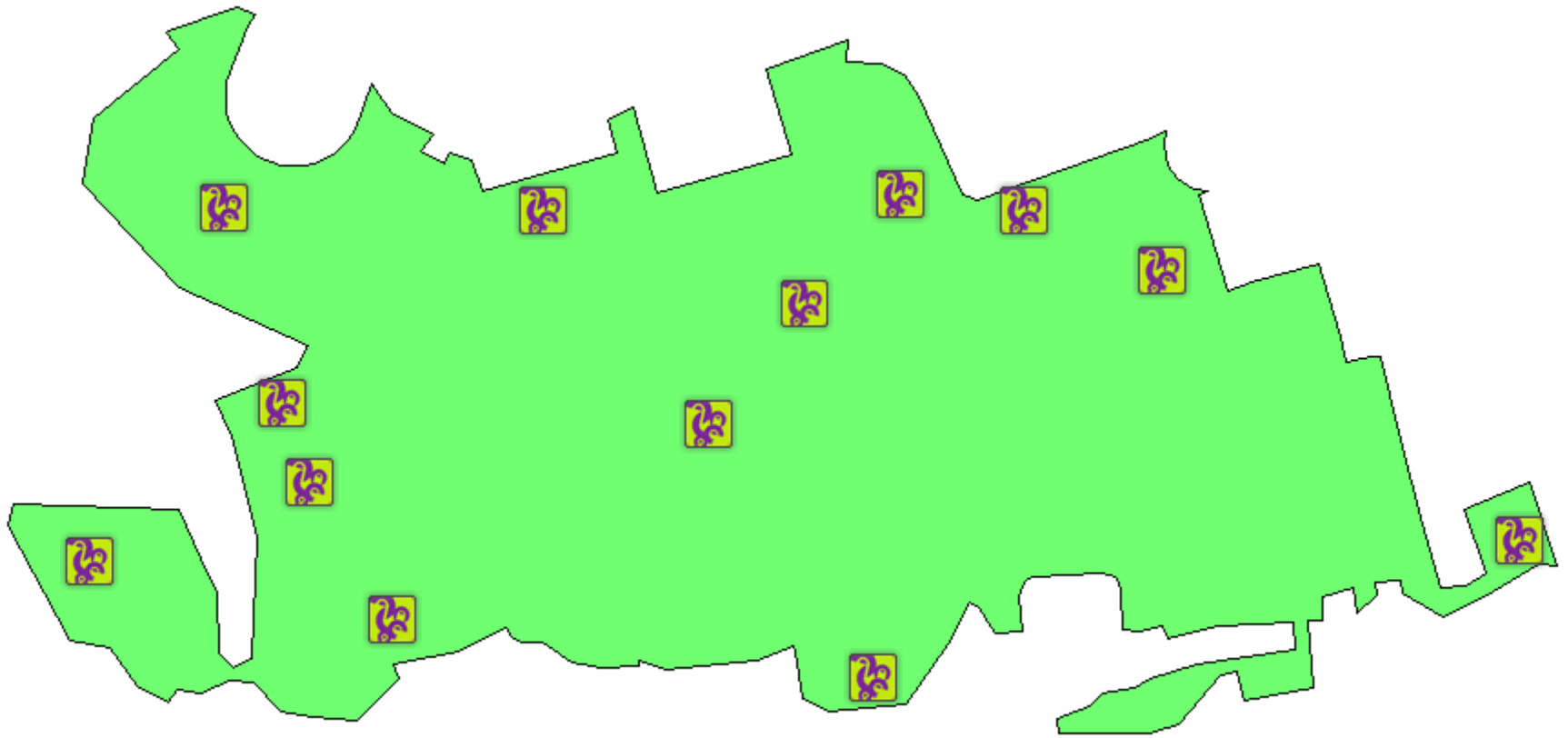


Polygone
NON

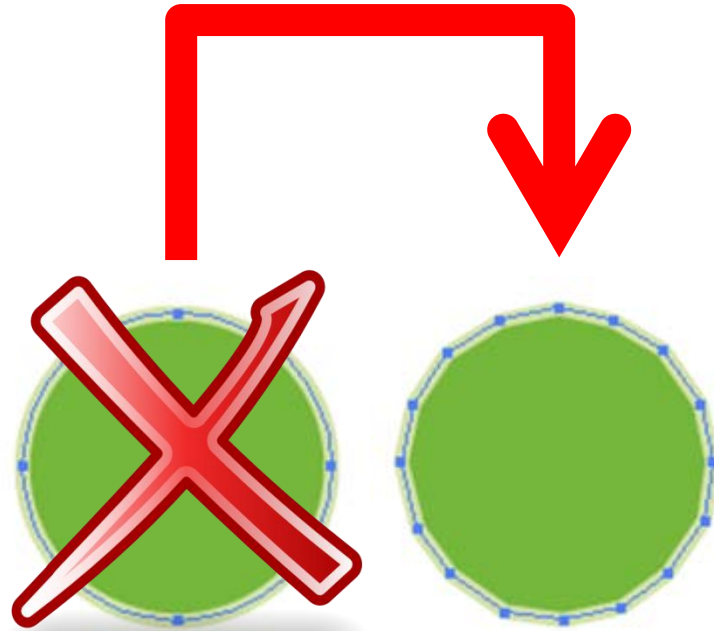
Points
OUI



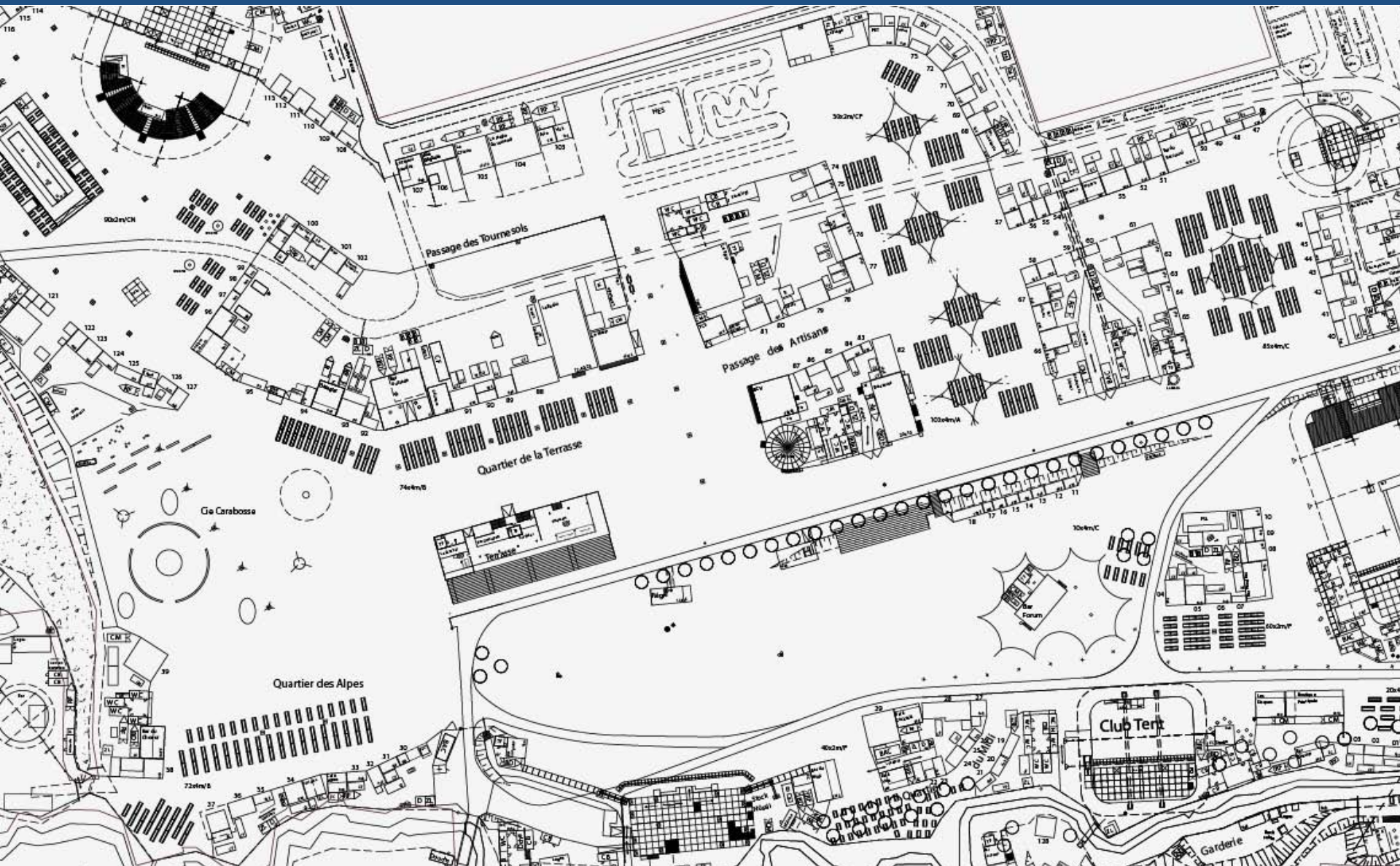
Un « ersatz » de quartiers...



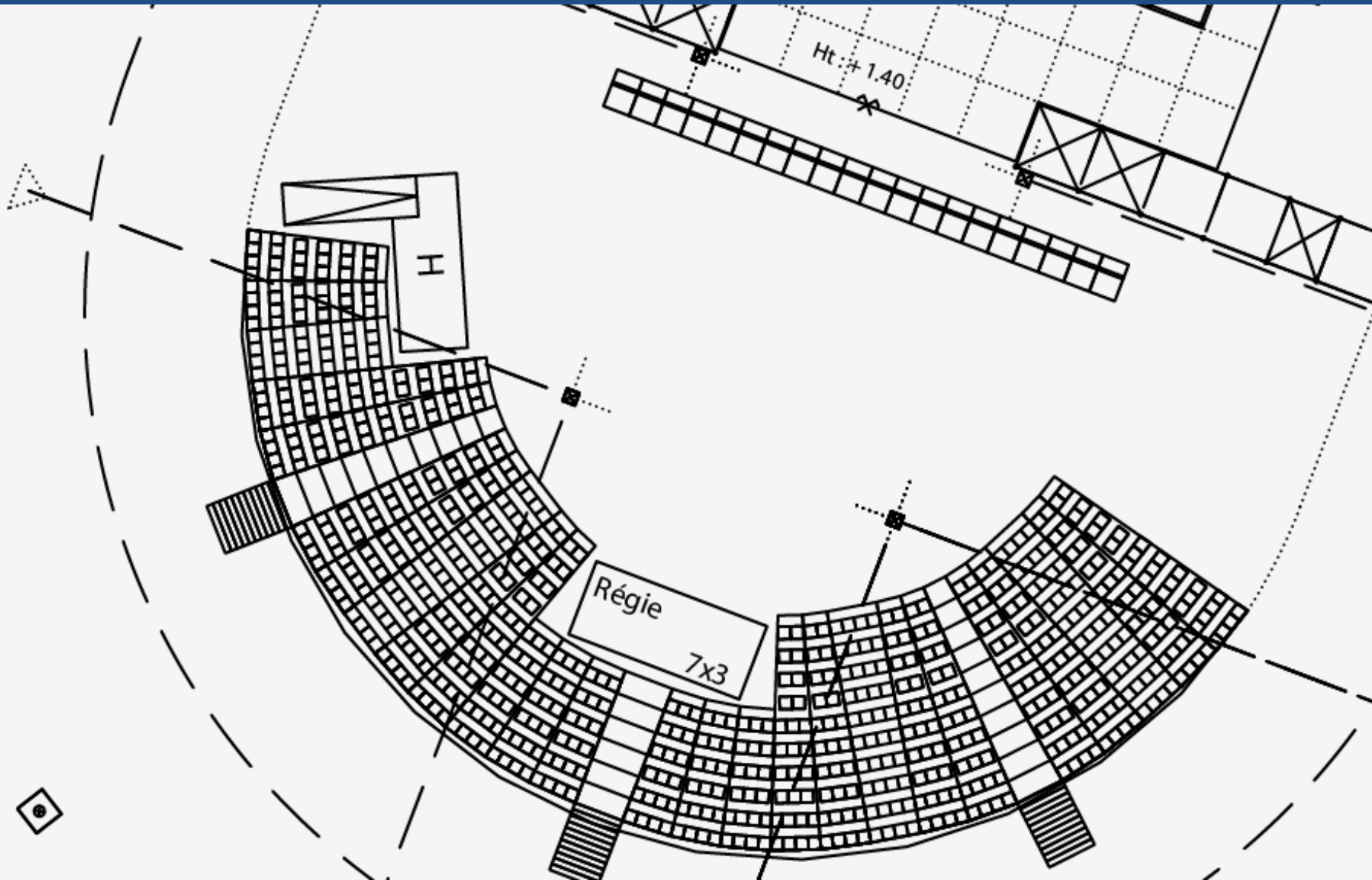
Tracasserie n+4 : syntaxe...



Tracasserie n+5 : lag...



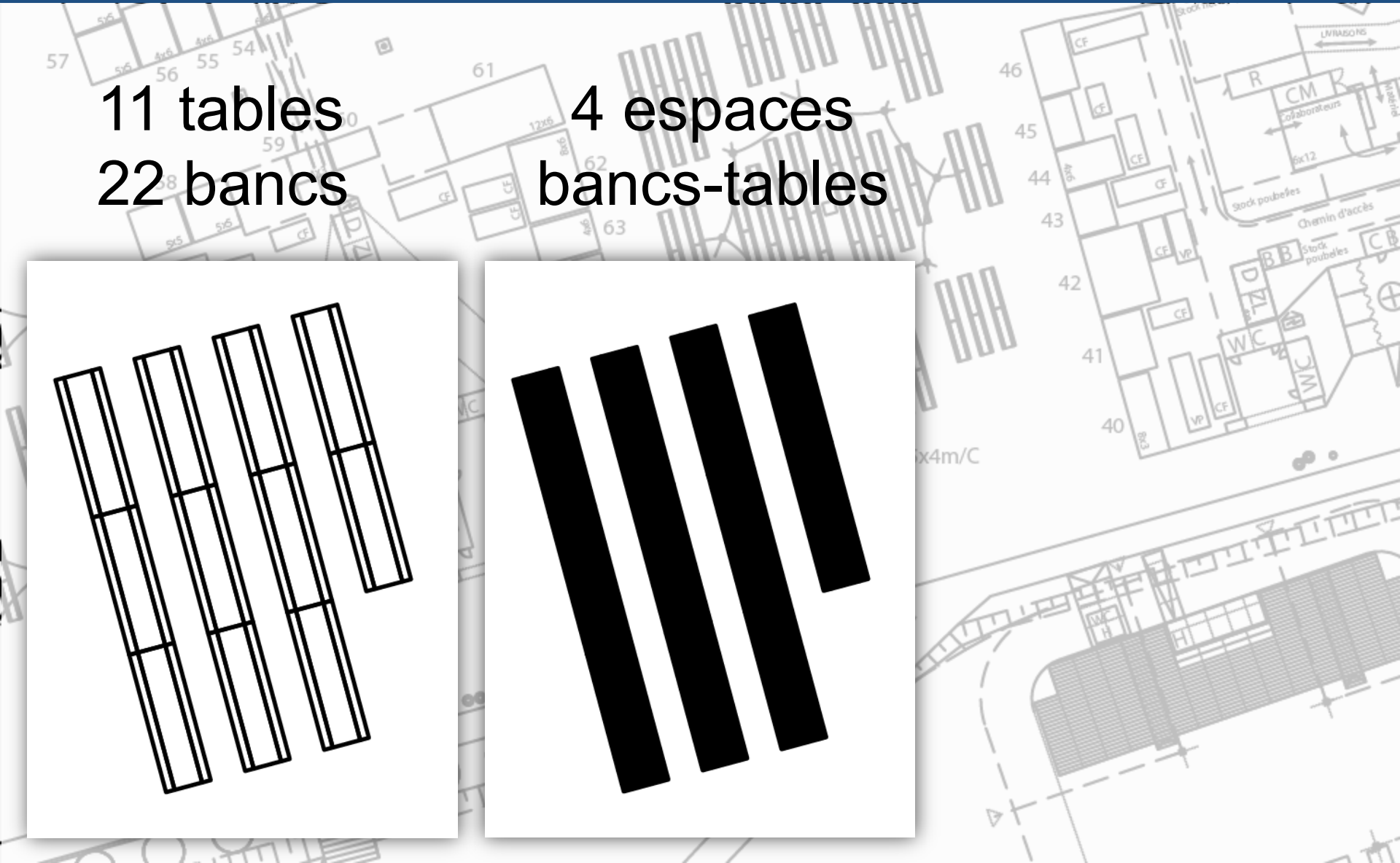
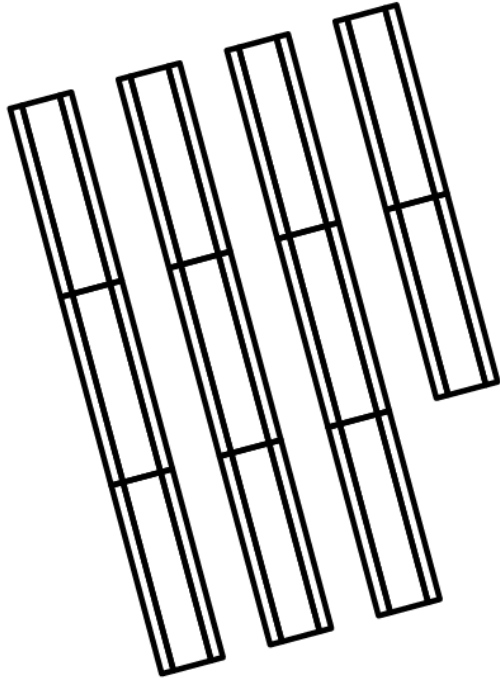
Adieu les détails...



Ça rame! Encore...

11 tables
22 bancs

4 espaces
bancs-tables

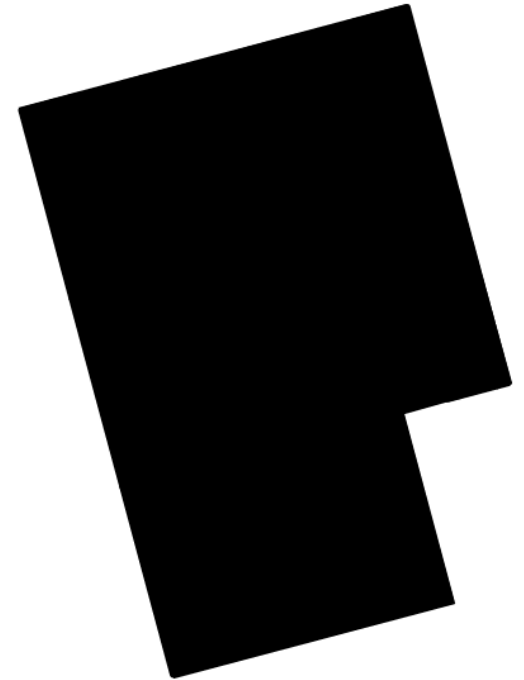
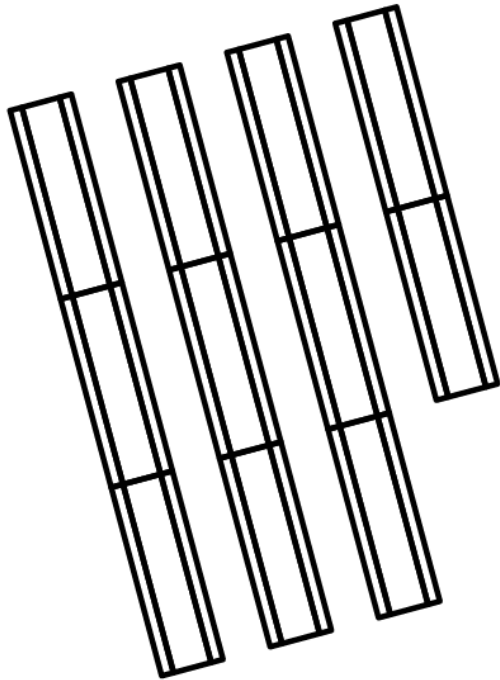


Ça rame! Encore... toujours...

11 tables
22 bancs

4 espaces
bancs-tables

1 zone
places assises



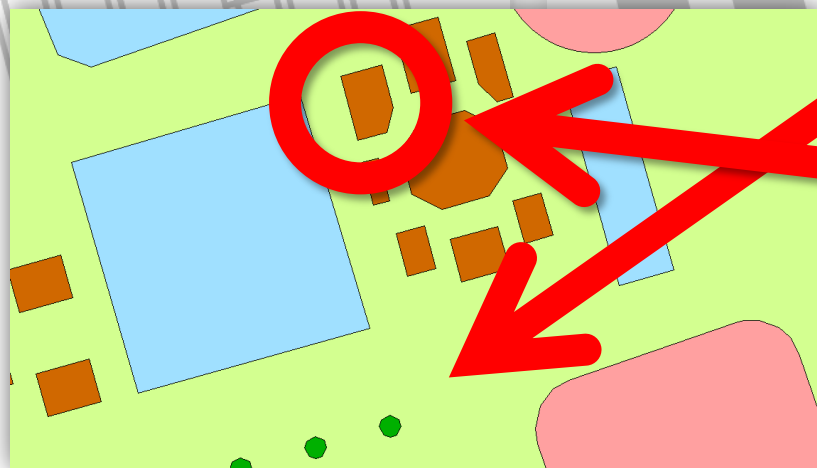
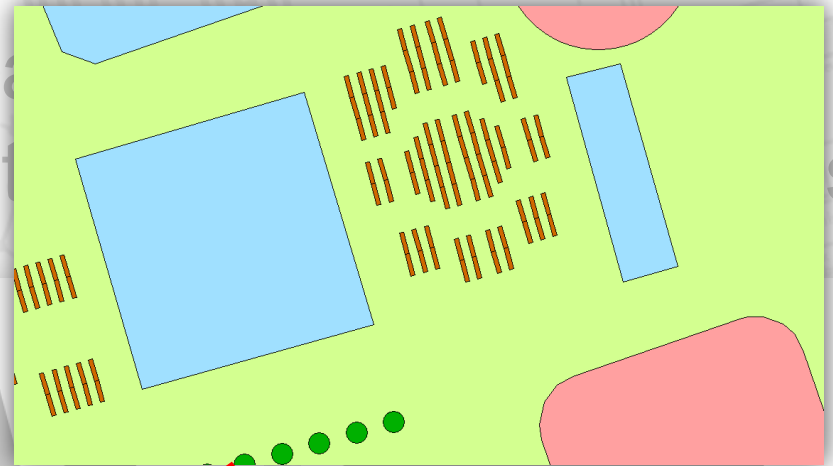
Ça rame! Encore... toujours...

11 tables

22 bancs

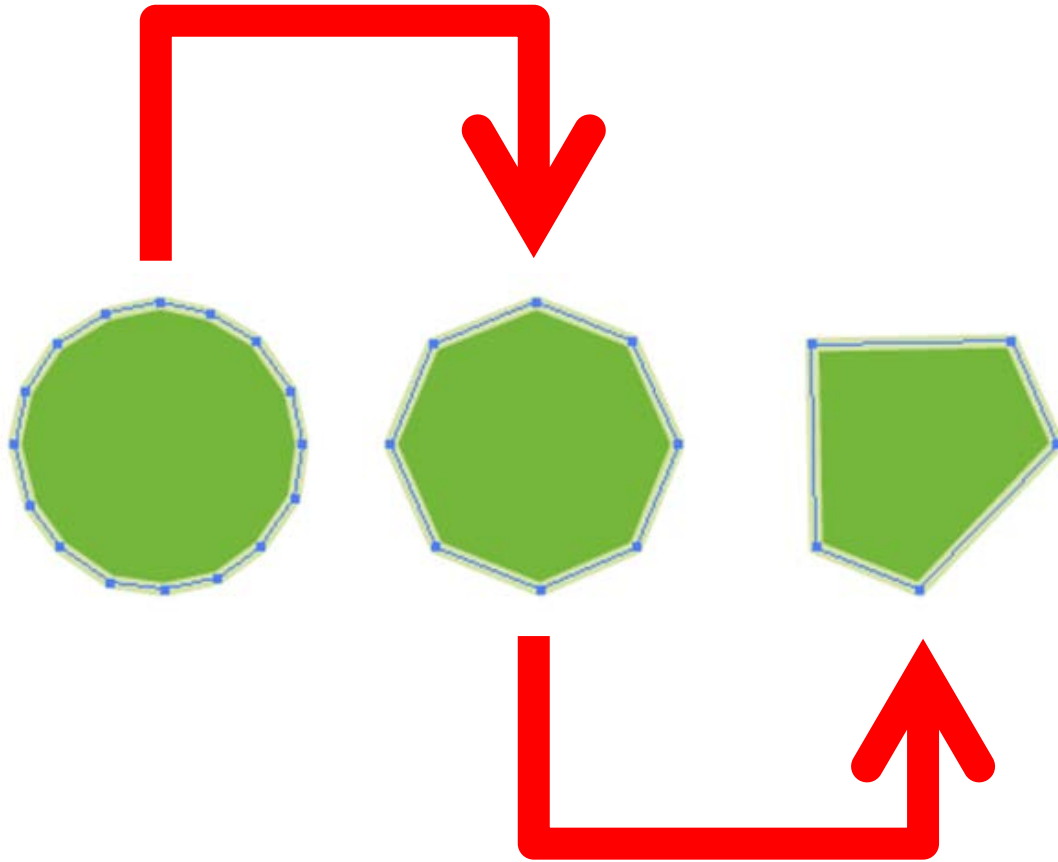
4 espaces

bancs-

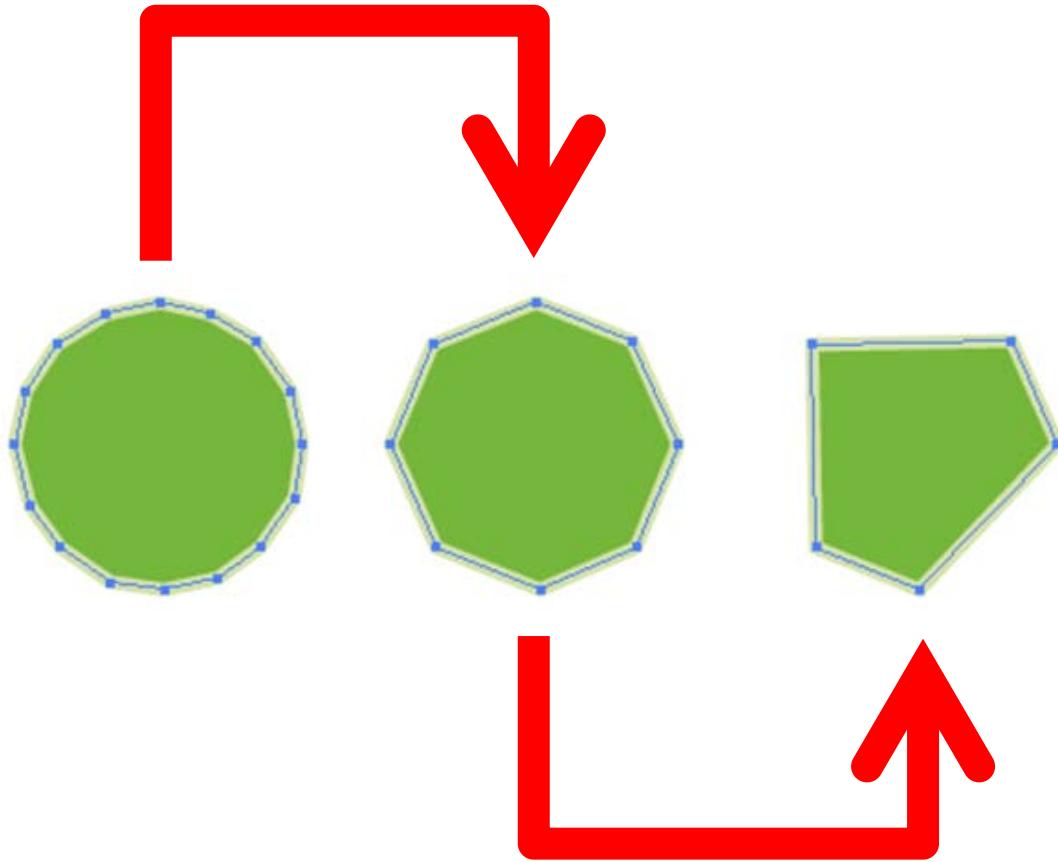


On supprime ...
un arbre sur deux ...

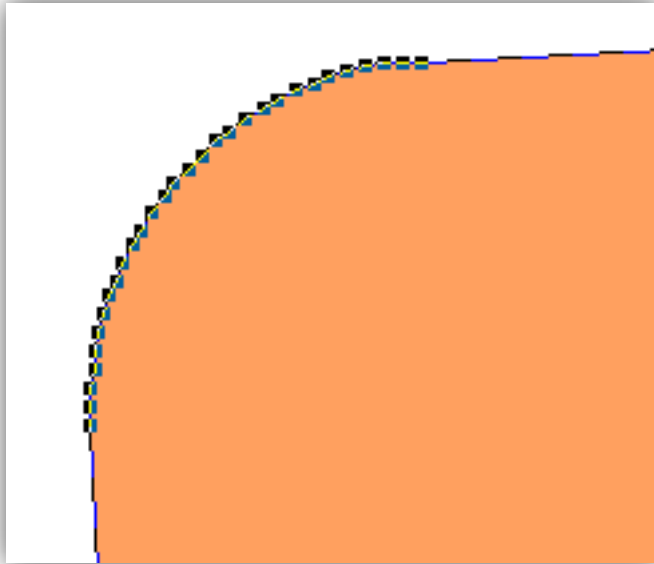
Et on continue...



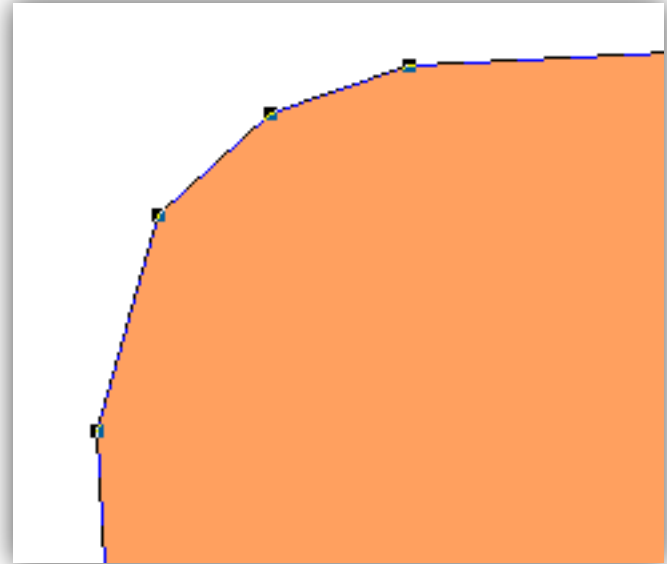
Et on continue... sans succès...



Chaque point compte...







env. 2000 points



env. 500 points



Chaque octet... PNG 8 bits RGBa

24 bits		1'079 octets
32 couleurs		542 octets
24 bits		610 octets
64 couleurs		410 octets

										15'161 octets
										7'318 octets

Ge JSON, un format « bavard »

```
{ "type": "Feature", "geometry": { "type": "Polygon", "coordinates": [[ [ [ 6.21348, 46.406454 ], [ 6.21021, 46.405314 ], [ 6.209536, 46.406187 ], [ 6.212495, 46.407208 ], [ 6.21348, 46.406454 ] ] ] ] }, "properties": { "name": "ParkingArea", "type": "PARKING_POLY", "description": "P14" } },
```

```
{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [ 6.211435, 46.406283 ] }, "properties": { "name": "Parking Area", "type": "PARKING", "description": "P14" } }
```

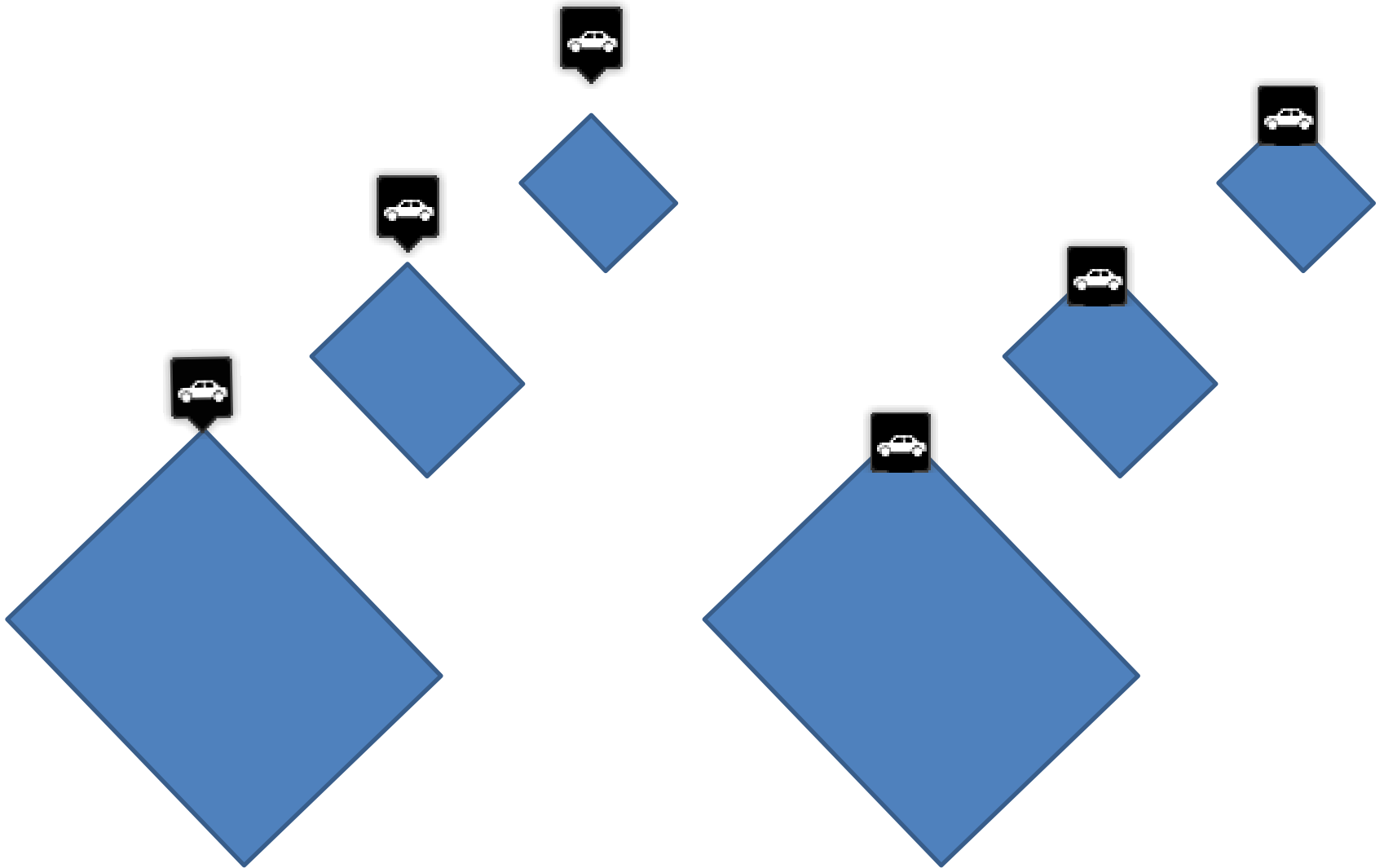
Hum... du 100^{ème} de millimètre:

```
{ "type": "Point", "coordinates": [ 6.211435375173, 46.406283076328 ] }
```

Au mètre près:

```
{ "type": "Point", "coordinates": [ 6.211435, 46.406283 ] }
```


Et autres étourderies...



<http://www.myfest.ch>

myFest@Paléo



myFest@Paléo!

Retrouvez vos amis grâce à la synchronisation facebook.
Envoyez des messages géolocalisés à vos amis.
Retrouvez votre voiture, votre tente, etc...

 **Essayer**
La version Web

 **Télécharger**
sur le Market

 **Télécharger**
sur l'Apple Store

Envie d'en savoir plus sur le projet?
N'hésitez pas à nous contacter à [paleo2010 \[at\] myfest.ch](mailto:paleo2010@myfest.ch)

 Partager |    

<http://www.myfest.ch/carto>



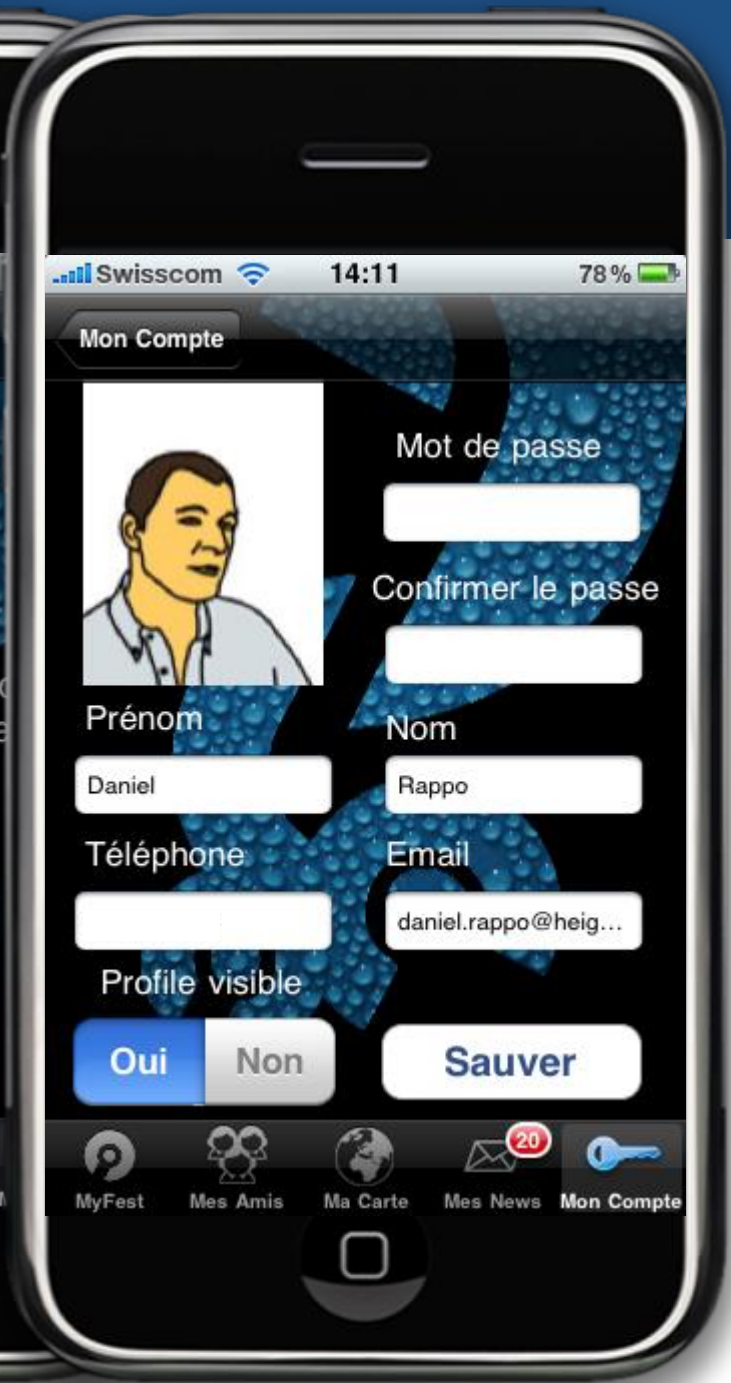
Côté serveur ~ 60 « services »

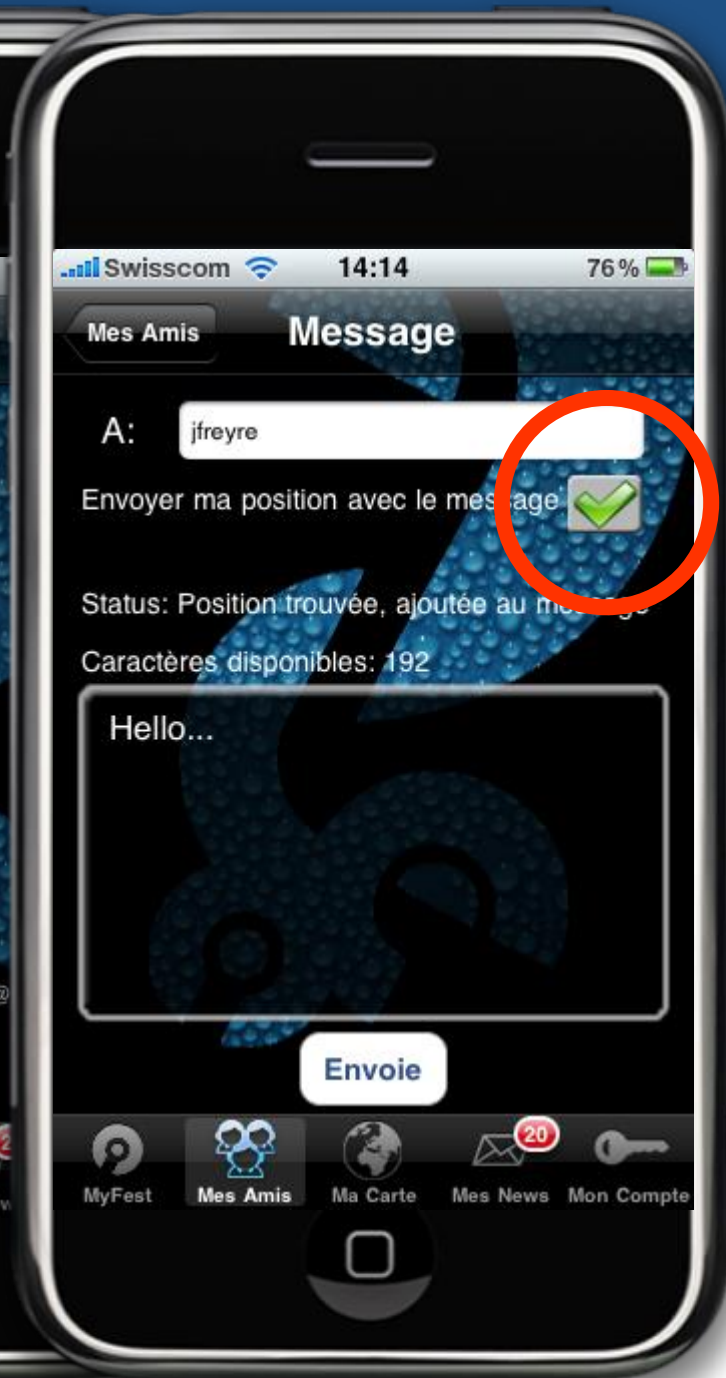
- Authentification (6)
- Amis (16)
- Profil (8)
- Connexion FB (4)
- Notifications (4)
- POIs (6)
- Messages (2)
- Mapping (13)



Off line OK, màj possible...

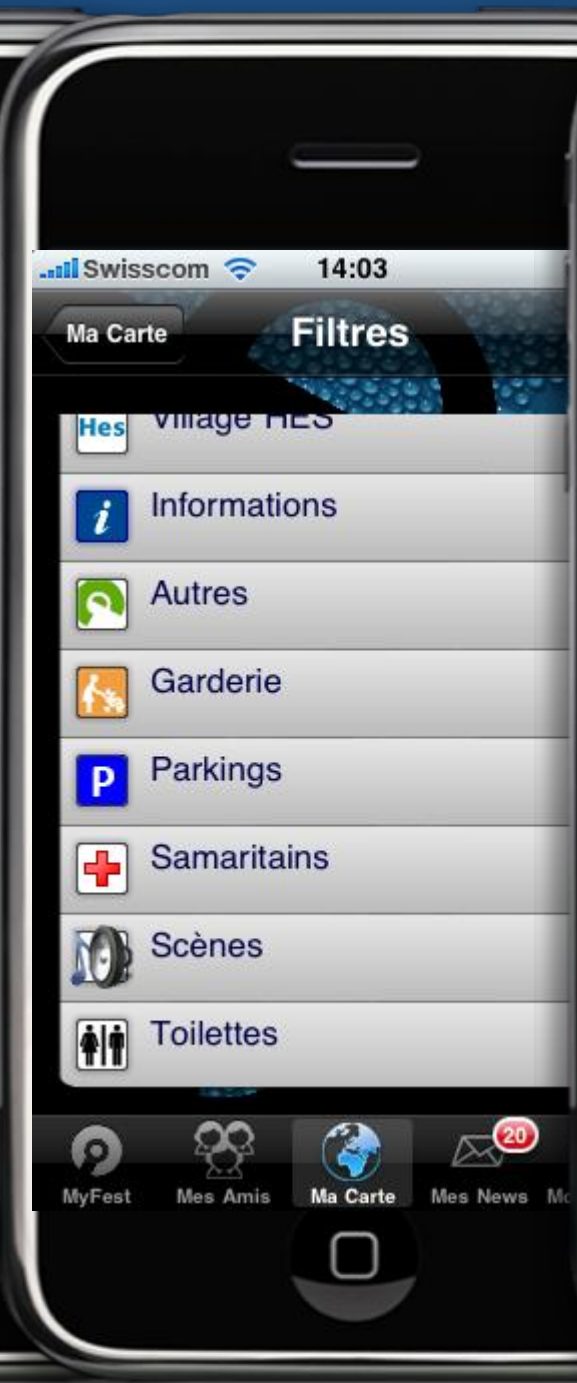






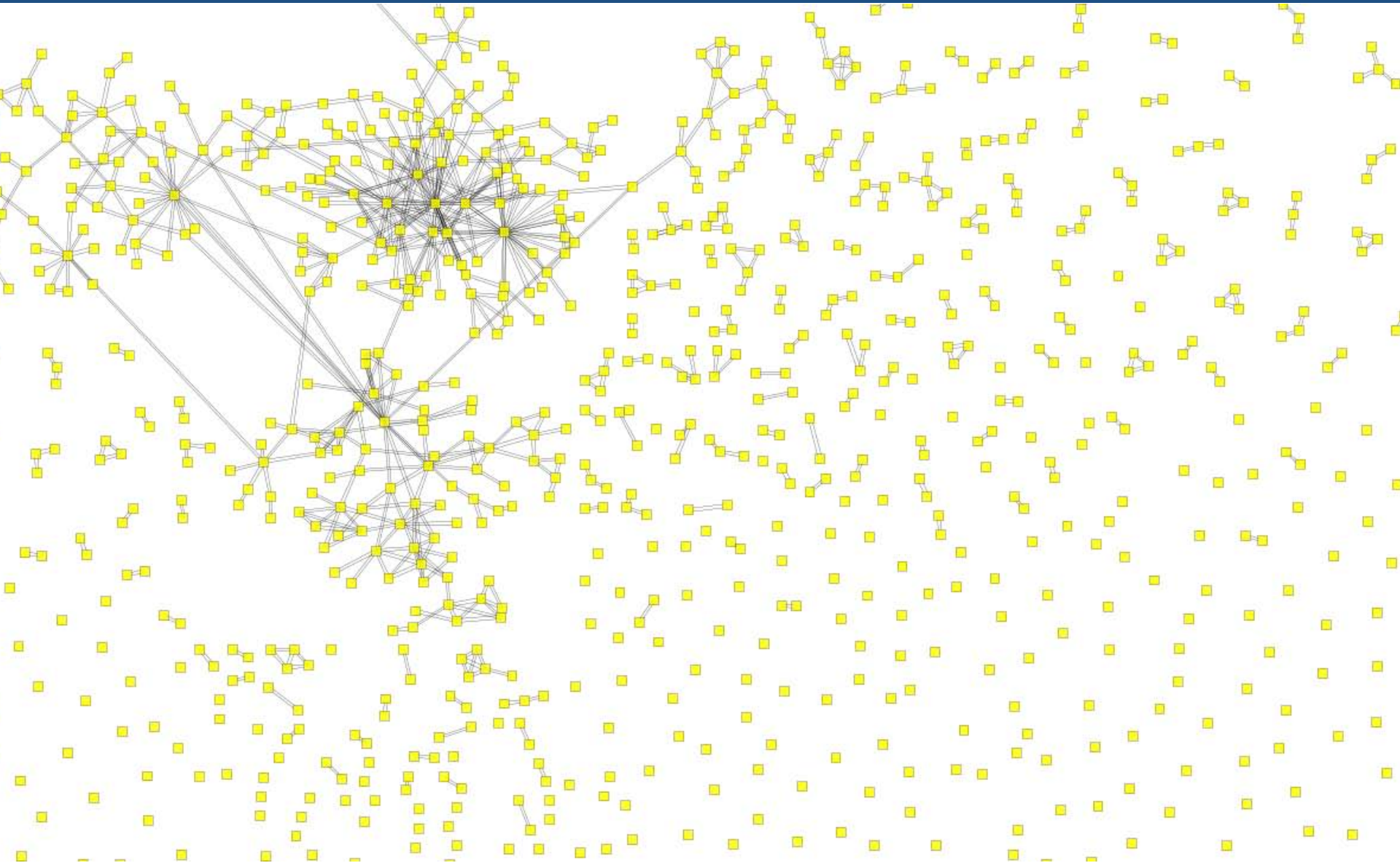








1'294 comptes utilisateurs...



6 jours, 15'000 transferts (3'000 POIs)

