

#### HOW TO HELP USERS TO MOVE TO INSPIRED **PRODUCTS**



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Modèle TN-02.018-1.6







#### Context

#### Context

- 9 By end 2014, France has a national standard for LC/LU based on INSPIRE
- Q IGN has launched production of core data (OCS GE) based on this national standard

In principle, with co-funding by regional authorities

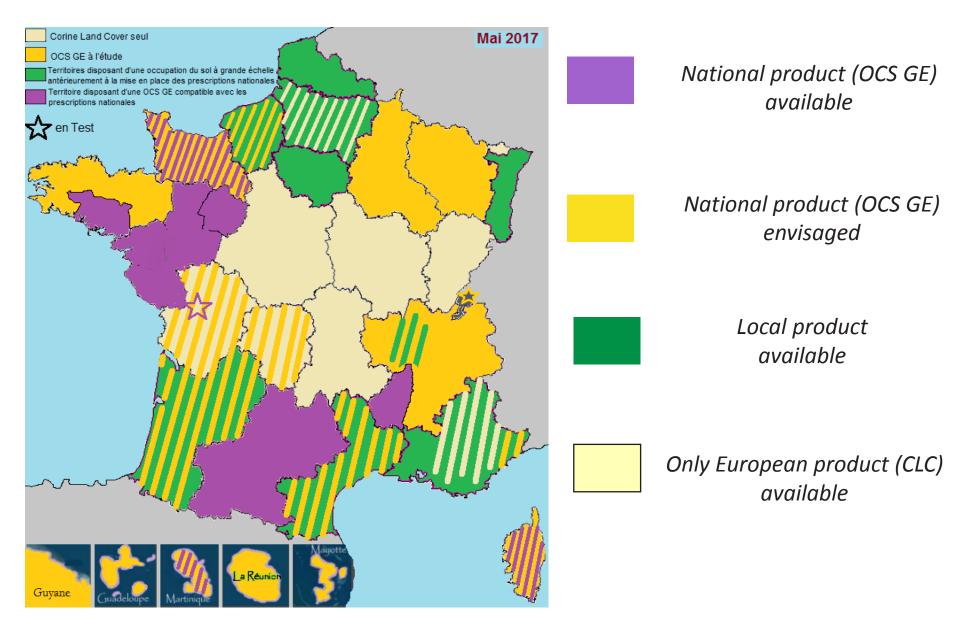
=> INSPIREd product

#### Issue

Q Data not (yet )available on whole territory











## Why this limited success?

## Organisational issues

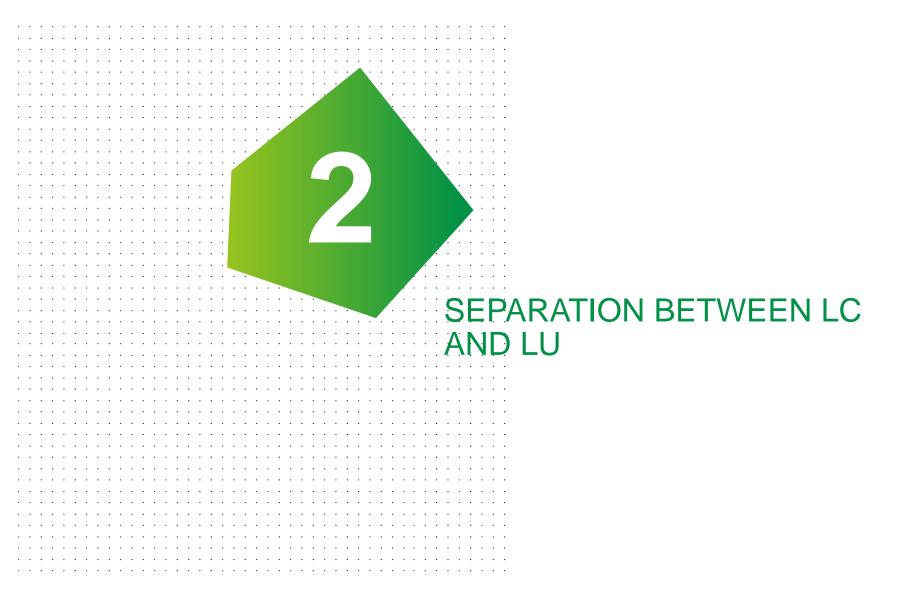
- The national standard is not mandatory; it is only recommendations
- The product (OCS GE) has to be funded by local partners (regions, departments)
- Only some of them have ordered the national product OCS GE

#### Technical issues

To be detailed in the following slides











#### Issue

Most existing products merge LC and LU in a single classification

- => Users accustomed to 1-dimension product
- => But not to a 2-dimensions product
  - separation of LC-LU considered as a difficulty





#### Solution



#### **CNIG** Working Group

- CNIG: National Council for Geographic Information
- Objective: to design, promote and accompany the use of national standard
- First achievements: guidelines (as fiche) to exploit data
  - to compute land take indicator using LC LU
    - LC-LU on same polygon => easy to combine
  - to complement core data (OCS GE) by other data











#### IDENTIFICATION DES ESPACES

#### NATURELS, AGRICOLES, ARTIFICIALISÉS ET URBANISÉS

#### Objet de la fiche

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#### IDENTIFICATION DES ESPACES NATURELS, AGRICOLES, ARTIFICIALISÉS ET URBANISÉS

Partie I, pour les chargés de planification

#### Définition de l'utilisation viole et d'indicateurs associés

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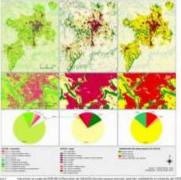
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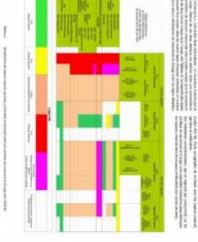
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#### IDENTIFICATION DES ESPACES NATURELS, AGRICOLES, ARTIFICIALISÉS ET URBANISÉS Pertie II, pour les géomuticiens



#### indicateurs complèmentaires pour les espaces urbanisés

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## Fiche example

#### Qualital des indicateurs extraits

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#### Solution

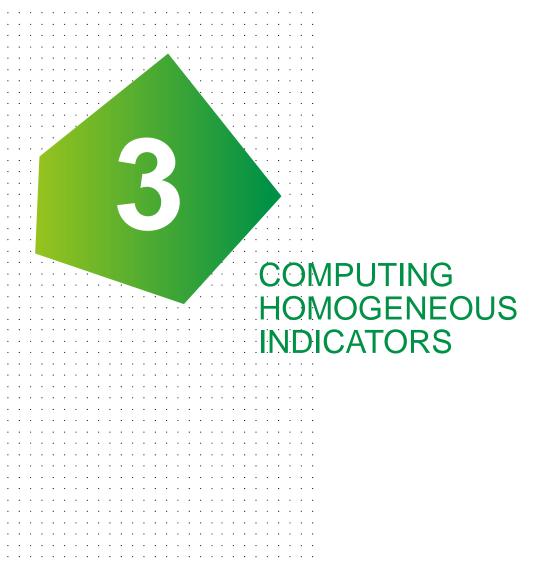


#### **CNIG** Working Group

- First achievements: survey about use of national standard guidelines
  - Stakeholders more aware of the interest to separate LC and LU
  - But issues with the two other dimensions (morphology characteristics)
    - Not implemented by anyone
    - Not clear enough concepts
    - Too complex to deal with 3 or 4 dimensions!











#### Issue

Reporting for European Directives done at MS level using homogeneous European data (CLC, LUCAS)

Reporting for national laws done at regional/local level using:

- Pheterogeneous data (OCS GE not available everywhere)
- Q different methodologies

Heterogeneous indicators

#### Consequences

- **Q** impossible to compare territories
- **Q** unfair: land take indicator has practical impact
- a planned Land Use document may be rejected if non-efficient consumption of land





#### Solution

# Liberté · Égalité · Fraternité RÉPUBLIQUE FRANÇAISE CNIG Conseil national de l'information géographique

## Working Group within CNIG

- Purpose :
- to interview the various stakeholders
- to get some agreement about what should be measured and how
- to get a reasonable set of indicators to fulfil various requirements:
  - Scientific/ politic
  - Generic (whole territory) / specific (local)
  - Macro / micro (phenomena description more or less detailed)





#### Solution



## Working Group within CNIG

- Some ongoing work on a geographic indicator: urban envelop
- Main impact
- Urbanisation inside the envelop: densification



Urbanisation outside the envelop : land take









# COMPUTING RELIABLE INDICATORS ALONG TIME

Requirement for time series





#### Issue

Some regions had already large scale LC-LU data before the national standard was ready

- => Not very willing to adopt new product (OCS GE)
  - **Q** Reluctance to change
  - persons skills and knowledge
  - •many tools, methods developed around the "old" product
  - **Q** Data mainly used to compute evolution indicators
  - need for time series based on persistent data specifications
  - moving to new product => breaking the time series



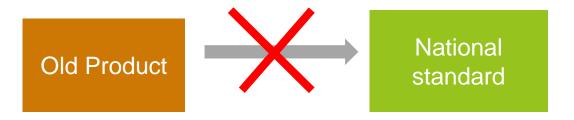


## **Envisaged solution**



#### Working Group within CNIG

- Some test to migrate data
  - Scenario 1 : go on production of old data, derive OCS GE from old product



- 1 dimension to several dimensions data : difficult, not always possible
  - MMU generally more detailed in OCS GE





## **Envisaged solution**



#### Working Group within CNIG

- Some test to migrate data
  - Scenario 2: move to production of new data (OCS GE), derive old product



More detailed classification (local specificities) => issue 5





#### Potential solution



#### National law requiring evolution from 10 years

Initiate the time series with the new product (OCS GE)

order current data (year n)

order old data (year n -10)



Based on national standard

OCS GE (year n) comparison



OCS GE (year n - 10)



First evolution indicator







## COMPUTING RELIABLE INDICATORS ALONG TIME

Dealing with uncertainties





#### Issue

#### What is the reliability of indicators?

- evolutions are relatively small (e.g. 1%)
- there are uncertainties in data
- IGN ensures 98% of semantic accuracy for OCS GE => 2% uncertainties
- **Q** does the indicator measures evolutions?
- or is it completely made meaningless by the data uncertainties?







#### Document uncertainties

- assess the LC-LU data quality
- evaluate risks of confusion
- propagate the uncertainties in the indicator computation
- **Q** publish indicator as : value +/- error estimate
- Q=> get indicator less accurate but more reliable at a given time





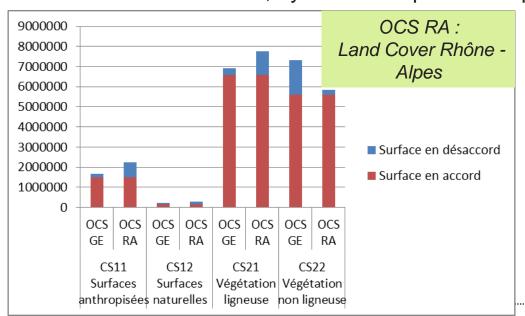
#### **Experience by IGN**



**Q** Comparison between 2 products based on national standard

•OCS GE: by IGN, human photo-interpretation, aerial image

•OCS RA: local OCS, by automatic photo-interpretation, satellite image



Results not so clear: are the 2 products providing similar information?



#### Experience by IGN

- **Q** Get reference data (sample)
- **Q** Get confusion matrix between each of the 2 products and reference data

		Reference Data					
		Water	Forest	Urban	Total		
Classified Data	Water	21	6	0	27		
	Forest	5	31	1	37		
	Urban	7	2	22	31		
	Total	33	39	23	95		







#### Experience by IGN

**Q** Build confidence interval (done on sample in 3 municipalities)

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#### Experience by IGN: conclusions

- The 2 products give significantly different information
- Operation Data content doesn't depend only on specification but also on the production method
- The matrix confusion should be provided to users
- It may help to build indicators with a "reliability interval"

•Be aware if changes in indicators are meaningful (real evolution) or not (uncertainties)







#### Distinguish real changes from error corrections

- **Q** update process and delivery
- phase 1 : data production at reference year n
- Phase 2: use of data (reference year n)
- Users discover errors
- Errors are stored by IGN

No change in the data supplied to users

phase 3: production of new version (year n +/- m) => action!





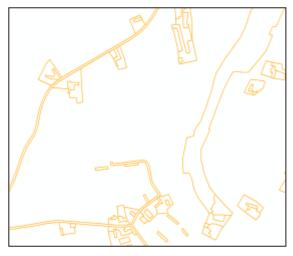
## Potential solution (2): the update package

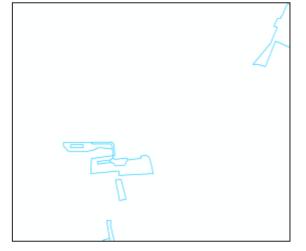




Year A corrected

Difference between year A and year A corrected







Year B

Difference between Years A and B

Layer with years A and B







## Distinguish real changes from error corrections

- next phases : what to do when (in future) more than 2 versions?
- document only the changes /corrections from the previous version?
- or from whole set of versions
  - Useful?
  - Feasible? Exploitable?











#### Issue

## France is a territory with various types of landscapes

- e.g. due to climate :
- Oceanic
- Mountain
- Mediterranean
- Tropical (over-sea territories)
- Specific use cases => need for specific data
- •E.g. More details on some specific LC classes







#### Potential solution

#### Adapt the national standard

- **Q** CNIG working group
- refinement for over-sea territories
- better adaptation

# Adapt the implementation core data in compliancy with of the standard

OCS GE is core data ... that may be enriched by more details

Possible help of IGN
Consulting Unit

QIGN has whole data model in its data base => host more detailed data than just OCS GE







## Main learnings

INSPIREd national standard bring better data but considered as complex, difficult to use (new, separation LC – LU)

- A lot to do to train users
- or to make derived and user-friendly products

We don't make enough benefit of standardised data

national indicators not (yet) standardised

