

# INSPIRE Thematic Cluster on Land Cover and Land Use & Feedback from implementers



The screenshot shows the website for INSPIRE Thematic Clusters. At the top left is the INSPIRE logo, followed by the title "INSPIRE Thematic Clusters" and a search bar. Below the header is a navigation menu with "News", "Events", "Categories", "Clusters", and "More >". On the right side of the header, there are links for "Log in / Register".

The main content area is divided into several sections:

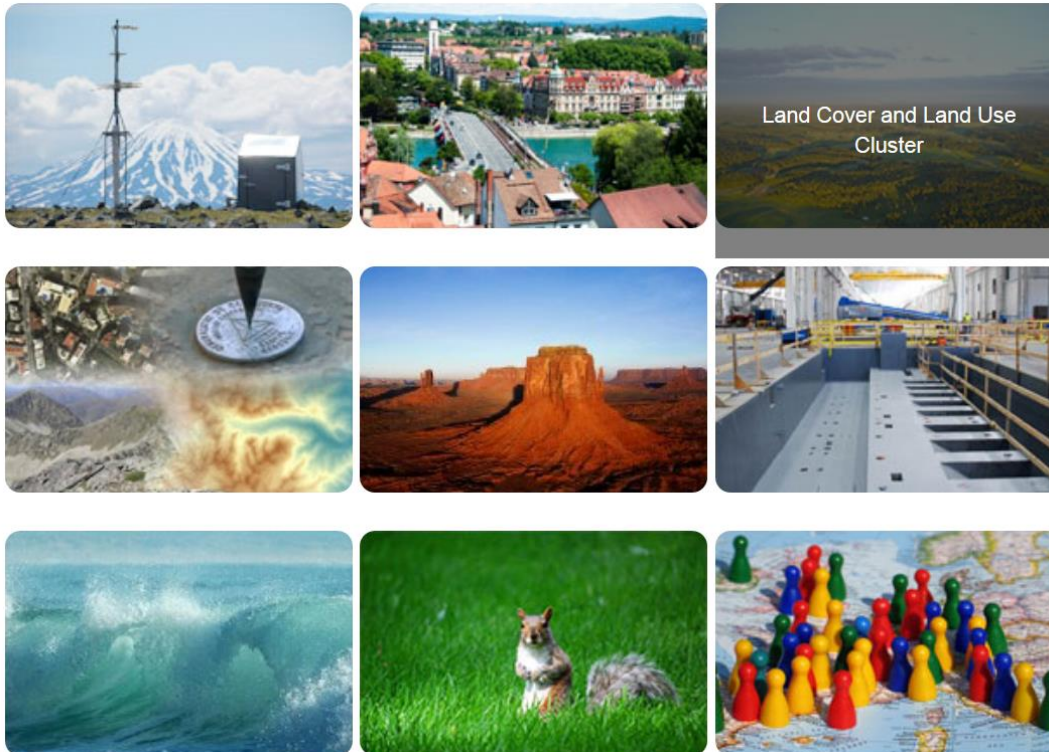
- About the INSPIRE Thematic Clusters Platform:** A grid of nine images showing various landscapes and infrastructure, including a power line tower, a coastal town, a field, a map, a desert landscape, a water treatment facility, a beach, a rabbit, and colorful pushpins on a map.
- Tag cloud:** A section for tags, currently empty.
- INSPIRE on Twitter:** A tweet from GEO NEXT (@Geonieuws) dated 1 Mar, mentioning an interview with Cees Moons about the INSPIRE news letter. The tweet includes a link and the hashtag #GEO.
- INSPIRE Website:** A blue button with the text "INSPIRE Website".
- INSPIRE Forum:** A button with the INSPIRE logo and the word "FORUM".
- INSPIRE GeoPortal:** A blue button with the text "INSPIRE GeoPortal".
- INSPIRE Conference 2015:** A red button with the text "INSPIRE Conference 2015".
- News:** A section for news, currently empty.
- Thematic Clusters names and themes:** A section for names and themes, currently empty.
- Cross group discussions:** A section for discussions, currently empty.

Lena Hallin-Pihlatie  
Facilitator of the LC and  
LU Thematic Cluster

[www.jrc.ec.europa.eu](http://www.jrc.ec.europa.eu)

*Serving society  
Stimulating innovation  
Supporting legislation*

# INSPIRE Thematic Cluster Platform



Since 12/2014  
to support implementation

9 Thematic Clusters

1 Sub-Group per  
INSPIRE Theme (34)

Nine facilitators



<https://themes.jrc.ec.europa.eu/>

# LCLU Cluster: Group Statistics

- LC and LU cluster group level

- **140 Members**
- 20 Discussion topics
- **15 Uploaded files**
- **8 Pages**
- **12 News**
- **2 Newsletters**



- LC sub-group



- 52 Members
- **21 Discussion topics**
- **76 Discussion replies**
- 2 Uploaded files
- 0 Pages
- 0 News

- LU sub-group



- 48 Members
- 11 Discussion topics
- 25 Discussion replies
- 1 Uploaded file
- 14 Pages
- 0 News

# Content highlights: Implementation examples

- Sample data
  - **Land Cover Vector GML** [example 1](#) (Best Practice), [example 2](#) and [example 3](#)
  - **Existing Land Use GML** [example](#)
  - **Land Cover Vector ESRI** database template populated with CLC data, ArcGIS for INSPIRE, [example](#)
- Matching tables
  - Filled in Matching tables where **Corine Land Cover** and **Urban Atlas** data have been mapped to Land Cover Vector application schema
- Links to WMS and WFS providing LC and LU (harmonised) datasets

# Content highlights: Reported LCLU data

- Excel file covering datasets reported in the Land Cover and Land Use themes compiled based on INSPIRE Monitoring and Reporting in 2014

- **Land Cover: N = 441**

- Corine Land Cover
- Topographic maps
- Forestry data
- LPIS
- ETC.

- **Land Use: N = 836**

- Corine Land Cover
- LPIS
- Topographic maps
- Forestry data
- Spatial plans
- ETC.

	A	B	C
1	<b>Country</b>	<b>Responsible authority</b>	<b>Spatial Dataset</b>
2	Austria	BEV	Digitale Kartographische Vektormodelle - Walc
3	Austria	UBA	CORINE Landcover 2006 (ID 162)
4	Austria	UBA	LISA - Land Information System Austria (ID 910)
5	Belgium	ANB	Bosreferentielaag (Boskartering van Vlaandere
6	Belgium	AGIV	Bodembedekkingsbestand, opname 2001
7	Belgium	IGNB	Corine Land Cover Belgium 2006
8	Belgium	IGNB	Top10Vector
9	Belgium	IGNB	Top50Vector
10	Belgium	IGNB	Top250v-GIS
11	Belgium	IBGE-BIM	Réseau hydrographique
12	Belgium	IBGE-BIM	Masses d'eau de surface
13	Belgium	IBGE-BIM	Espaces verts publics
14	Belgium	CIRB-CIBG	Zones de chemin de fer
15	Belgium	CIRB-CIBG	Espaces verts
16	Belgium	CIRB-CIBG	Zones d'eau
17	Belgium	CIRB-CIBG	Tunnels du métro
18	Belgium	CIRB-CIBG	Ilot
19	Belgium	SPW	Carte d'occupation du sol en Wallonie (BDREF_
20	Bulgaria	Agency of Geodesy, Cartography a	Base maps Earth Cover
21	Bulgaria	Executive Environment Agency	CORINE Land Cover
22	Bulgaria	Executive Agency on Forests	Forestry data sets for the region of Bourgas
23	Bulgaria	Executive Agency on Forests	Forestry data sets for the region of Sliven
24	Bulgaria	Executive Agency on Forests	Forestry data sets for the region of Stara Zagora
25	Bulgaria	Executive Agency on Forests	Forestry data sets for the region of Kardjali
26	Bulgaria	Executive Agency on Forests	Forestry data sets for the region of Smolyan
27	Bulgaria	Executive Agency on Forests	Forestry data sets for the region of Plovdiv

# Feedback from implementers/facilitator

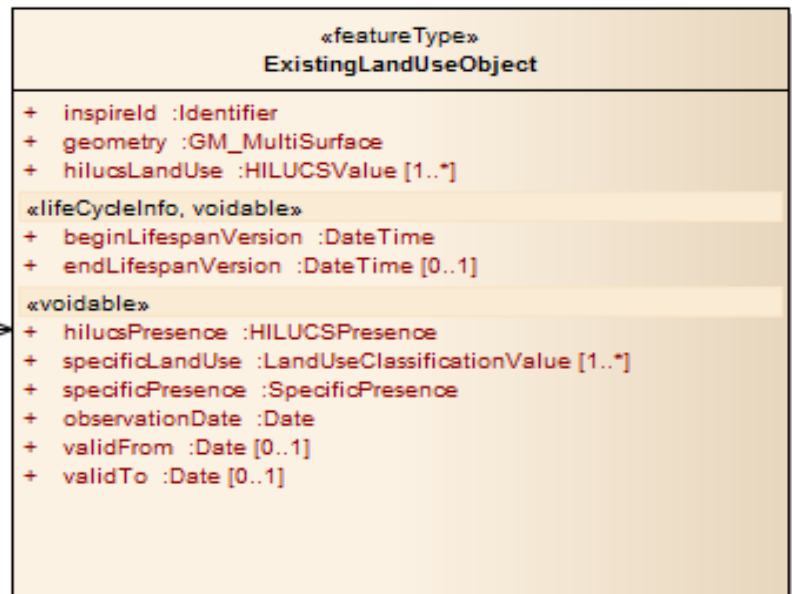
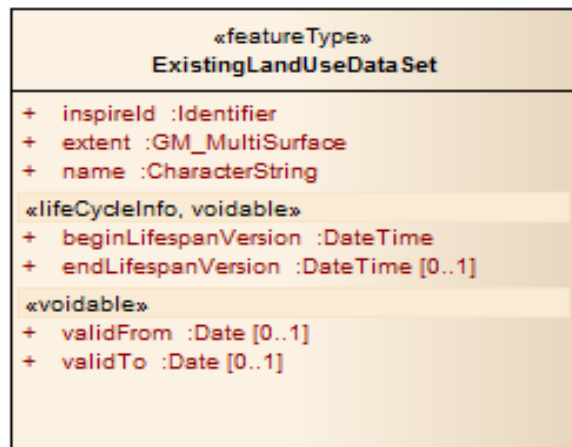
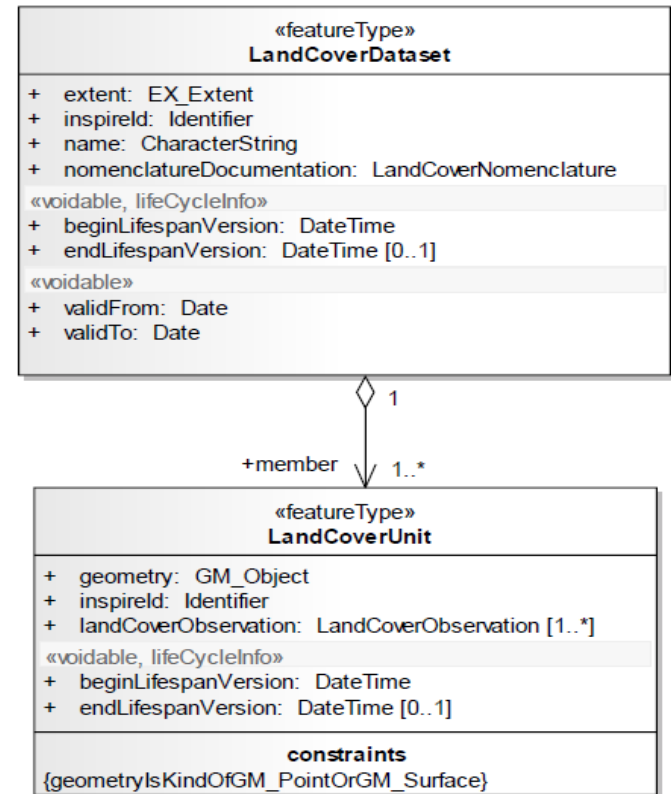
- **How to deal with duality?** LCLU datasets usually contain both LC and LU information. For example the Land Parcel Identification System (LPIS) is reported as a LC in some countries and as LU in other. Both are correct -> problematic for interoperability (eg. use of HILUCS in LU).
- **What are the options to improve the situation?**
  - Option 1: Report and provide datasets both according to LU and according to LC application schemas.
  - Option 2: Reach a community agreement
  - Option 3: Linkage of LC and LU information to the same spatial objects. Develop INSPIRE to support this?

# Feedback from implementers/facilitator

- **Can something be done with the problematic association role in the LC theme?**
- The Association role: 'Member' exist in both LC and LU, but it has been modelled (UML -> xsd) differently
- LCDataset and LCUnit – weak aggregation
  - Difficult to be Inspire-compliant and still achieve a working solution for the provision of GML from a Web Feature Service (WFS)
  - Not a client-friendly solution
- **What are the options?**
  - Option 1: To change the LC Vector UML model, so that the 'Member of association role is defined the same ways in the LC and LU xsd:s?
  - Option 2: To make a simpler implementation schema based on simple features for inclusion in the TG and to get it endorsed by MIG.

# Association role in LC versus LU

class LandCoverCoreVec...





# List of selected issues 1/2

- LandCoverExtension application schema is missing
  - Need for an application schema that supports the use of several nomenclatures also for LU?
- INSPIRE Coverage extensions problematic for clients
  - Need for alterations for the grid/raster models of LC and LU?
- The embeddedDescription of the allows the use of ISO LCML to describe the LC classification used
  - No schema/namespace to point at from the LC nomenclature application schema -> cannot be used
  - Any news from the ISO community?
- Software-specific issues reported for provision (HALE, FME, GeoServer) + lack of client support (QGIS, ArcGIS)
  - Some improved, other pending

## List of selected issues 2/2

- Need to provide a (refined) Pure Land Cover Components code list?
  - TG LC Annex H (2013)
- Provision of Extent information by GM\_MultiSurface or EX\_Extent in a consistent way?
- Should the provision on GM\_MultiSurface also be allowed in LC?
  - Now only GM\_Surface and GM\_Point
- Need for simplifications?
  - Concerning data models or something else?

# Change proposals

- Collected by facilitators in 2015
  - Based on thematic cluster discussions and feedback from projects
  - The most mature ones have been elaborated into corrigendum documents
- Provided by MS by mid-September 2017
  - Decision on how to proceed will take place in December



# INSPIRE Thematic Clusters

News Events Pages Dashboard Clusters More »



Account »

Groups > Land Cover and Land Use Cluster

## Land Cover and Land Use Cluster

Image Owner Credit



### Description:

This is an open group for people involved and interested in the INSPIRE Cluster Land Cover and Land Use. Please use this group for discussions which are common to both themes within the cluster (Land Cover, Land Use). For discussions focused just on one of these themes, please use the sub-groups created for such purpose:



**Owner:** [Lena Hallin-Pihlatie](#)  
Group members: 83  
[Open group](#)

In order to join the group or related sub-groups please use [the ECAS platform](#) and be logged on to the common ECAS account.

### Access to Cluster's content

- [Group pages](#)
- [Group discussion](#)



Notifications

Settings

Log out

Groups > Land Cover and Land Use Cluster > Land Cover

## Land Cover

Join group

Image Owner Credit



**Owner:** [Lena Hallin-Pihlatie](#)  
Group members: 25  
[Open group](#)

### Description:

This is an open sub-group for people (data providers, implementers and users) involved and interested in the INSPIRE **Land Cover theme** - within the INSPIRE Thematic Cluster of Land Cover and Land Use.

Please **use this sub-group** to share resources and have discussions which are specific and focused just on the INSPIRE Land Cover theme.

For cross-thematic activities, which are related both to the Land Cover and the Land Use themes, please use the common [Land Cover and Land Use Cluster group](#) created for such purpose.

**Brief description:** Join this sub-group to share your knowledge, learn and collaborate in solving issues related to the Land Cover theme

# Questions? <https://themes.jrc.ec.europa.eu/>

