



ELF EUROPEAN
LOCATION
FRAMEWORK

ELF modelling guidelines

Presentation to: Workshop on INSPIRE extension

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European Location Framework

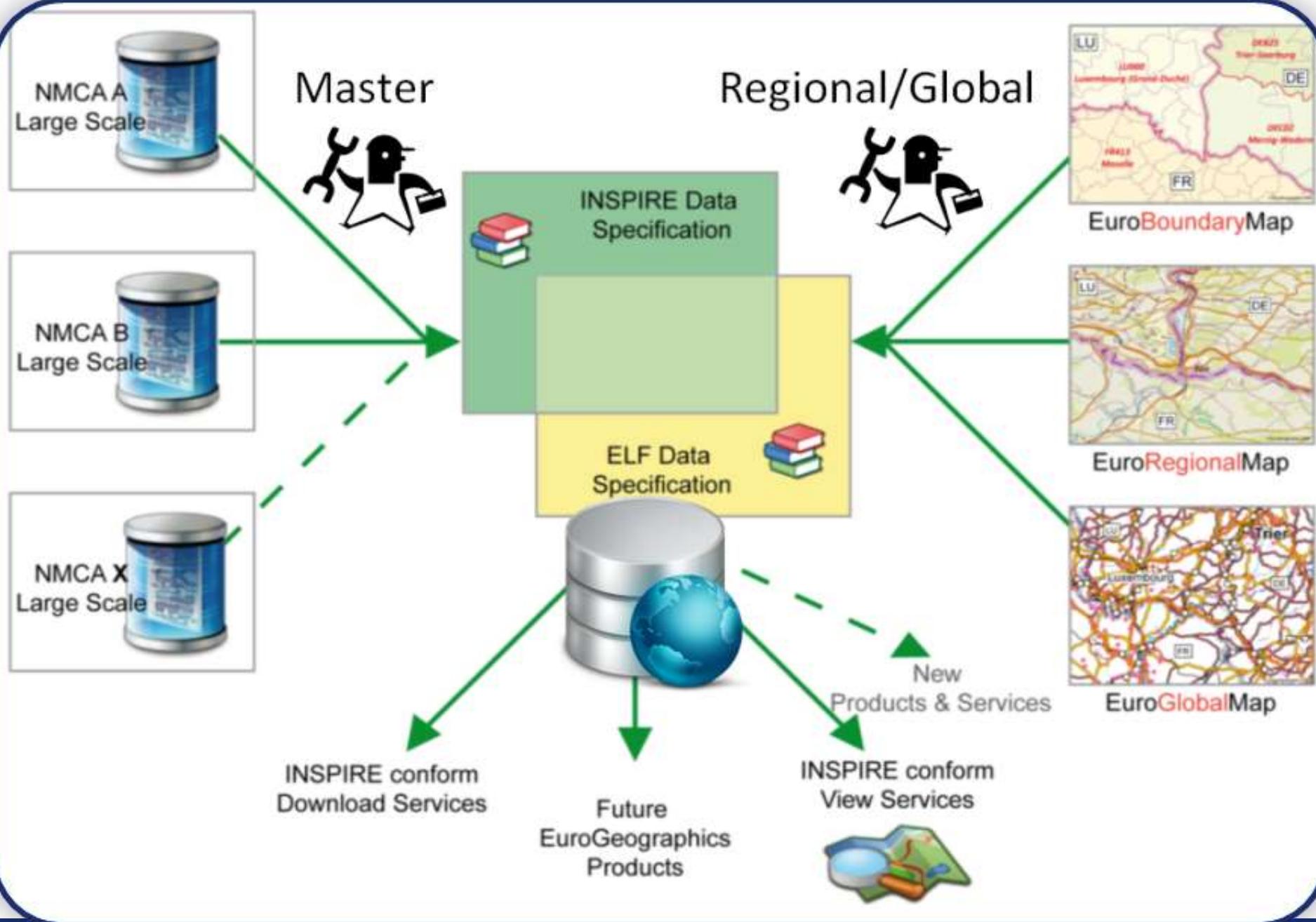
ELF delivers authoritative, interoperable, cross-border reference data

- ★ Seamless and consistent across borders enabling spatial analysis in a global, European and regional cross-border context;
 - ★ Consistent between themes, so that different themes can be used together;
 - ★ Consistent between resolutions, so that a feature present on national level is present at European regional and global level if it should be present according to selection criteria;
 - ★ Up-to-date, maintained and quality ensured enabling users to meet their requirements.
- **Be clear about what NMCAs provide**





ELF WP2 – Modelling guidelines



ELF UML modelling principles

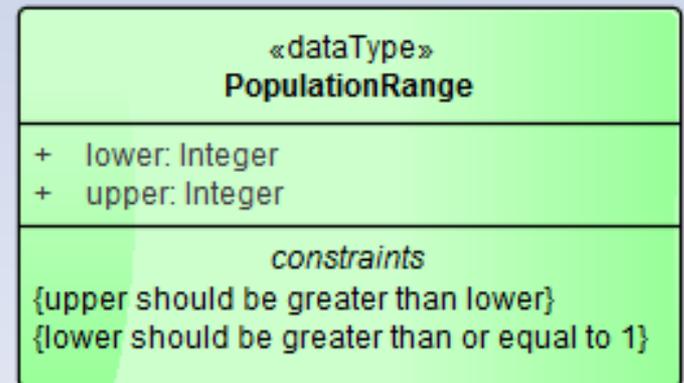
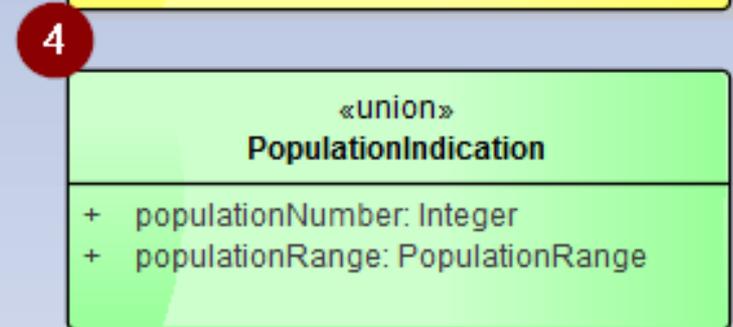
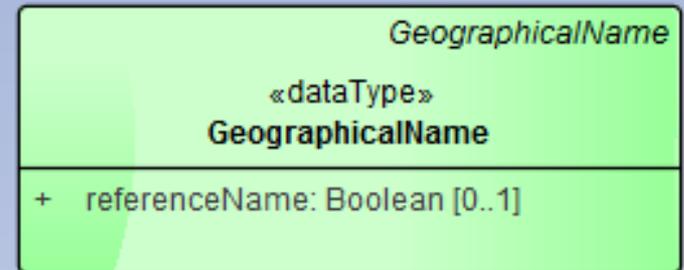
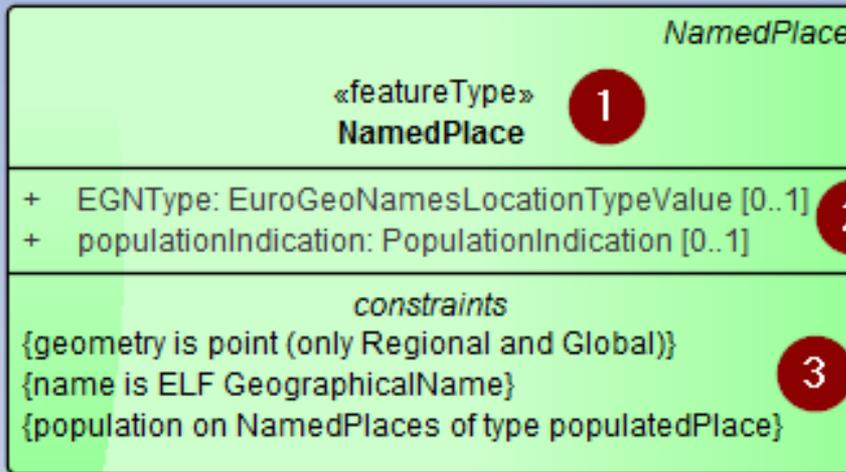
Extensions shall not

- Change the specification but normatively reference it with all its requirements
- Set any additional requirements that break any requirement of the INSPIRE data specification
- Add concepts that overlap with existing INSPIRE concepts
- Make a pure INSPIRE implementation non-conformant to the ELF specifications

ELF UML modelling principles

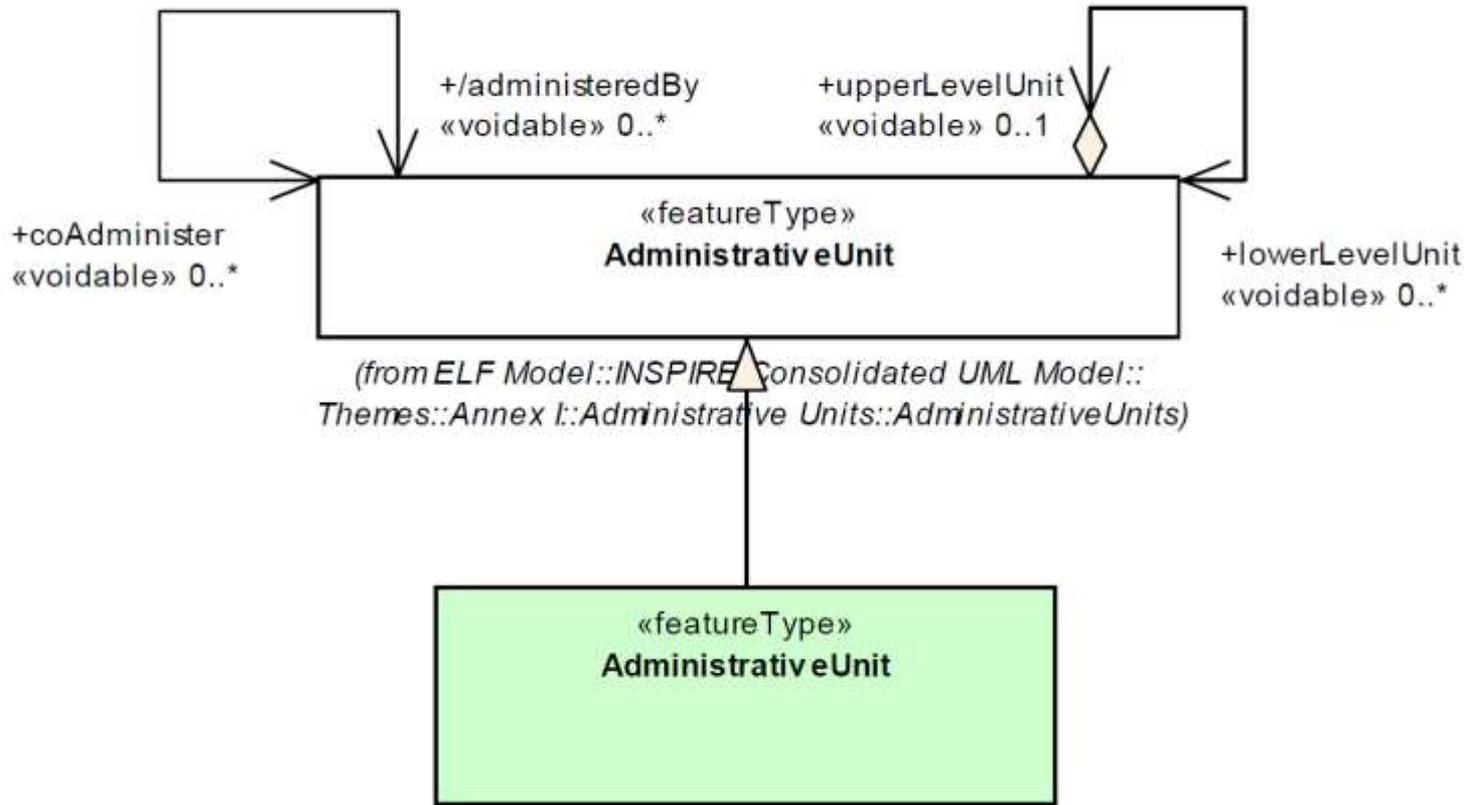
Extensions may

- Add new application schemas importing INSPIRE or other schemas as needed
- Add new types and constraints in the new application schemas
- extend INSPIRE code lists if not centrally managed

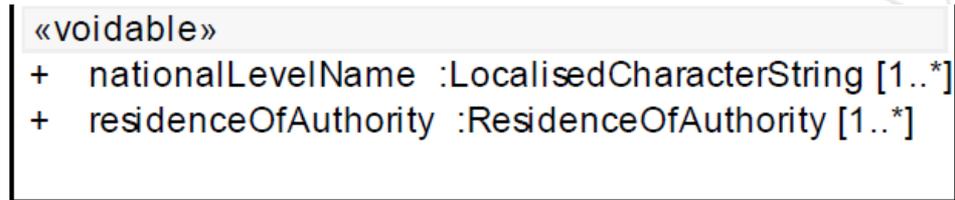


1. Subtype all INSPIRE feature types valid for ELF
2. Define additional attributes
3. Add constraints
4. Define new UML classifiers (feature types, datatypes, codelists)
5. Associate feature types (not in figure)

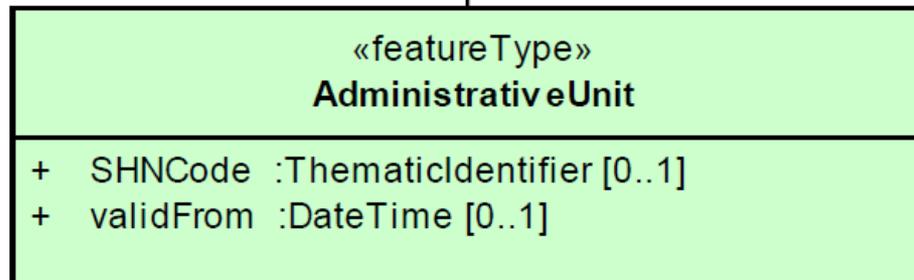
Subtyping of UML classifiers in INSPIRE



Defining additional attributes



(from ELF Model::INSPIRE Consolidated UML Model:: Themes::Annex I::Administrative Units::AdministrativeUnits)



Adding constraints

- + mostDetailedView
- + relatedSpatialOb
- + type :NamedPla

+ populationN

{geometryIsPoi
{populationNum

Class : NamedPlace

- [-] Properties
 - General
 - Details
 - Templates
 - Advanced
 - Tagged Values
- [-] Rules
 - Requirements
 - Constraints
 - Scenarios
- [-] Related
 - Files
 - Links

Constraint:

populationNumberPopulatedPlace

Type: OCL

Status: Approved

B I U A

```
/* populationNumber must be present if the type of the NamedPlace is populatedPlace. */
inv: self.type->forAll(t | t = NamedPlaceTypeValue::populatedPlace implies populationNumber->notEmpty())
```

Defined Constraints

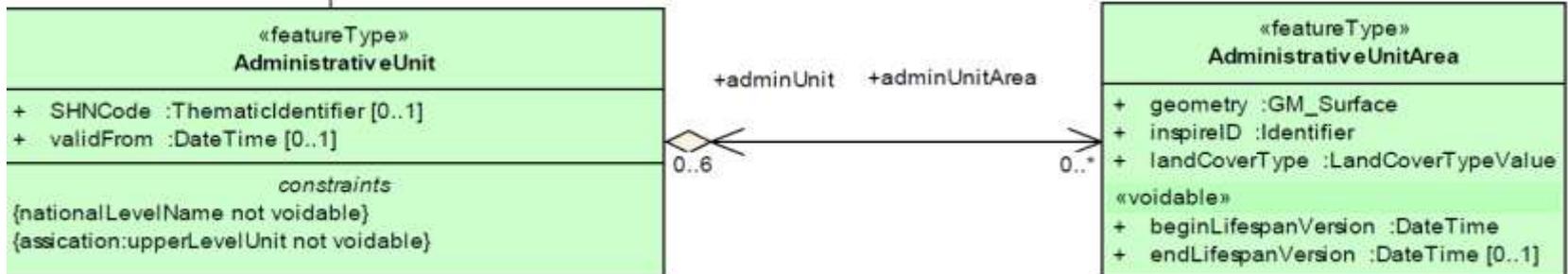
Constraint	Type	Status
geometryIsPointOrSurface	OCL	Approved
populationNumberPopulatedPlace	OCL	Approved

New
Save
Delete

Defining new ELF classes



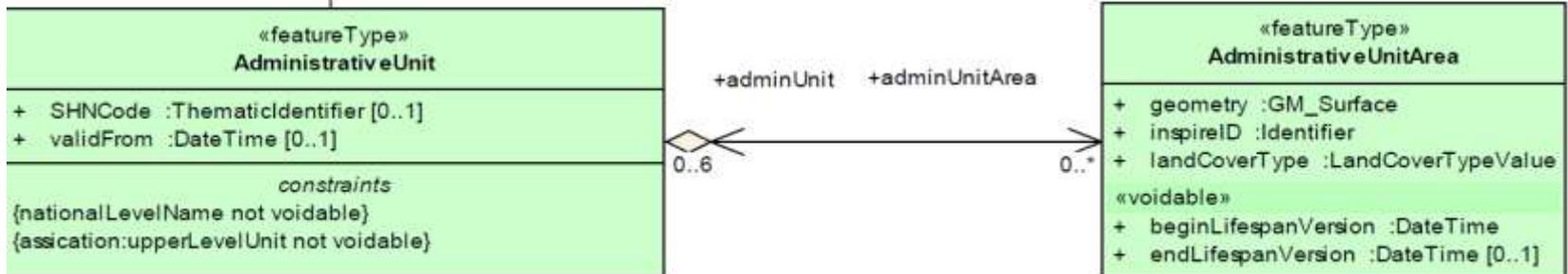
(from ELF Model::INSPIRE Consolidated UML Model::Themes::Annex I::Administrative Units::AdministrativeUnits)



Defining new associations



(from ELF Model::INSPIRE Consolidated UML Model::
Themes::Annex I::Administrative Units::AdministrativeUnits)



Additional tagged values

suppress

Subtypes that are only created in the ELF application schemas to include an INSPIRE feature type in an ELF data specification and/or to attach a constraint will be suppressed in the GML application schemas as these modelling constructs are not relevant for the XML encoding). This tagged values can be assigned to feature types.

To signal this behaviour to the process deriving the GML application schemas for ELF, a tagged value "suppress" with the value "true" is set for these classes. In the ShapeChange configuration for derivation of the XML Schemas, the encoding rules needs to include the conversion rule "rule-xsd-cls-suppress". See <http://shapechange.net/targets/xsd/extensions/#rule-xsd-cls-suppress>.

profiles

Associates a model element specified in an ELF application schema package to an ELF specification. This tagged values can be assigned to classes, attributes (including enumerated values) and association roles.

For example:

```
class AdministrativeBoundary: profiles=MasterLoD1,MasterLoD2
class AdministrativeUnit: profiles=MasterLoD1,MasterLoD2,Regional,Global
attribute SHNcode: profiles=MasterLoD1,MasterLoD2
role adminUnitArea: profiles=MasterLoD1,MasterLoD2,Regional,Global
```

For more information...

... see <http://elfproject.eu/documentation/specification/elf-data-model>