The European Commission's science and knowledge service

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# CAP and INSPIRE: history, perspectives and challenges


## Katalin Tóth


**Eurogeographics INSPIRE extension workshop**

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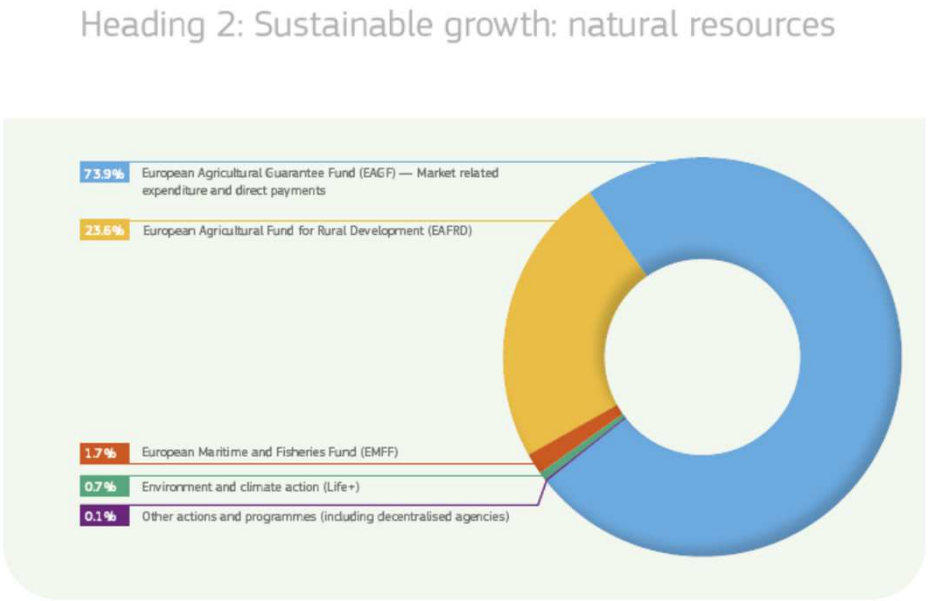
European Commission

# Outline

1. Some facts about the Common Agricultural policy
2. Spatial information for supporting IACS
3. Where CAP and INSPIRE (do not) meet
4. IACS as INSPIRE extension?
5. Perspectives

# 1. Some facts about CAP



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# Objectives

- Launched in 1962
- Is a **partnership between agriculture and society**
- Its main aims are:
  - To improve agricultural productivity,
  - To Ensure a stable supply of affordable food
  - To ensure that EU farmers can make a reasonable living.
  - Food security (feed a world population of 9 billion people in 2050),
  - Climate change and sustainable management of natural resources,
  - Looking after the countryside across the EU and keeping the rural economy alive.

New objectives after 50 years – reform

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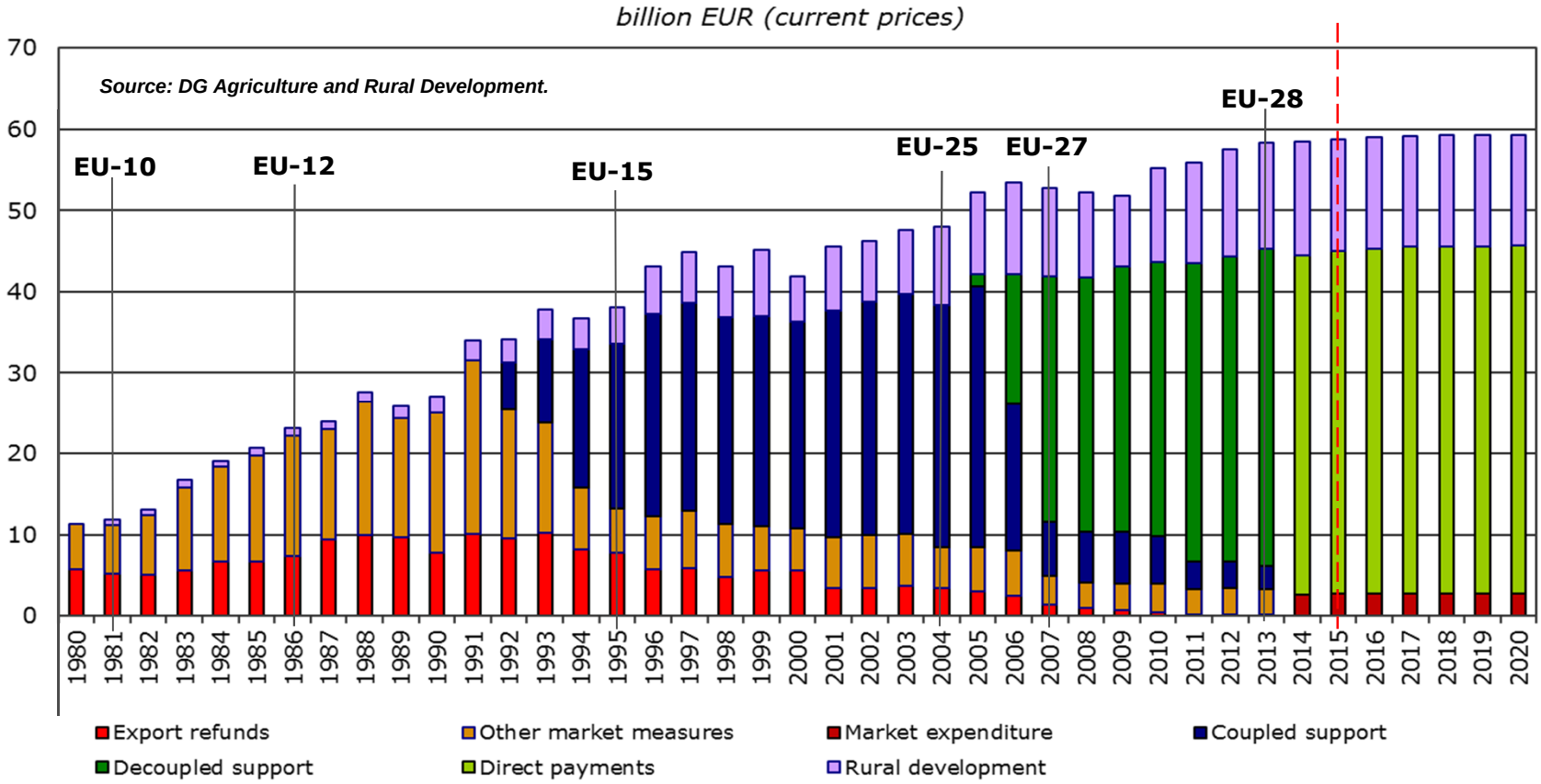
# The path of CAP expenditure 1980-2020




**CAP: 58 000 000 000 € / year**
**40 Billions Direct aids**
**14 Billions Rural development**
**Average 250 € direct aids / ha**

**Rural areas = 90% EU territory**
**50% farmed**

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# Historical development of the CAP (1962 →)

Food security →

Competitiveness →

Sustainability
Cohesion →

Policy Efficiency →

| The Early Years (60s) | The Crisis Years (70s/80s) | THE 1992 REFORM | Agenda 2000 | CAP REFORM 2003 | CAP Health Check 2008 | CAP REFORM Post-2013 |
|---|---|---|---|---|---|---|
| Price support<br>Productivity improvement<br>Market stabilisation | Over production<br>Exploding expenditure<br>International frictions<br>Supply controls | Price cuts and compensatory payments<br>Surplus reduction<br>Income and budget stabilisation | Deepening the reform process<br>Rural development | Market orientation<br>Decoupling<br>Cross compliance<br>Consumer concerns<br>Environment<br>Enlargement | Reinforcing 2003 Reform<br>Dairy quotas | Greening<br>Targeting<br>Redistribution<br>End of production constraints<br>Food chain<br>Research & Innovation |

# 2. Spatial Information supporting IACS

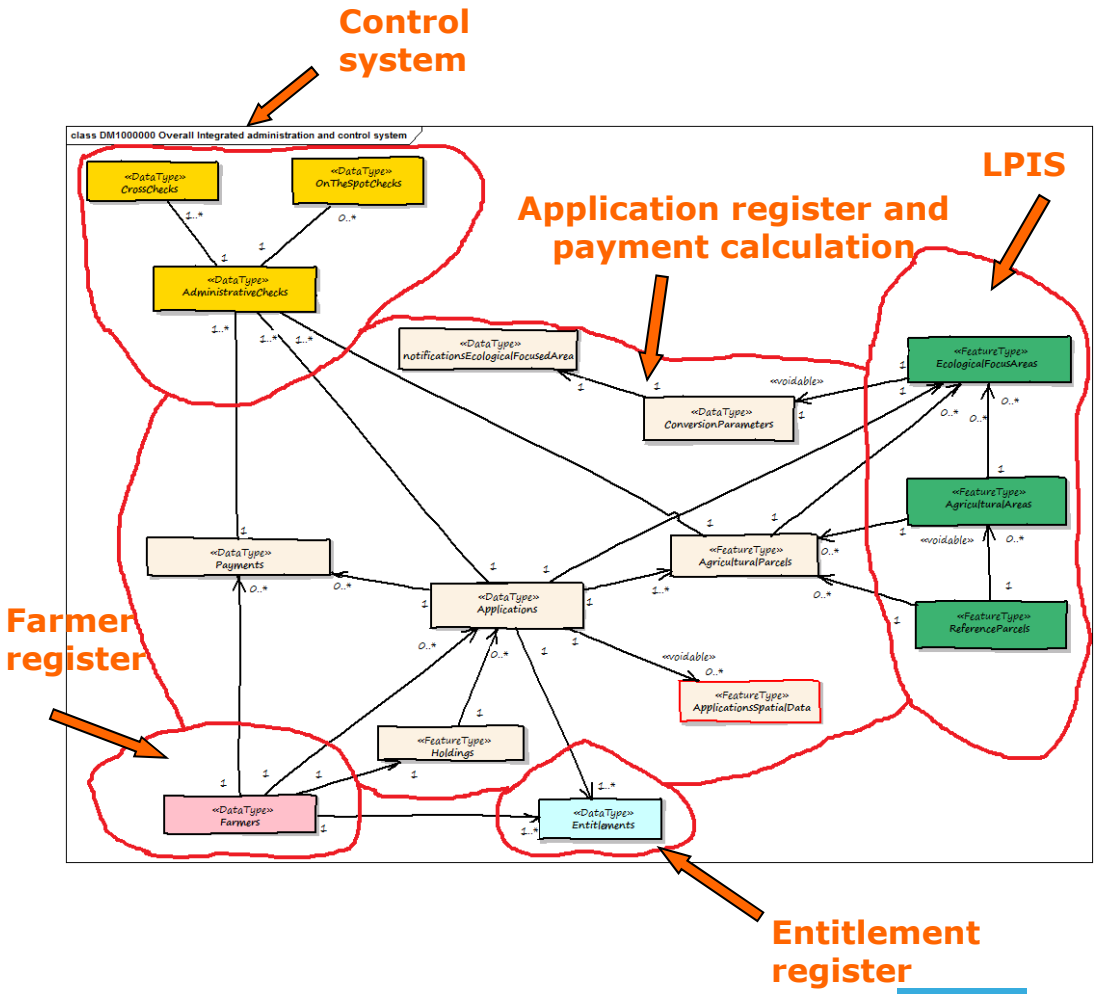
# IACS – Integrated Administration and Control System

- Legally mandated management tool
  - ✓ Implemented in every member State
  - ✓ Owner of the system: accredited bodies (Payment Agencies with potential assistance of NMCAs)

- Main task: efficiently manage all processes related to direct payments and rural development (the two pillars of CAP)
  - ✓ declaration process for farmers (1 farmer-1 declaration)
  - ✓ controls and payment calculations for the authorities

- Principle of subsidiarity – legal requirements of the EU
  - ✓ define the ontology and semantics of the domain
  - ✓ specify where an which extent MS can take local regulatory measures (EFA, pro-rata, etc.)
  - ✓ do not interfere with IT implementation details

# Subsystems of IACS




## Subsystems that heavily rely on spatial information

- Land Parcel Identification System
  - ✓ Reference parcel
  - ✓ Agricultural area
  - ✓ EFA
  - ✓ LPISQA observations and measurements
- Control systems
  - ✓ OTSC observation and measurements
- Application and payments
  - ✓ Geospatial application

This presentation deals spatial information in land-related direct payments only

# Spatial data in IACS

**System for identification for agricultural parcels ≈LPIS (Land Parcel Identification System)**

- Identification, localisation and quantification of agricultural area potentially subject of declarations
- Supported by orthoimagery
- Standard driven quality assessment framework
- Feature types: reference parcel, ecological focus area, agricultural area (per type)

**Integrated control system**

- Methodology for area measurement (on-the-spot-check)
- Computer aided interpretation and or field measurements

**Aid application and payment claims**

- Geospatial aid application (mandatory from 2018)

# 3. Where CAP and INSPIRE meets: greening

# The environmental dimension (greening)

**Directive 2007/2/EC (INSPIRE)**

- lays down general rules to establish an Infrastructure for Spatial Information in Europe for the purposes of Community environmental policies and policies or activities which may have an impact on the environment

**Regulation (EU) 1307/2013 of the European Parliament and of the Council**

- Chapter 3: Payment for agricultural practices beneficial for the climate and the environment
- (30% of the direct payments are related to this)

# Obstacles for collaboration?

- **LPIS is not an INSPIRE theme**
  - ✓ Not explicitly listed, but following subsidiarity nothing prevents MS to include/publish as part of national SDIs and INSPIRE
  - ✓ LPIS may fit (depending on implementation design):
    - Cadastral parcels in Annex I (if LPIS is based on that)
    - Land cover (Annex II)
    - Land use (Annex III)
    - Area management zones and reporting units (Annex III)
    - Agricultural facilities (Annex III)

- **IACS contains sensitive/personal data**
  - ✓ CAP regulations suggest segregating data by listing subsystems
  - ✓ The majority of sensitive information (farmers' registers, entitlements, payments, applications for certain payment schemes) are not spatial data
  - ✓ Geospatial aid application – data **validated or provided by the farmers**

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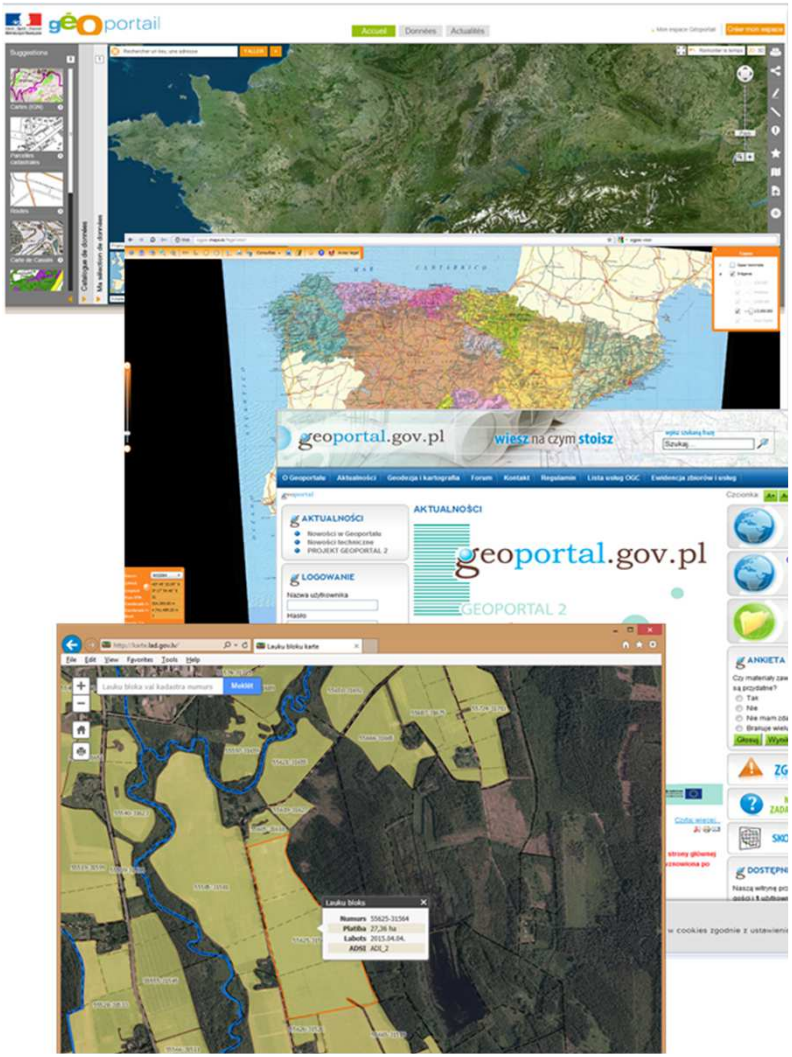
# Benefits of INSPIRE in CAP

## Make economies by

- ✓ reusing data residing in SDIs for greening and controls
- ✓ Using standardised discovery services & metadata
- ✓ Using standardised download and transformation services
- ✓ Standardised encoding for data exchange
- ✓ Facilitating interoperability by adopting common cross-domain models for exchanging information
- ✓ Relevant themes (non-exhaustive):
  - ➢ Administrative units
  - ➢ Cadastral parcels
  - ➢ Transport network
  - ➢ Hydrography
  - ➢ Protected sites
  - ➢ Orthoimagery
  - ➢ Land cover
  - ➢ Buildings
  - ➢ Habitats and biotopes
  - ➢ Soil

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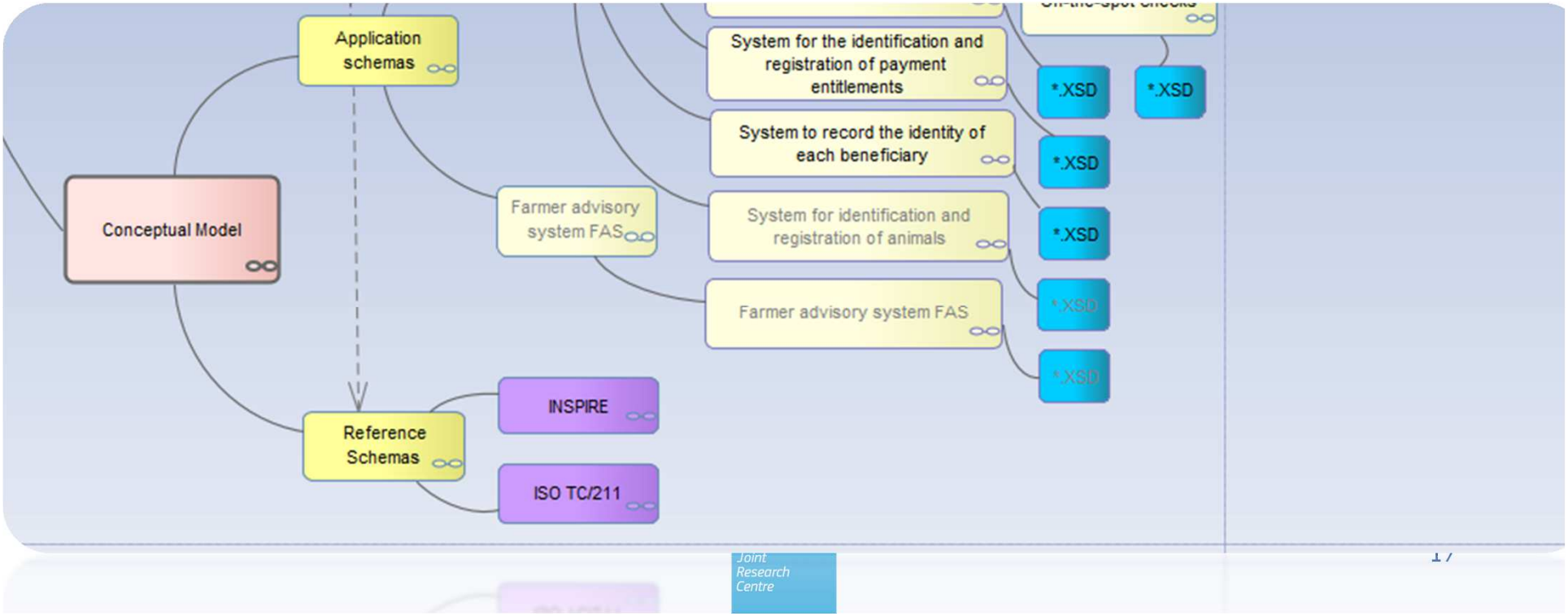
# Benefits of CAP for INSPIRE

- **CAP as part of SDIs**
  - Very detailed land cover mapping on annual basis
  - Data collection (e.g. mapping of ecological focus area) may be used for updating topographic mapping
  - Reusing data in other reporting processes (statistical reporting – Farm Structure Survey (FSS))
  - Can support cross border harmonisation of data
  - End users (farmers) become spatially aware citizens

# What has been already done?

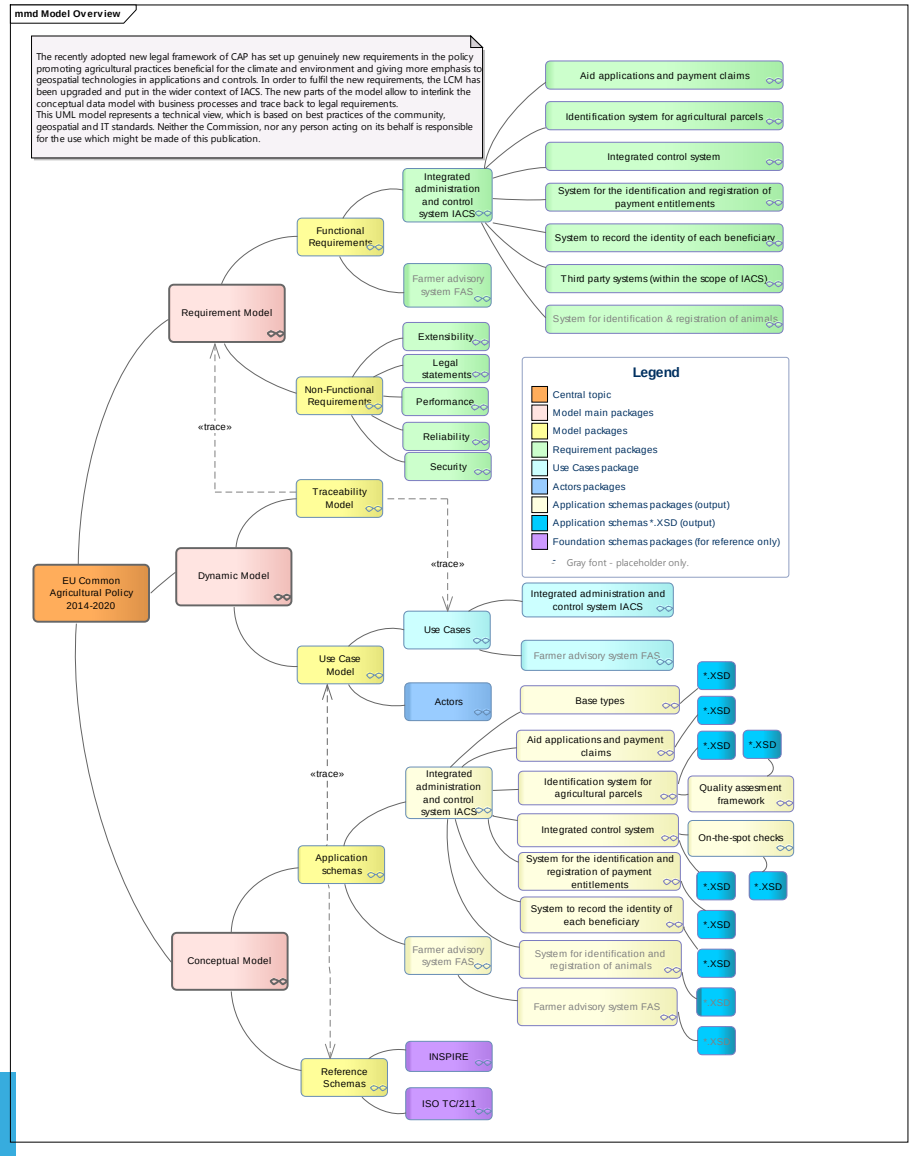
- Collaboration in overlapping themes
  - ✓ Participation in INSPIRE TWGs
  - ✓ specification development in cadastral parcels, orthoimagery, land cover, land use, agricultural facilities
- Shared technical solutions (reuse existing)
  - ✓ Standards (conformity to ISO 19103, 19152 and 19157)
  - ✓ Use case and model driven approach,
  - ✓ data encoding (GML/XML in LPIS QA data exchange),
  - ✓ Principle of reusing components (feature types, code lists)
  - ✓ Governance of code lists
  - ✓ Shared CSL (GML profile of UML and modelling tool)
- Attempt to reuse INSPIRE data specification methodology in IACS
  - ✓ Extending INSPIRE schemas in IACS domain model, when appropriate

# 4. IACS as INSPIRE extension?



# IACS domain model

- Platform independent requirement, dynamic and conceptual models
- Presented in conceptual schema language (UML) and detailed text documentation
- No implementation details, but basic information concepts and business activities
- Basis for discussion and further refinement by the stakeholders community
- May be used for checking the completeness of an implementation
- May be used as starting point for implementation model development
- INSPIRE and ISO TC 211 standards are used as reference schemas

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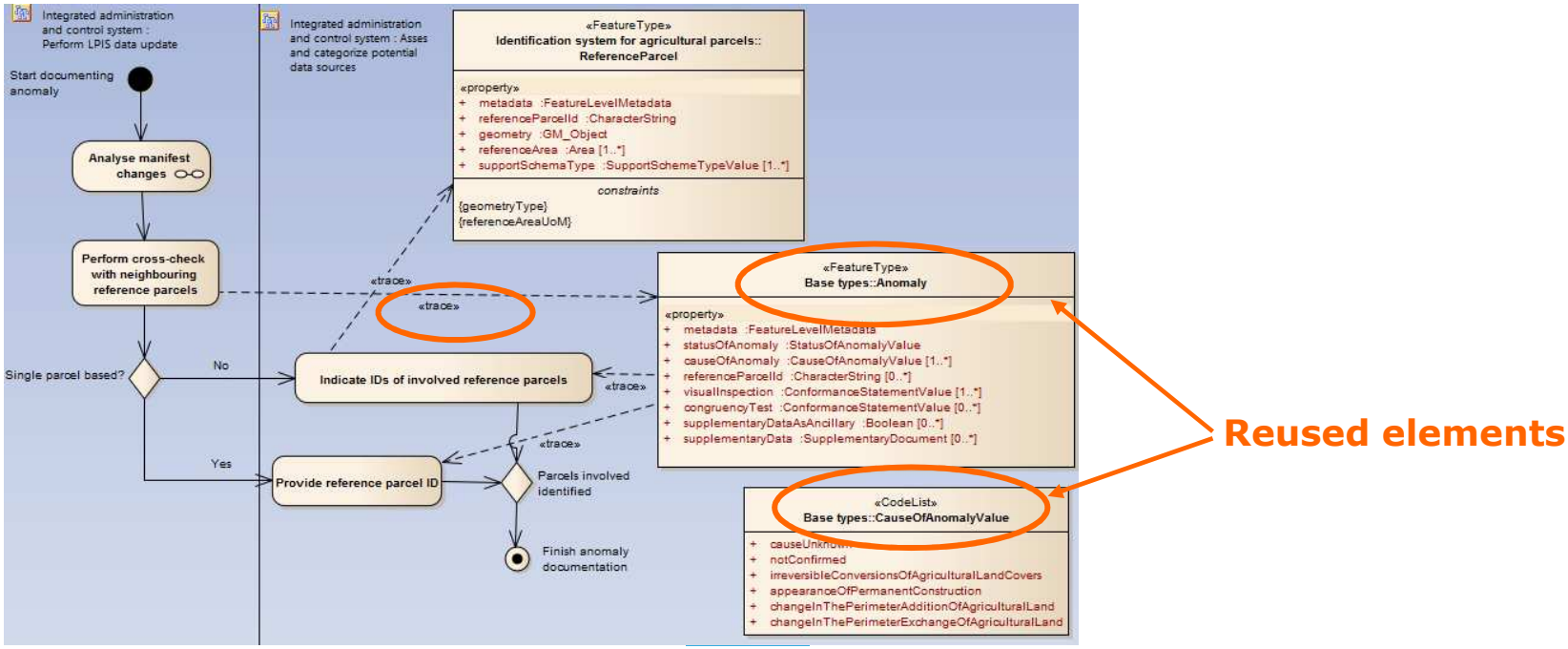
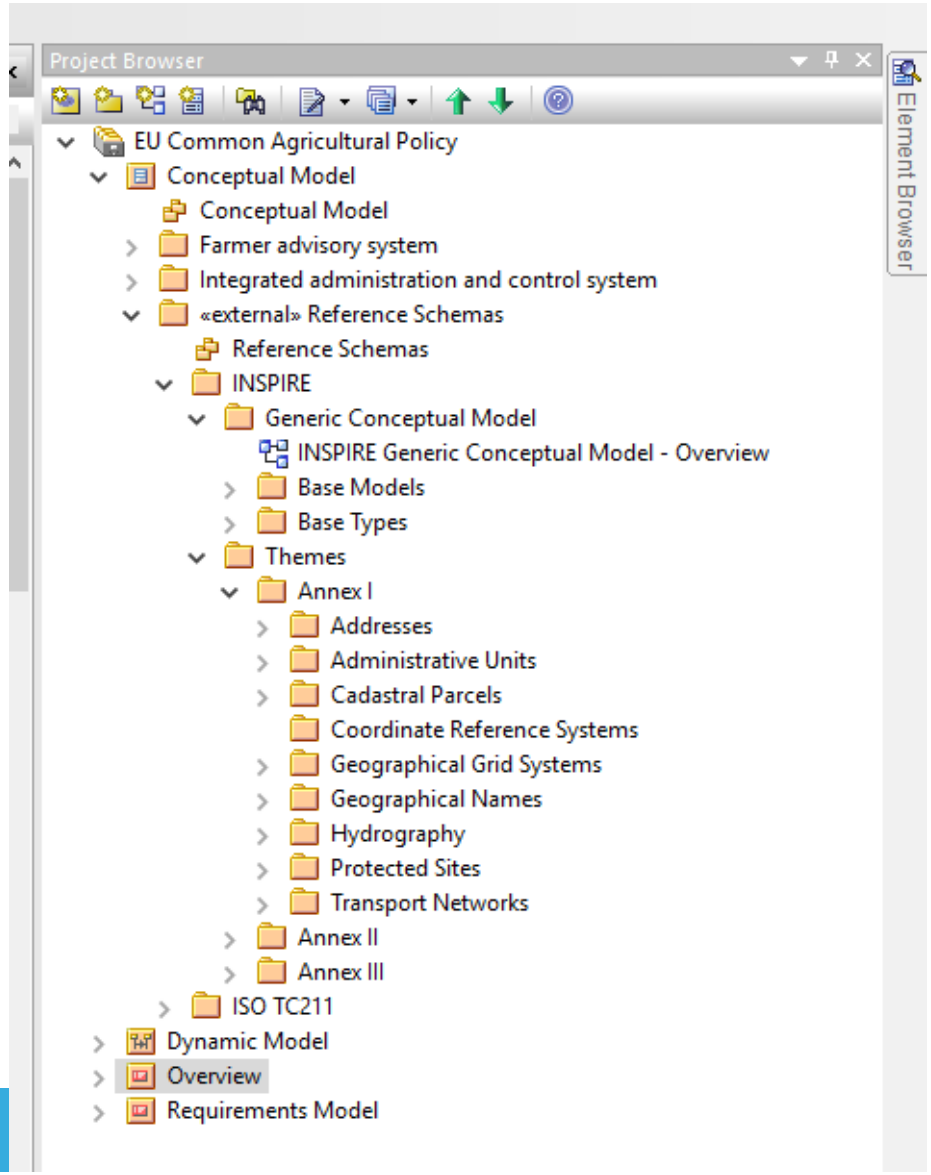
# User and model driven specification development

- Components (packages) of the model are integrated (one element is specified once and only once and is re-used when needed)
- Interactions (activities) of the users with the information system (conceptual model) is explicitly indicated (tracing)
- Conformity with relevant standards established by reference (relevant conceptual models of ISO TC 211 and INSPIRE are imported



# Extending INSPIRE schemas I

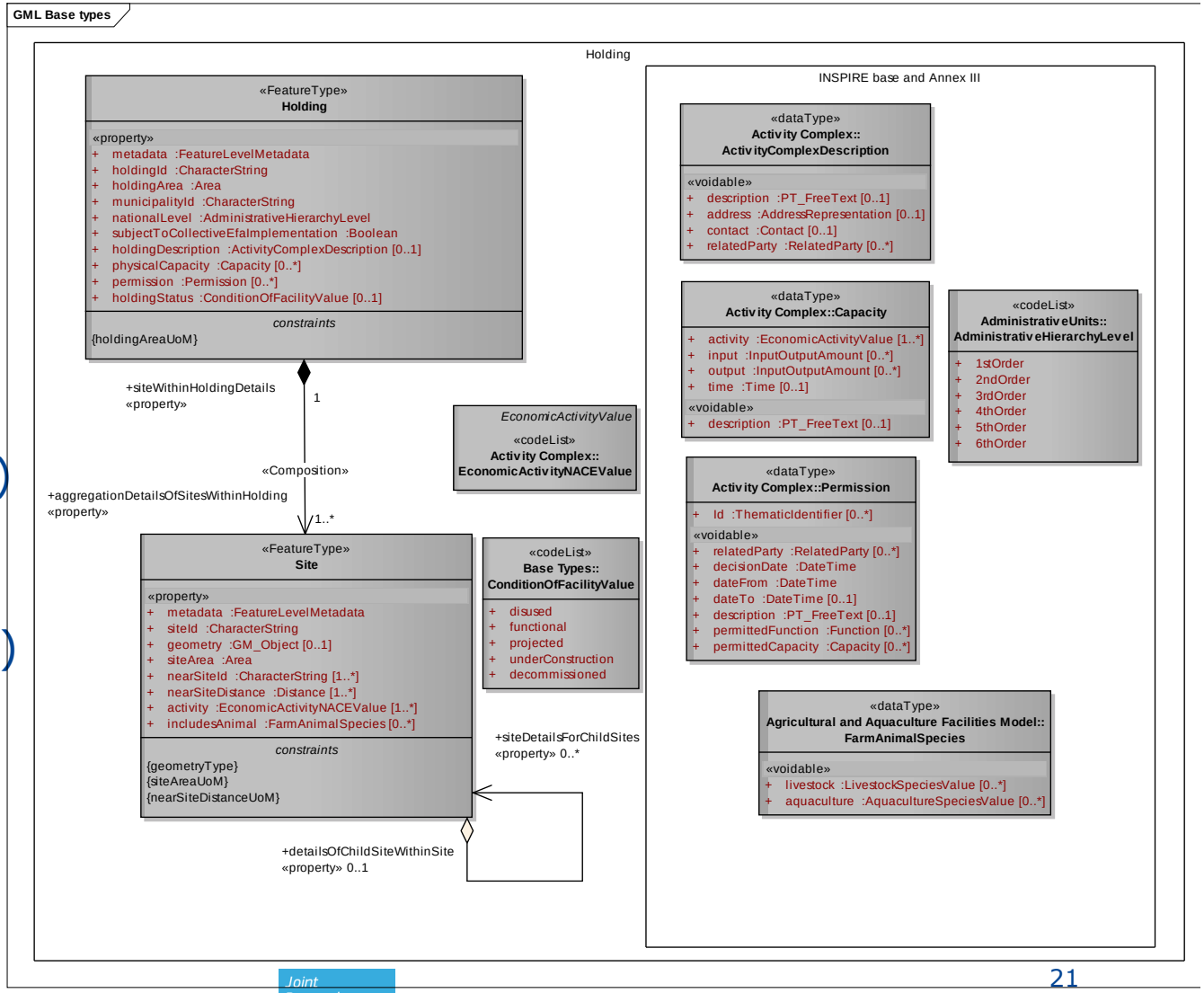
- Conformity to INSPIRE implemented by reference (all ISNPIRE application schemas imported in the model with views of potential reuse)



# Example 1

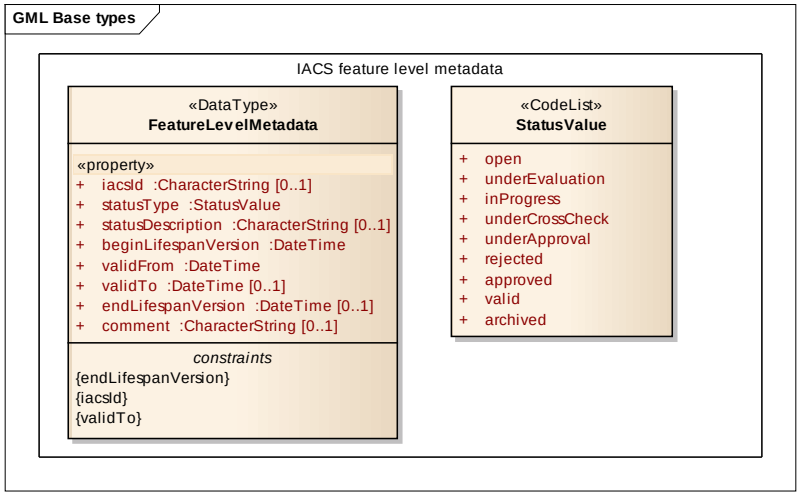
**Description of holdings:** elements used from

- Generic conceptual model
- Annex I (Administrative units)
- Annex III Agricultural and aquacultural facilities)

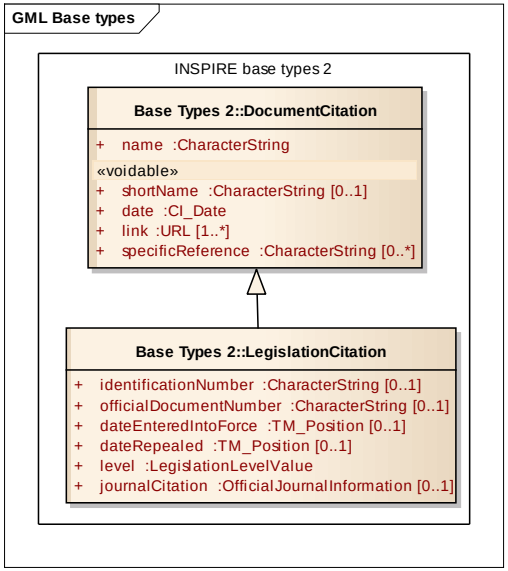


# Example 2 and 3

## Life cycle information
as feature level metadata

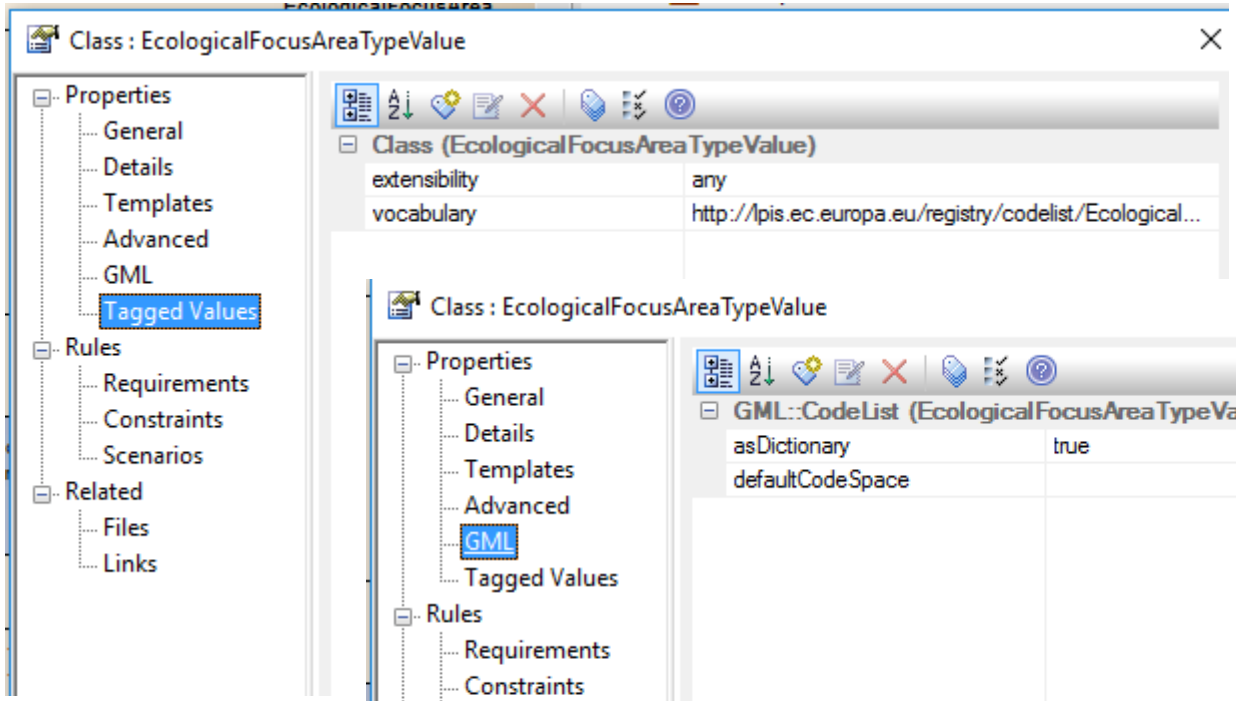


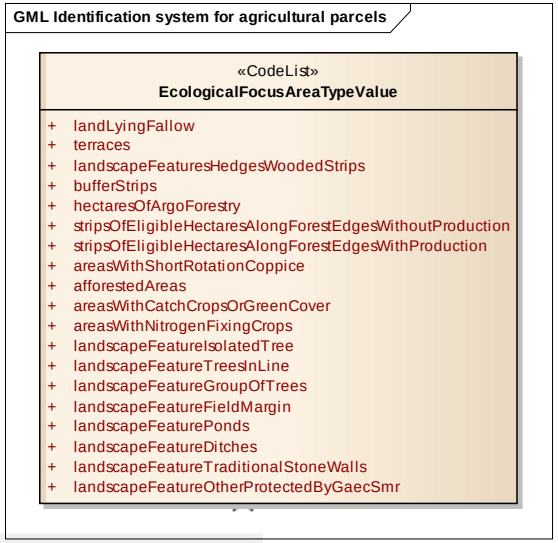

## Document citation



# Extending INSPIRE schemas II

## Governance and registry of code lists



# Convergence of INSPIRE and CAP

**Technology is ready…but** the stakeholders of IACS/LPIS still insist on

- keeping out referring to
  - ✓ data protection constraints mandated by national law
  - ✓ INSPIRE itself (LPIS not stated explicitly in Annexes)
  - ✓ CAP regulations themselves (no reference/requirement to comply with INSPIRE)
  - ✓ Fear of potential errors and penalties that new technology may cause
  - ✓ Complexity of INSPIRE technology
- Lack of
  - ✓ sharing culture (my data - my business)
  - ✓ Incentives for innovation (we have been doing always like this)

**Push and pull factors of development**

- Scarcity of public resources (impossible to find parallel structures)
- eGovernment with extended use of (centralised) registries (less duplication)
- Generation change (younger people with more affinity to ICT)
- Paradigm change - knowledge intensive society (knowledge management)

# 5. Perspectives

- The greening CAP facilitates further integration with SDIs
  - ✓ No technical obstacles and further pull by the post 2020 CAP is expected
  - ✓ Potential for data sharing in both directions
  - ✓ Demonstration of benefits by pilots

# IACS 2.0 related pilot


- Funding by DG Agri and DG Connect reserved for MS administrations
- Subject of adoption of the Work Programme 2018-2020
- Indicative topics:
  - ✓ Interoperability & improved data glows
  - ✓ Innovative ways of using agri-env data
  - ✓ User acceptance
  - ✓ Socio-economic impact
- Single stage submission in February 2018
- Potential start: end of 2018

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