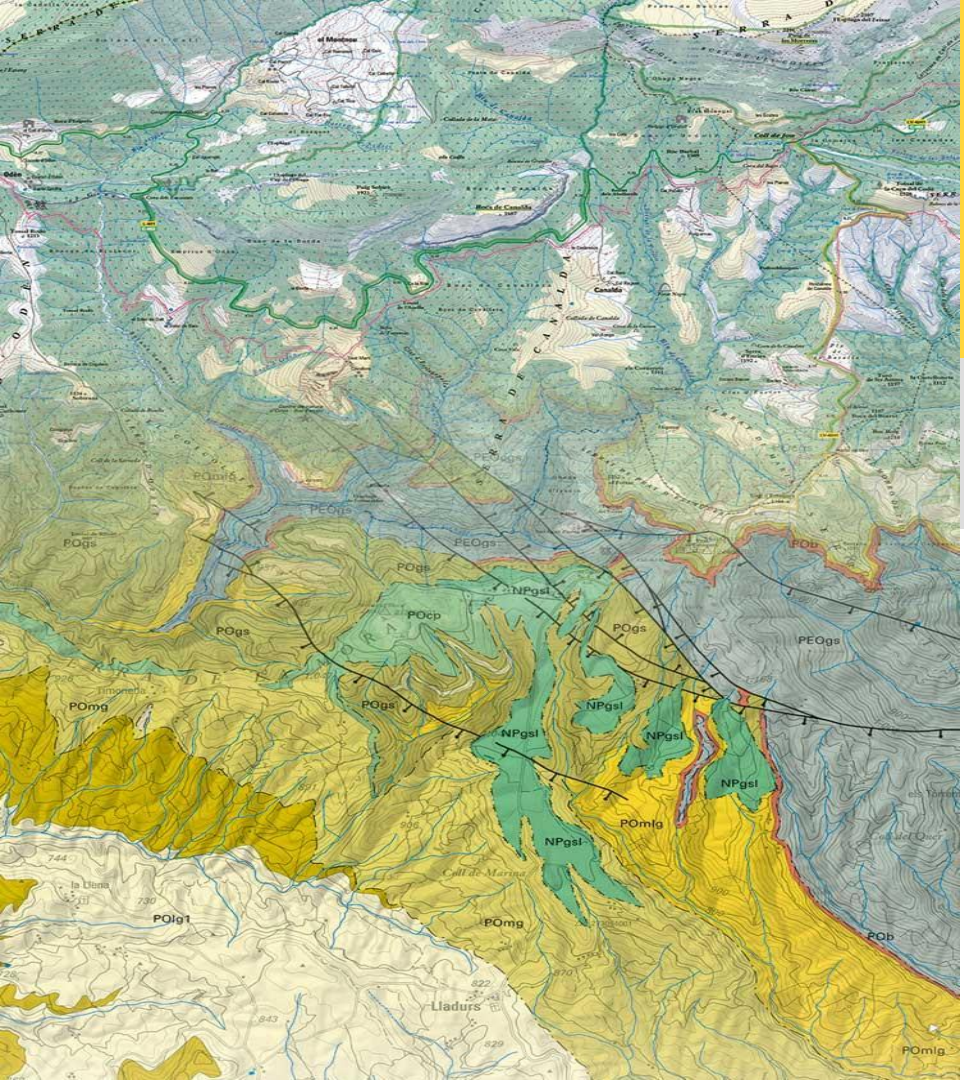

On the way of providing INSPIRE Addresses

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INSPIRE - Geospatial World Forum 2015
Lisboa, May 2015

ICGC
Institut Cartogràfic i Geològic de Catalunya

Generalitat de Catalunya

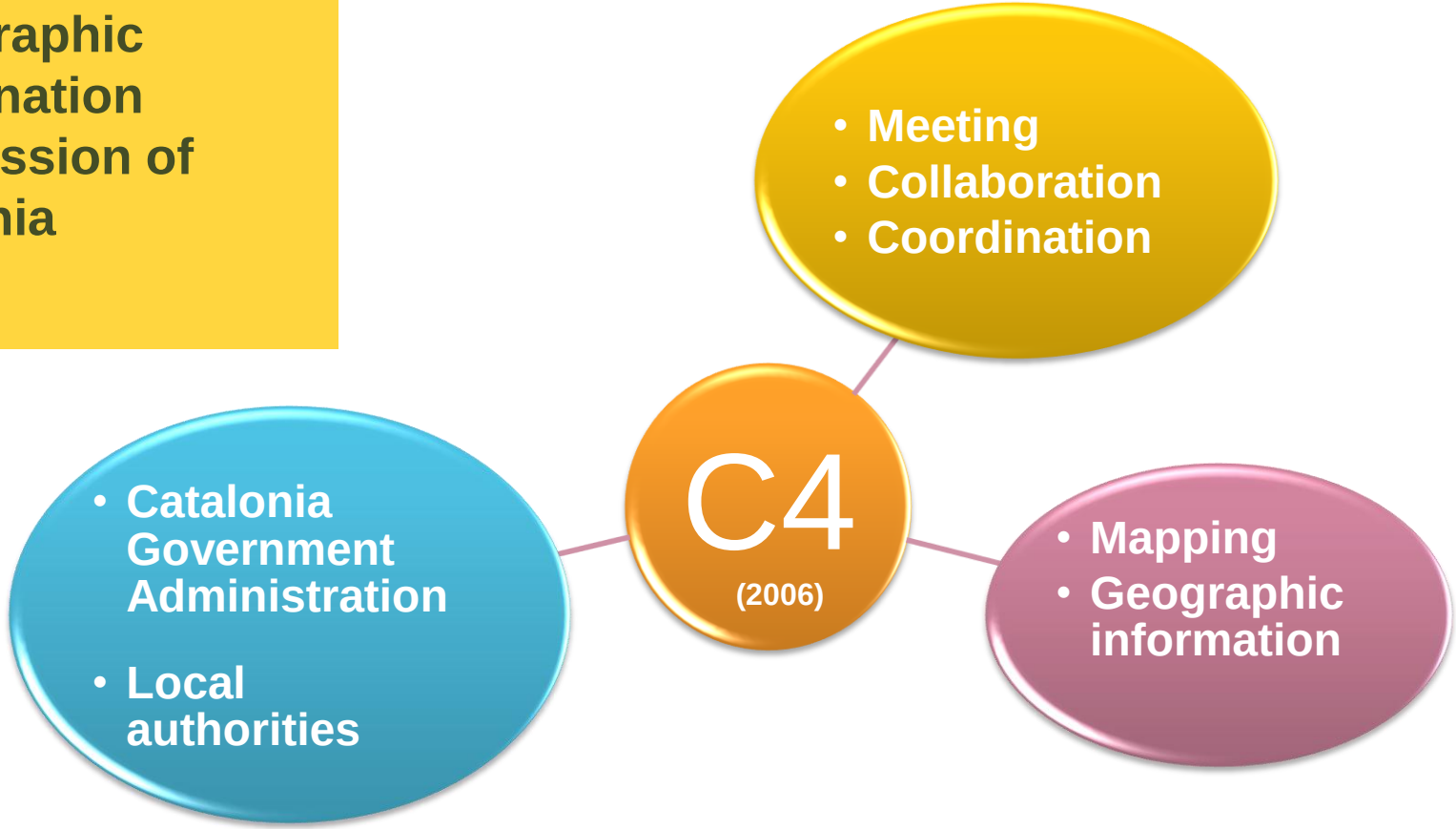
Agenda

Agenda

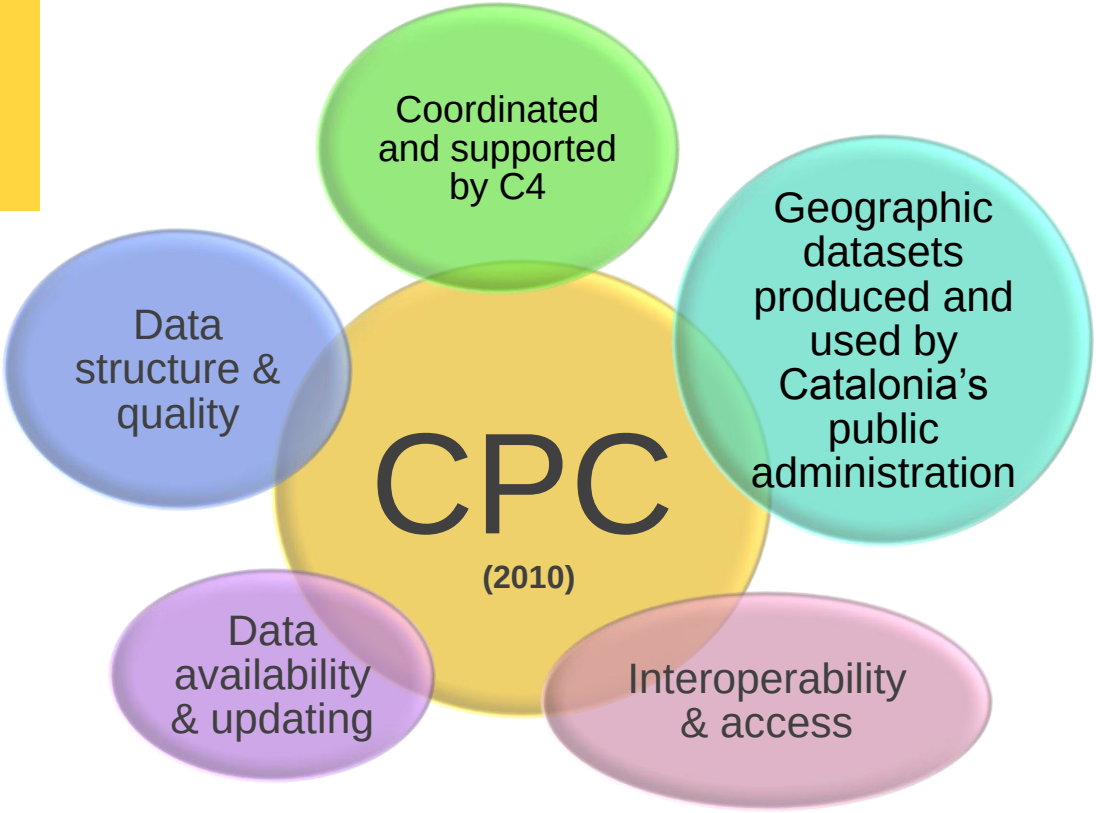
- Introduction
- Municipal Database of Addresses of Catalonia data specification
- Transformation to INSPIRE Addresses data specification
- Conclusions

Introduction

Cartographic Coordination Commission of Catalonia (C4)



Cartographic Plan of Catalonia (CPC)



C4

- One of C4 responsibilities is establishing rules and standards to be applied in the elaboration of CPC Datasets.
- C4 operates through thematic commissions and working groups.
- Working groups define and write CPC dataset specifications, if they don’t exist.

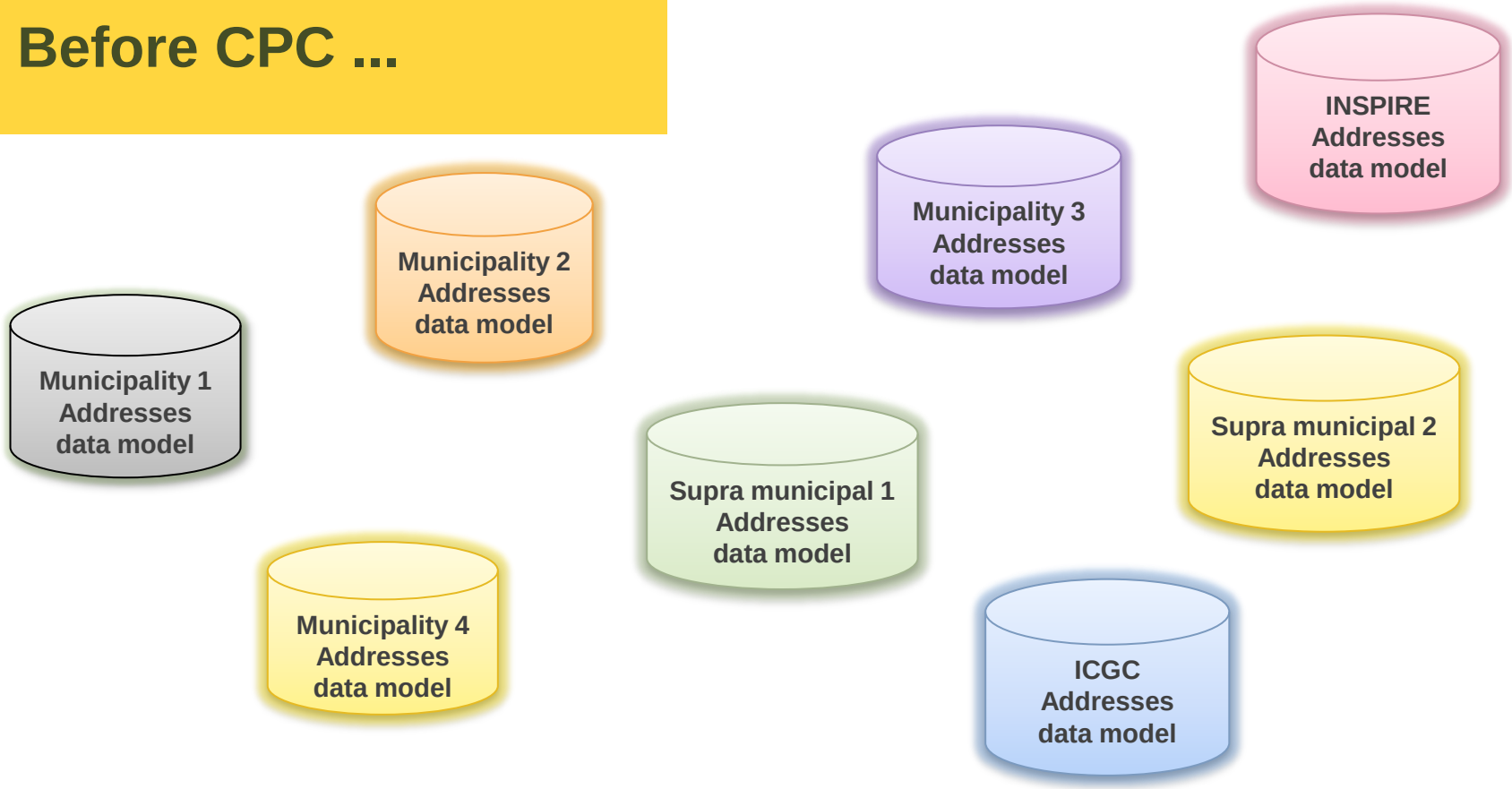
BDMAC

Municipal Database of Addresses of Catalonia

Address information

- Address information is one of the datasets included in the CPC.
- According to CPC, its compilation and maintenance is responsibility of the municipalities.

Before CPC ...

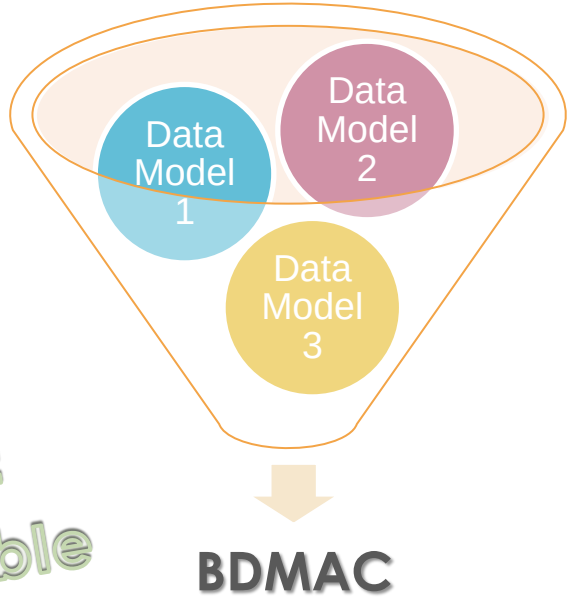

INSPIRE
Addresses
data model
Municipality 3
Addresses
data model
Municipality 2
Addresses
data model
Municipality 1
Addresses
data model
Supra municipal 1
Addresses
data model
Supra municipal 2
Addresses
data model
Municipality 4
Addresses
data model
ICGC
Addresses
data model

With CPC...

- 2013: definition of a common specification in the C4 framework.

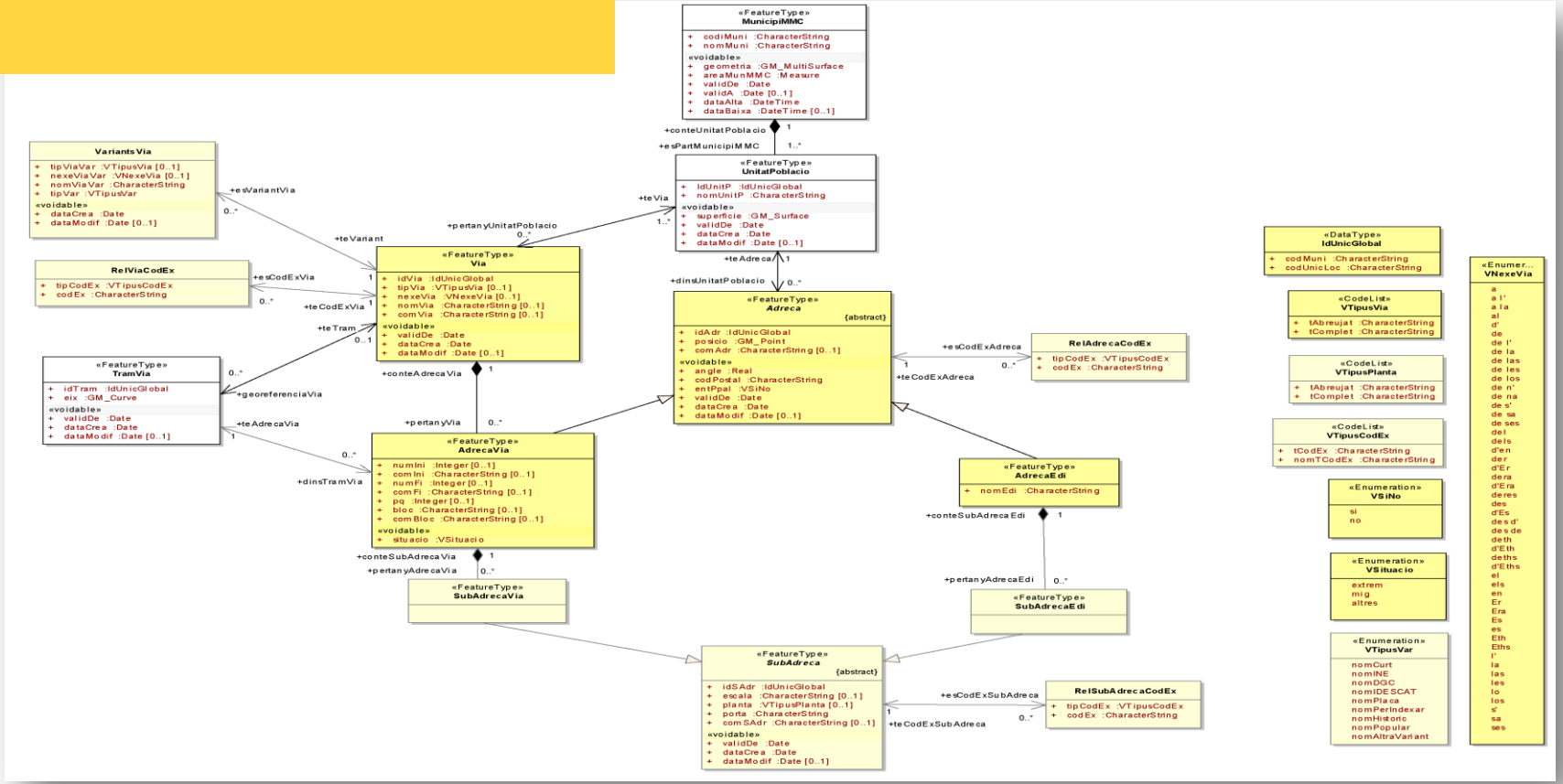
- Participation of the stakeholders:
  - Local administration (municipalities, supramunicipal organizations)
  - Catalonia Government Administration (ICGC, IDESCAT)

- BDMAC: Municipal Database of Addresses of Catalonia



INSPIRE Compatible

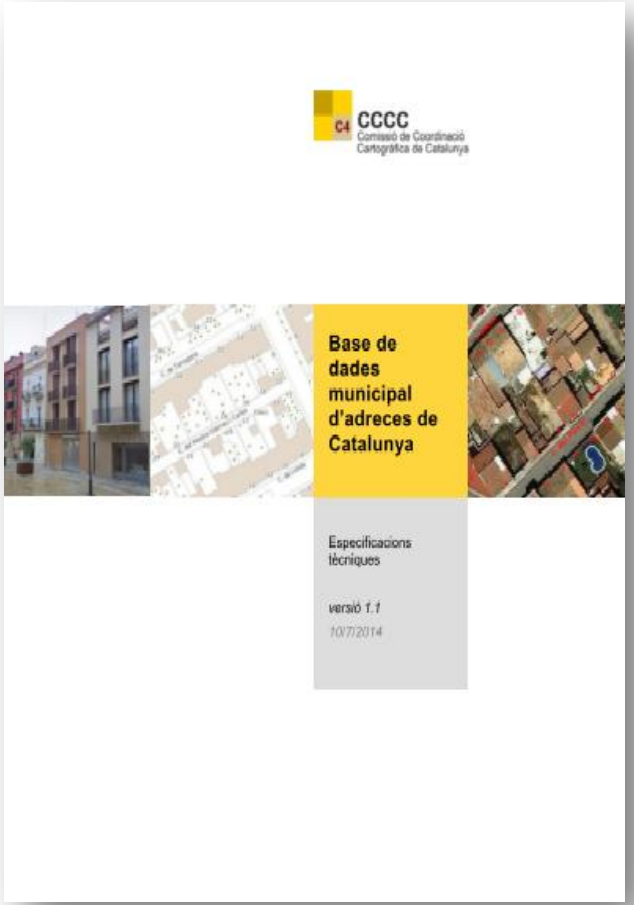
BDMAC Data Model



BDMAC data specifications

- Provide:
  - Unified criteria for data collection.
  - Minimum agreed quality level.
  - A starting point for new address data bases implementation in the municipalities.
  - A common data model for data exchange and integration.

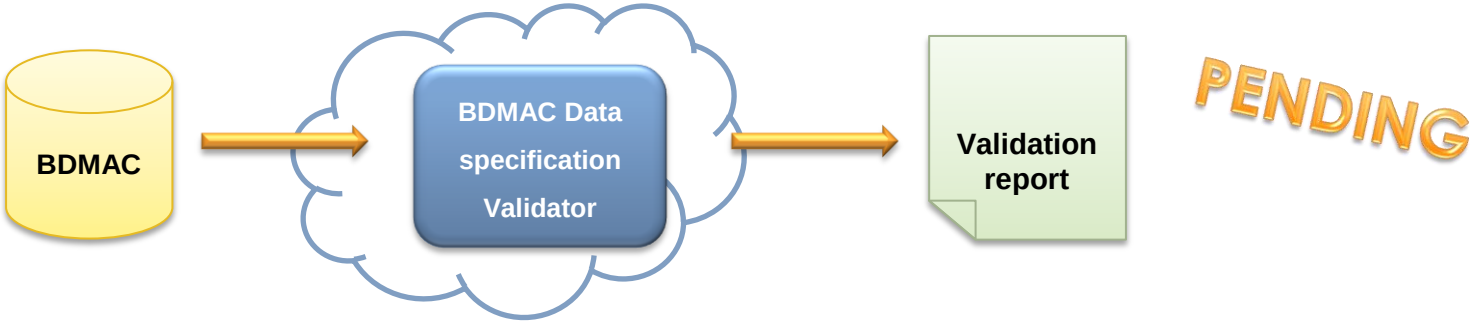
- Define several options for data exchange:
  - GML
  - Shapefile



Current situation

- Municipalities, supramunicipal bodies and ICGC are starting to apply BDMAC specification for generating the official datasets.

- Within C4 activities, a web service to validate the compliance of the datasets with the specification will be put in place.



Transformation services

BDMAC to INSPIRE Addresses

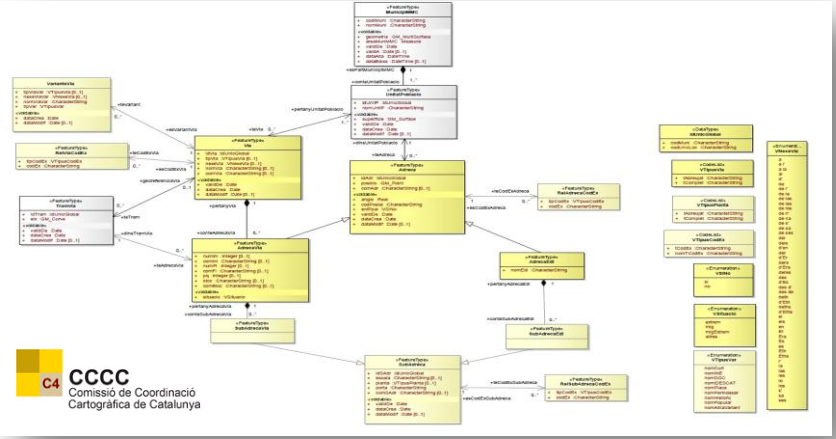
Goal

- Institutional coordination and collaboration beyond data:
  - In addition to sharing data
    - ✓ exchanging
    - ✓ publishing
  - Sharing processes to support data generation and dissemination
    - ✓ validation and quality control web services
    - ✓ transformation web services

Transformation service

- BDMAC datasets hold information included in INSPIRE Addresses datasets.
- BDMAC data model is compatible with INSPIRE Addresses data model
- Within C4 activities, a web transformation service from BDMAC to INSPIRE Addresses is being put in place.

Transformation
BDMAC – INSPIRE Addresses



UML class diagram: BDMAC v1.1 application schema

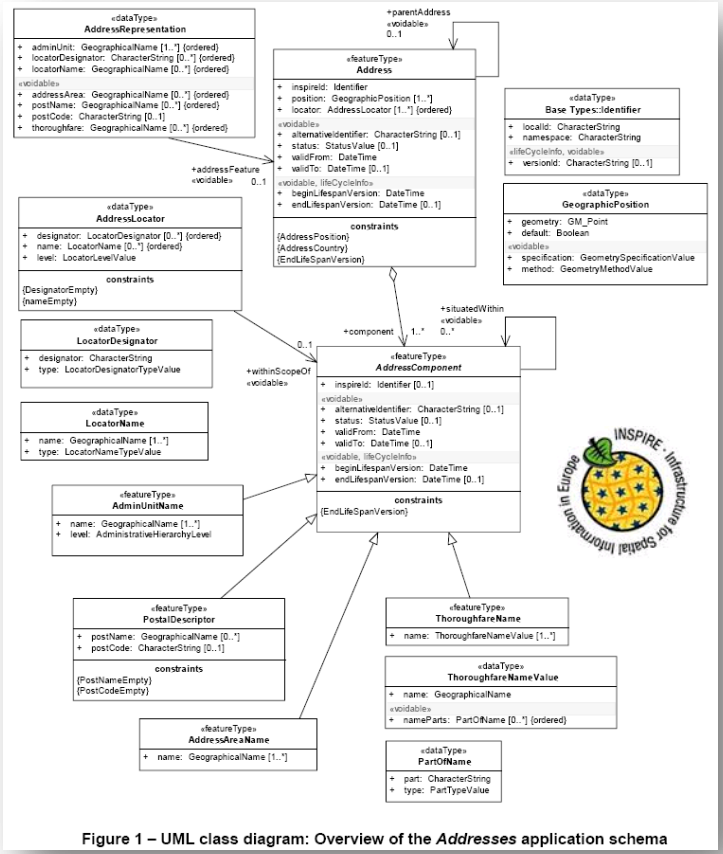


Figure 1 – UML class diagram: Overview of the *Addresses* application schema

BDMAC to INSPIRE Matching table

Target data model: INSPIRE Addresses

INSPIRE model

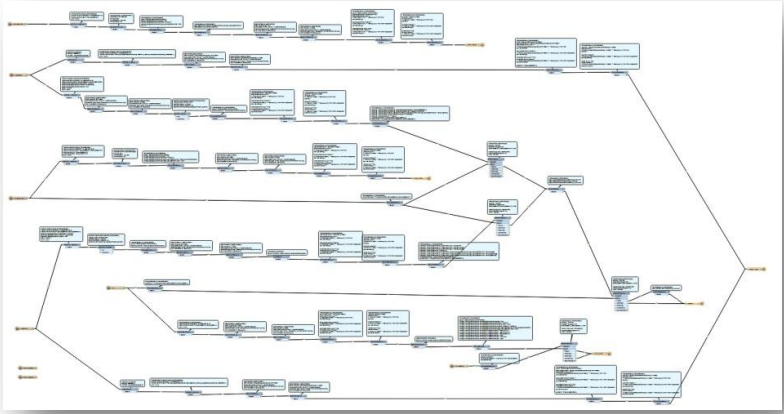
Feature Type	Element	ComplexType	Attribut Lien Constraint	Type			Voidable
Address [via]	inspireId	Identifier	localId	CharacterString			
			namespace	CharacterString			
			versionId	CharacterString			yes
	gml_id						
	position	GeographicPosition [1..*]	geometry	GM_Point			
			default	Boolean			
			specification	GeometrySpecificationValue			yes
			method	GeometryMethodValue			yes
	locator	AddressLocator [1..*]{ordered}	designator	LocatorDesignator [0..*]{ordered}	designator [0]	CharacterString	
					type [0]	LocatorDesignatorTypeValue	
					designator [1]	CharacterString	
					type [1]	LocatorDesignatorTypeValue	
					designator [2]	CharacterString	
					type [2]	LocatorDesignatorTypeValue	
					designator [3]	CharacterString	
					type [3]	LocatorDesignatorTypeValue	
					designator [4]	CharacterString	
					type [4]	LocatorDesignatorTypeValue	
			name	LocatorName [0..*]{ordered}	name [0]	GeographicalName [1..*]	
					type [0]	LocatorNameTypeValue	
					name [1]	GeographicalName [1..*]	
					type [1]	LocatorNameTypeValue	
					name [2]	GeographicalName [1..*]	
					type [2]	LocatorNameTypeValue	
			level	LocatorLevelValue			
	alternativeIdentifier	CharacterString [0..1]					yes
	status	StatusValue [0..1]					yes
	validFrom	DateTime					yes
	ValidTo	DateTime [0..1]					yes
	beginLifespanVersion	DateTime					yes
	endLifespanVersion	DateTime [0..1]					yes
	component	relationships [1..*]		UnitatPoblacio			
				MunicipIMMC			
				falta			
				falta			
Address [edi]	inspireId	Identifier	localId	CharacterString			
			namespace	CharacterString			
			versionId	CharacterString			yes
	gml_id						
	position	GeographicPosition [1..*]	geometry	GM_Point			

Source data model: BDMAC

BDMAC (Source Model)

Table name	Attribut	Type	Voidable	Observations
AdrecaVia	"ES.ICGC.BDMAC.AD"			fixed value
	"AdrecaVia".CODADRVIA			
	"inspireId.Identifier.localId"			
	POSICIO	GM_Point		
	"true"			fixed value
	"unpopulated"	codeValue		fixed value
	"unpopulated"	codeValue		fixed value
	NUMINI	integer [0..1]		
	"addressNumber"	codeValue		fixed value
	COMINI	CharacterString [0..1]		
	"addressNumberExtension"	codeValue		fixed value
	NUMFI	integer [0..1]		
	"addressNumber"	codeValue		fixed value
	COMFI	CharacterString [0..1]		
	"addressNumberExtension"	codeValue		fixed value
	PQ	integer [0..1]		
	"kilometrePoint"	codeValue		fixed value
	BLOC			
	{"buildingName","siteName"}	codeValue		conditional value
	COMBLOC			
	{void, "buildingName"}	codeValue		conditional value
	COMADR			
	"siteName"	codeValue		fixed value
	"accessLevel"	codeValue		fixed value
	"RelAdrecaCodEx".TIPCODEX			fixed value
	"current"	codeValue		fixed value
	VALIDDE			
	DATAMODIF			
_dinsUnitatPoblacio	#AddressAreaName.@Value(CODUNITP)			
_esPartMunicipiMMC	#AdminUnitName.@Value(CODMUNI)			
_teCodiPostal	#PostalDescriptor.@Value(CODPOSTAL)			
_pertanyVia	#ThoroughfareName.@Value(CODVIA)			
AdrecaEdi	"ES.ICGC.BDMAC.AD"			fixed value
	"AdrecaEdi".CODADREDI			
	"inspireId.Identifier.localId"			
	POSICIO	GM_Point		

BDMAC to INSPIRE Transformer



Addresses .xsd

BDMAC _INSPIRE_ matchingTable .xlsx

BDMAC SHP

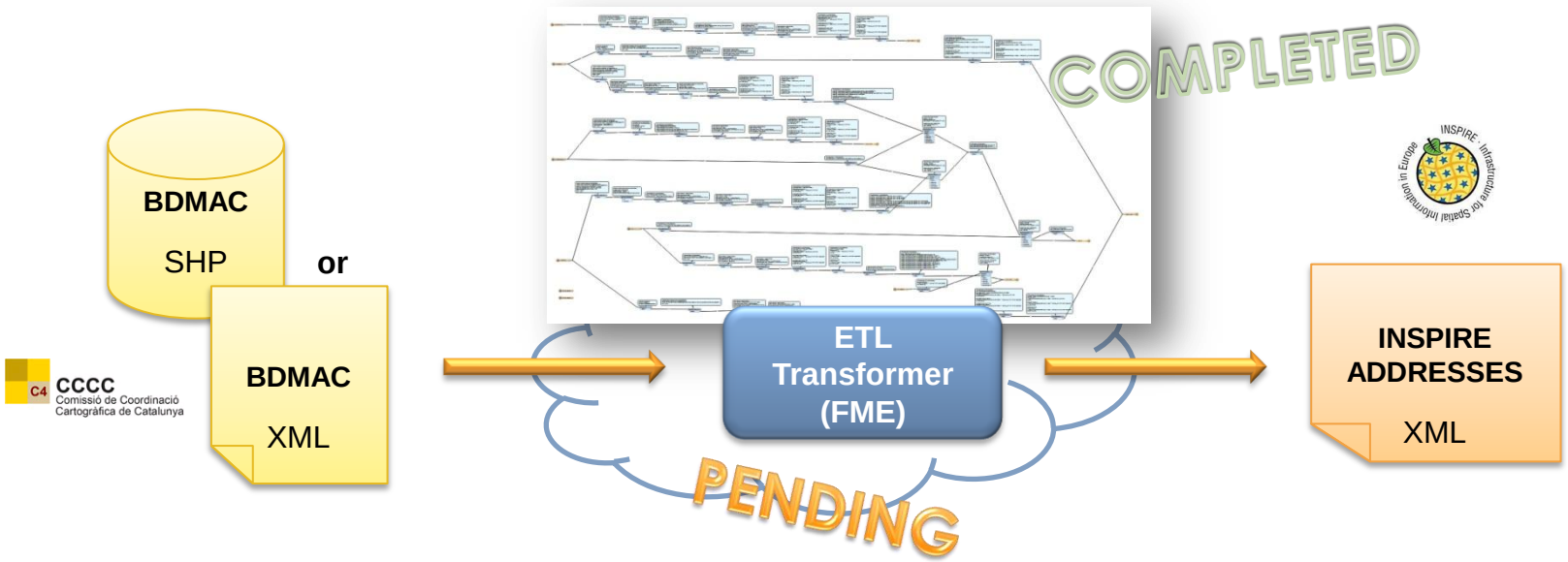
or

bdmacv11gm 1.xsd

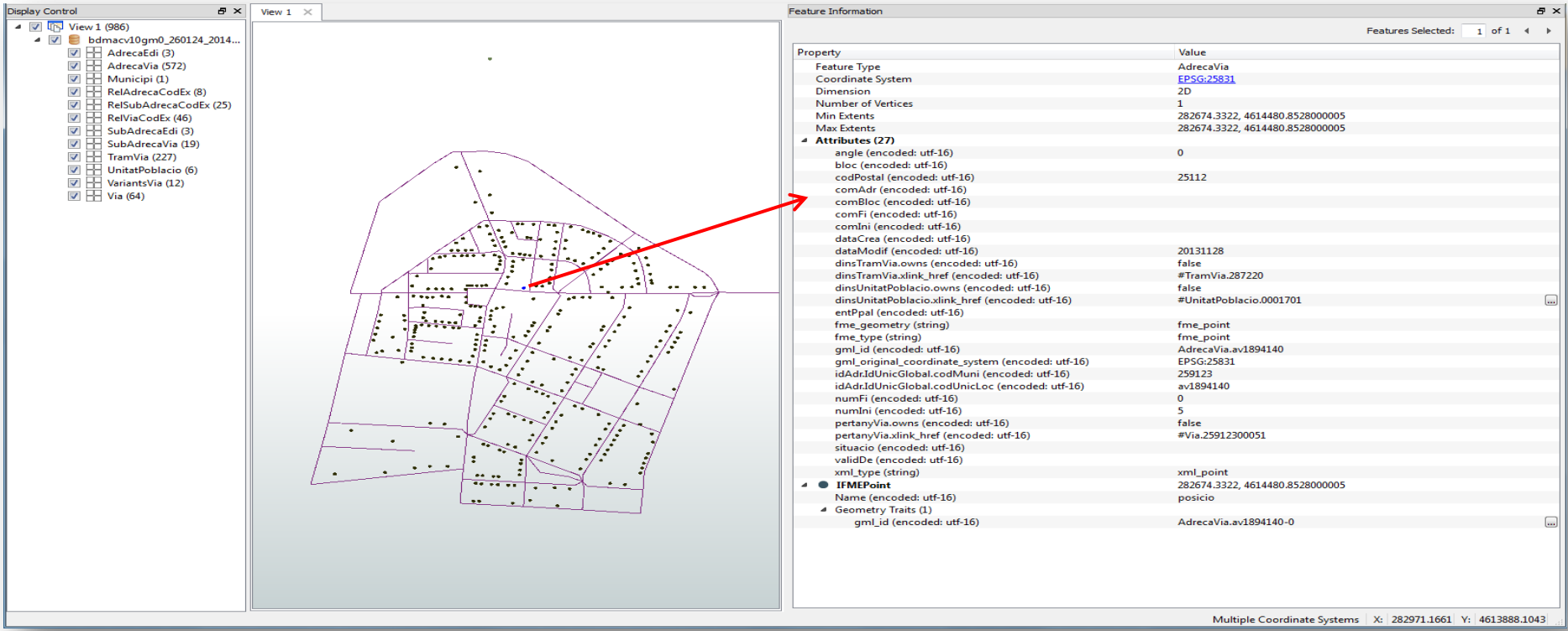
ETL transformer implementation (FME)

COMPLETED

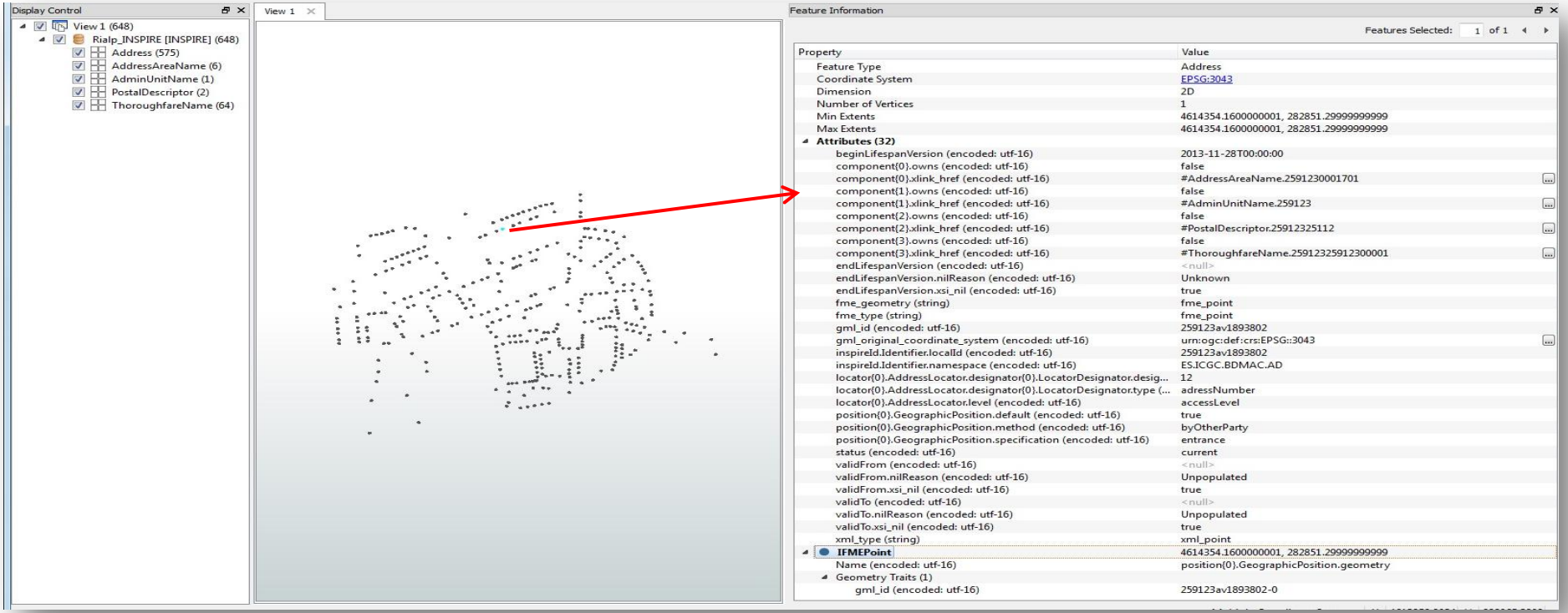
BDMAC to INSPIRE transformation



BDMAC Source data



INSPIRE Addresses transformed data



CONCLUSIONS

- The definition of a common specification with the participation of the data providers that specify:
  - criteria for data collection
  - a minimum agreed quality level

  ensures greater homogeneity of the data, facilitating its integration and exploitation as a whole.

- Allows the development of validation and transformation web services to be used by the community of users, with the consequent saving of resources.

Thanks for your attention

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