

Ontology at Bisnode

Patrik Kompuš, Bisnode CZ

patrik.kompus@bisnode.com

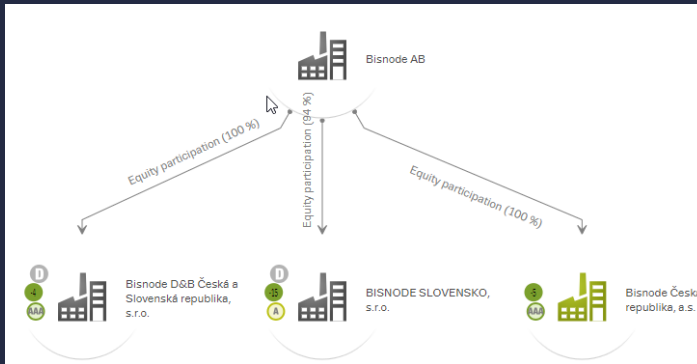
Agenda

- Introduction
- Business use case
- Why ontology?
- Architecture, process and tools
- GDPR
- Challenges

Introduction

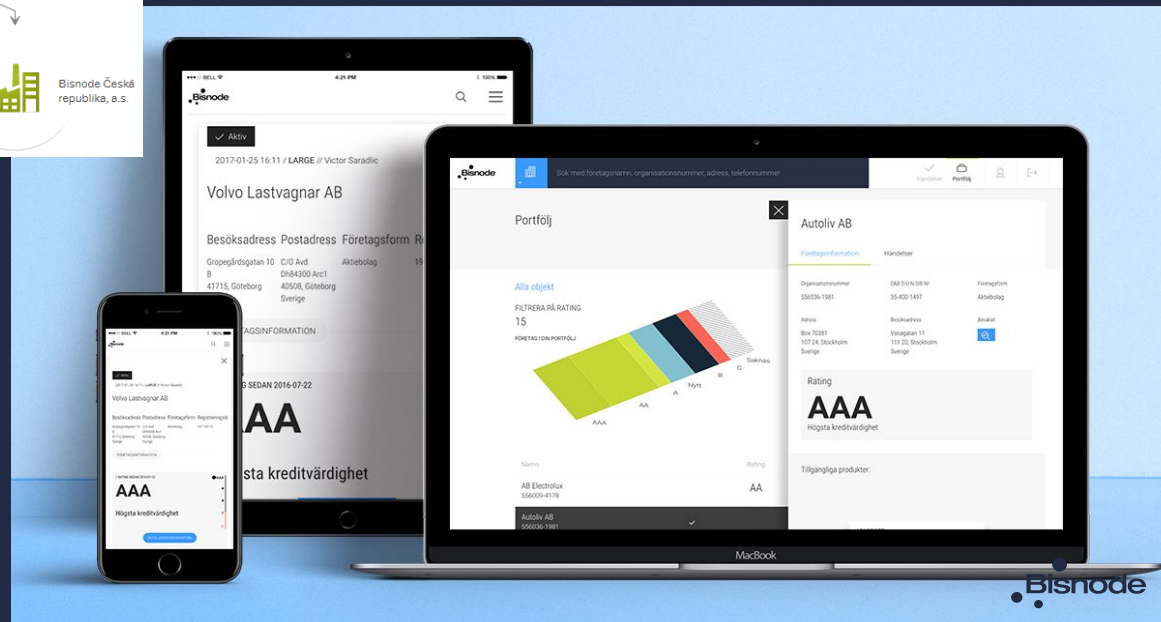
- “ Bisnode is the leading European data & analytics provider “

Bisnode
19
countries

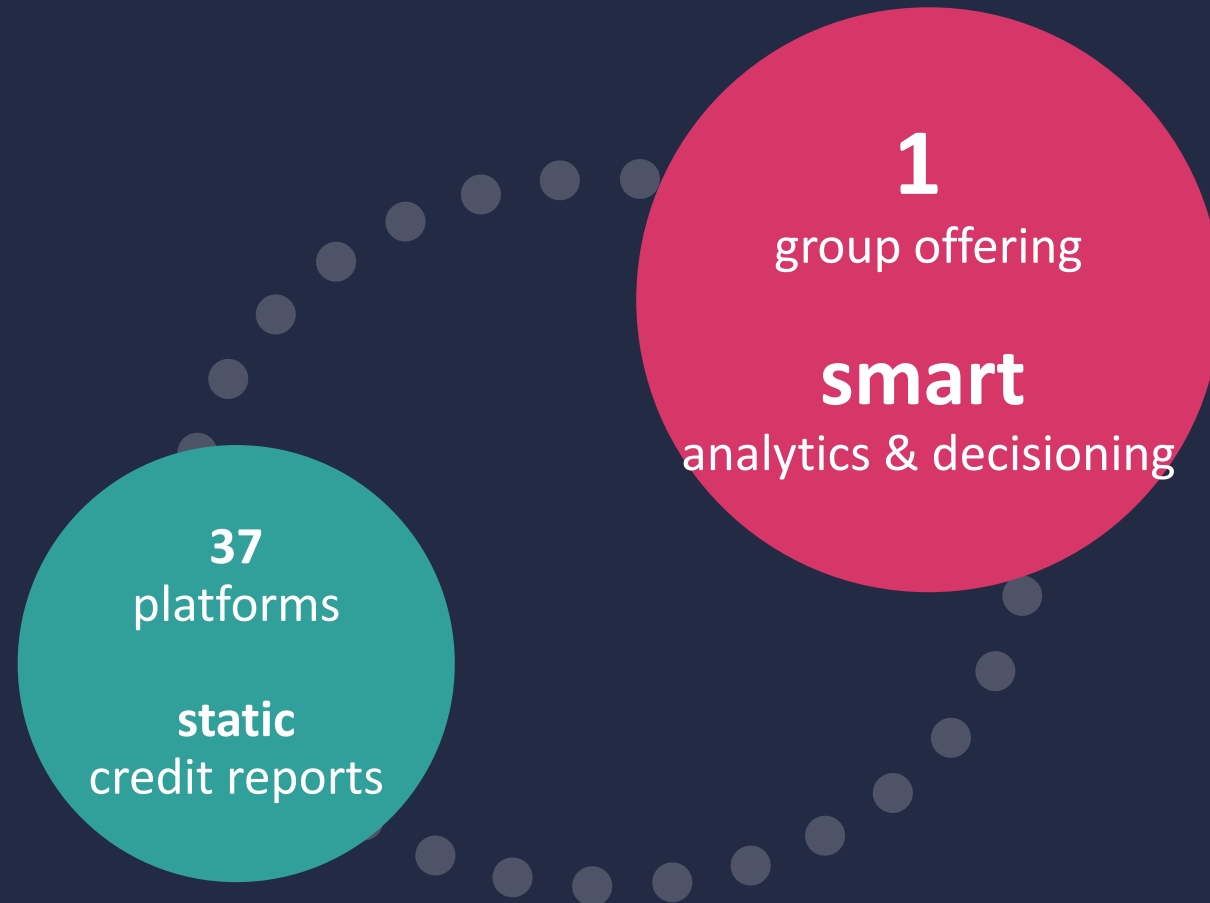


Dun & Bradstreet

30,000 data sources
250+ mil. companies



Business use case



Why ontology?



Why ontology?

Why not
?

What else
?

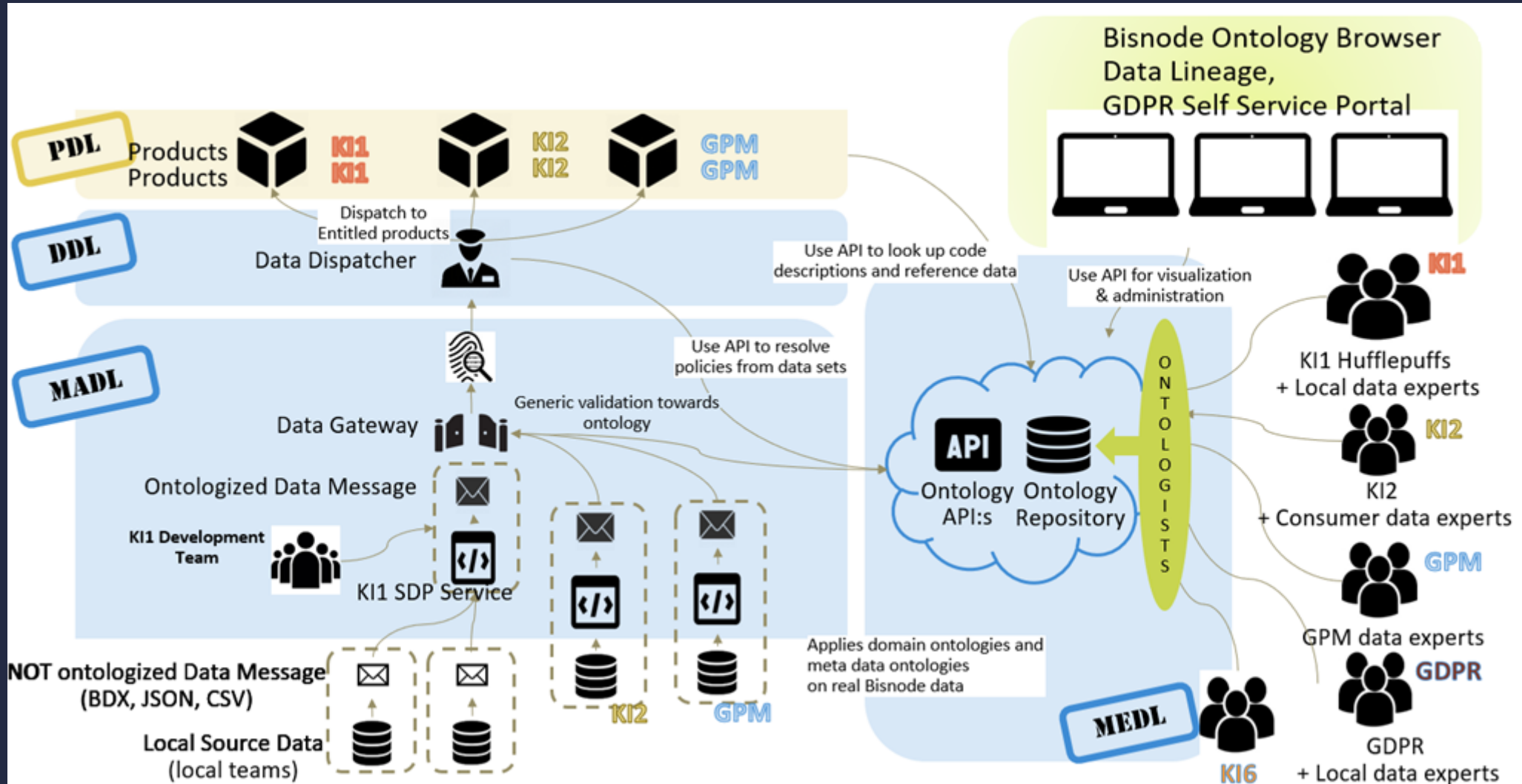
Why ontology?

Why not
?

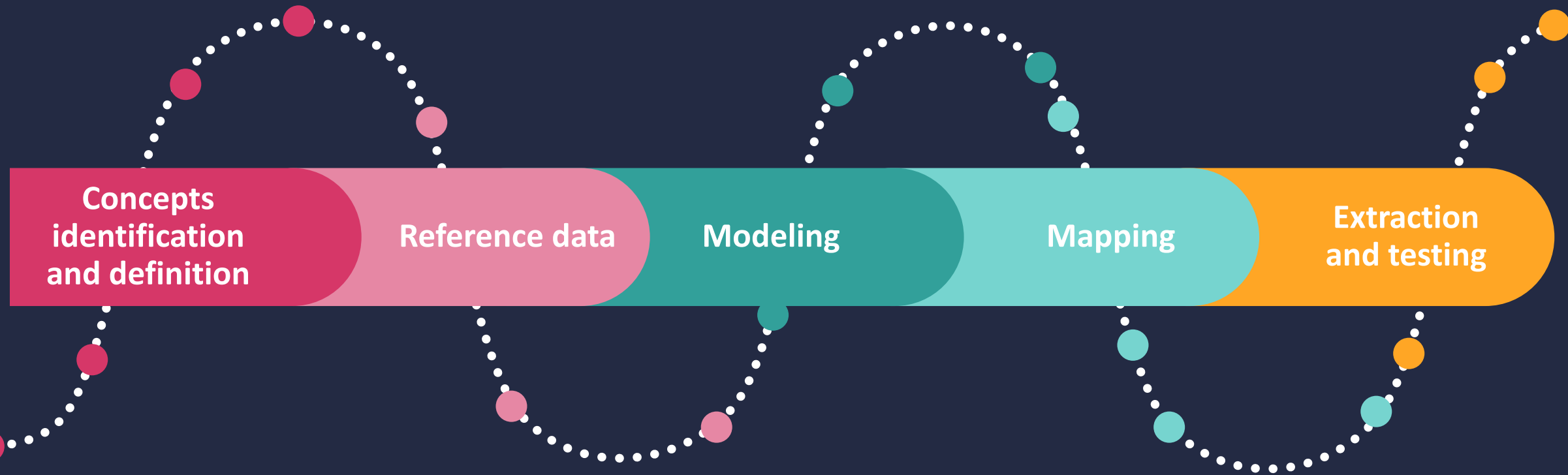
What else
?

Let's
DO IT!

Architecture



Process



Tools

	Ontology structure		English description	
Ctry	Topic	Data Element	Business description of data element.	Business Description - additional country spec comment
ALL	Address type	Visiting address	The primary or physical address of a subject. For a business this is the principal address at which the business is located; the Headquarters address.	
DE	Address type	Visiting address		In Germany, where a lot of companies have a legal form that is not registered in the German "Handelsregister" (German Company House holding the Trade Registration information), the visiting address is also the official legal address of those non-registered companies.
FI	Address type	Visiting address		Local format is street name, house number, stairway ID (normally a letter), apartment number.
SE	Address type	Visiting address	OK	
NO	Address type	Visiting address		
DK	Address type	Visiting address		

Tools

Ontology structure			
Ctry	Topic	Data Element	Business description of data element.
ALL	Address type	Visiting address	The primary or physical address of a subject. For a business this is the principal address at which the business is located; the Headquarters address.
DE	Address type	Visiting address	
FI	Address type	Visiting address	
SE	Address type	Visiting address	OK
NO	Address type	Visiting address	
DK	Address type	Visiting address	

Concepts identification and definition

BOB - HOW CAN I HELP YOU?

https://ontology.bisnode.net

Bisnode

Search

English

Bisnode Ontology Browser

HOW CAN I HELP YOU?

My name is BOB

SNEAK PEEK DASHBOARD

bob@bisnode.com

Mapping

Extraction and testing

Tools

Ontology structure			
Ctry	Topic	Data Element	Business description of data element.
ALL	Address type	Address type	The primary or physical address of a subject. For a business, the principal address at which the business is located; the address.
DE	Address type	Address type	
FI	Address type	Address type	
SE	Address type	Address type	OK
NO	Address type	Address type	
DK	Address type	Address type	

Concepts identification and definition

The screenshot shows a web browser window with the URL <https://ontology.bisnode.net/organization/de/LegalFormCode>. The interface includes a search bar, a language selector set to 'English', and a user profile icon. The main content is divided into three panels:

- List of all Classes:** A filter box contains 'Legal form'. A list of classes follows, including 'Austrian legal form code', 'Danish legal form code', 'Finnish legal form code', 'German legal form code' (highlighted), 'Norwegian legal form code', and 'Swedish legal form code'.
- German legal form code:** A detailed view of the selected class. It includes the IRI <http://ontology.bisnode.net/organization/de/LegalFormCode>, author 'bjoand1', and creation date '14. 06. 2017'. It also shows a hierarchy: 'Code' (core) > 'Legal form code' (organization) > 'German legal form code' (organization/de). Properties listed include 'has abbreviation value', 'has code value' (highlighted), 'has scots code', 'has string value', 'is member of', and 'Relates a member with its'.
- has code value:** A detailed view of the property. It specifies that this property specifies a code value, with IRI <http://ontology.bisnode.net/core/hasCodeValue>, author 'bjoand1', and creation date '12. 05. 2017'. It is defined in <http://ontology.bisnode.net/core>. The property may have the following types: 'string' and 'literal'.

Extraction and testing

Tools

Ontology structure			
Ctry	Topic	Data Element	Business description of data element.
ALL	Address type	Address type	The primary or physical address of a subject. For a business, the principal address at which the business is located; the visiting address.
DE	Address type	Address type	
FI	Address type	Address type	
SE	Address type	Address type	OK
NO	Address type	Address type	
DK	Address type	Address type	

Concepts identification and definition

The screenshot shows a web browser window with the URL <https://ontology.bisnode.net/organization/de/LegalFormC...>. The page displays a list of classes under the heading "List of all Classes". A modal window titled "German legal form code individuals" is open, showing a list of 42 individuals. The modal includes a "DOWNLOAD INDIVIDUALS" button and a list of legal form codes with their corresponding URIs.

German legal form code individuals (42)

DOWNLOAD INDIVIDUALS

- Foreign Company
/legalformcode/de/bisnode#3400002
- Temporary Association
/legalformcode/de/bisnode#3400012
- International Organisation
/legalformcode/de/bisnode#3400158
- Health Insurance Fund
/legalformcode/de/bisnode#3400162
- Friendly Society
/legalformcode/de/bisnode#3400163
- Religious Corporate Body
/legalformcode/de/bisnode#3400164
- Professional Association
/legalformcode/de/bisnode#3400191
- Municipal Institution
/legalformcode/de/bisnode#3400285
- Provincial Institution
/legalformcode/de/bisnode#3400286
- Registered Sole Proprietorship
/legalformcode/de/bisnode#3400291
- Non Registered Sole Proprietorship
/legalformcode/de/bisnode#3400292

Extraction and testing

Tools

Ontology structure	English description										
<table border="1"> <thead> <tr> <th>Ctry</th> <th>Topic</th> <th>Data Element</th> <th>Business description of data element.</th> <th>Business Description - additional country spec comment</th> </tr> </thead> <tbody> <tr> <td>ALL</td> <td>Address type</td> <td>Visiting address</td> <td>The primary or physical address of a subject. For a business this is the principal address at which the business is located; the Headquarters address.</td> <td></td> </tr> </tbody> </table>	Ctry	Topic	Data Element	Business description of data element.	Business Description - additional country spec comment	ALL	Address type	Visiting address	The primary or physical address of a subject. For a business this is the principal address at which the business is located; the Headquarters address.		
Ctry	Topic	Data Element	Business description of data element.	Business Description - additional country spec comment							
ALL	Address type	Visiting address	The primary or physical address of a subject. For a business this is the principal address at which the business is located; the Headquarters address.								
Subject/Data area	Basic descriptions and other prep.	Modeled	Model verified	Ontologised	Ontology verified						
Search data											
ID	Ok	Ok		Ok							
Address types	Ok			Ok							
Geolocation	Ok			Ok							
Name types	Ok	Ok		Ok							
Legal forms	Ok	Ok		Ok							
Contact info	Ok			Ok							
Status	Ok	Ok		Ok							
Registration info											
Industry code	Ok			Ok							
Business descr etc	Ok										
Registration info and dates	Ok	Ok		Ok							

Conc
identifi
and def

Extraction
and testing

Bisnode Ontology

HOW CAN I HELP YOU?

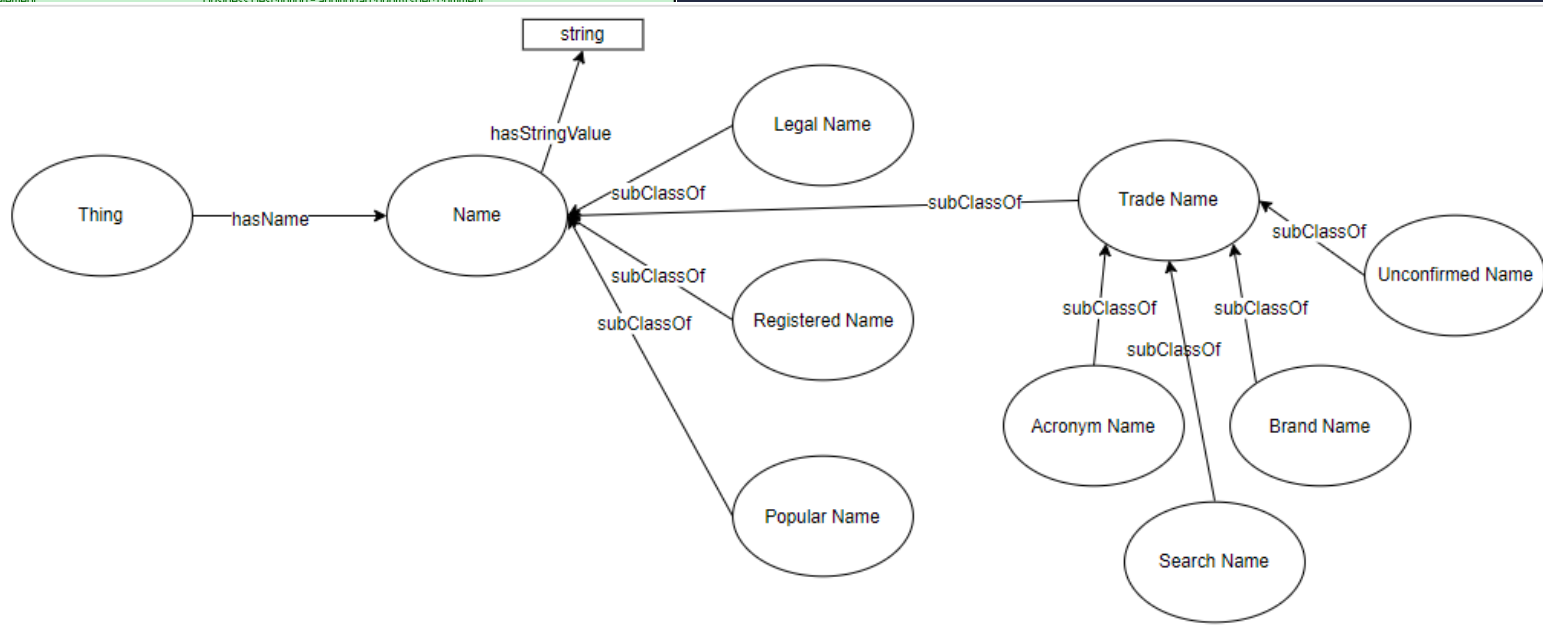
My name is BOB

SNEAK PEEK DASHBOARD

bob@bisnode.com

Tools

Ontology structure			English description
Ctry	Topic	Data Element	Business description of data element
ALL	Address type	Visiting address	The primary or physical address principal address at which the address.
DE	Address type	Visiting address	
FI	Address type	Visiting address	
SE	Address type	Visiting address	OK
NO	Address type	Visiting address	
DK	Address type	Visiting address	



Registration info				
Industry code	Ok			Ok
Business descr etc	Ok			
Registration info and dates	Ok	Ok		Ok

Concept identification and definition

BOB - HOW CAN I HELP YOU? x

https://ontology.bisnode.net

Bisnode Ontology Browser

HOW CAN I HELP YOU?

My name is BOB

SNEAK PEEK DASHBOARD

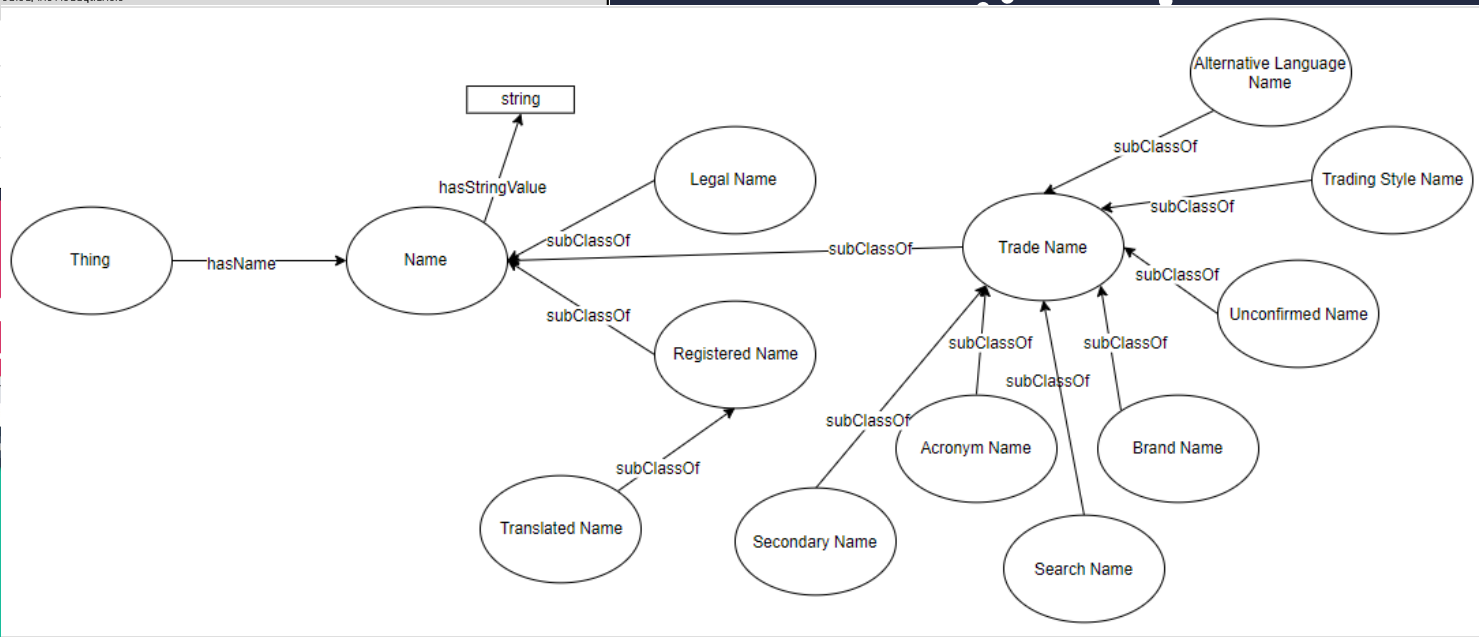
bob@bisnode.com

Extraction and testing

Tools

Ontology structure			English description	
Ctry	Topic	Data Element	Business description of data element.	Business Description - additional country spec comment
ALL	Address type	Visiting address	The primary or physical address of a subject. For a business this is the principal address at which the business is located; the Headquarters address.	
DE	Address type	Visiting address		
FI	Address type	Visiting address		
SE	Address type	Visiting address	OK	
NO	Address type	Visiting address		
DK	Address type	Visiting address		

Concepts identification and definition



Extraction and testing

Bisnode Ontology Browser

HOW CAN I HELP YOU?

My name is BOB

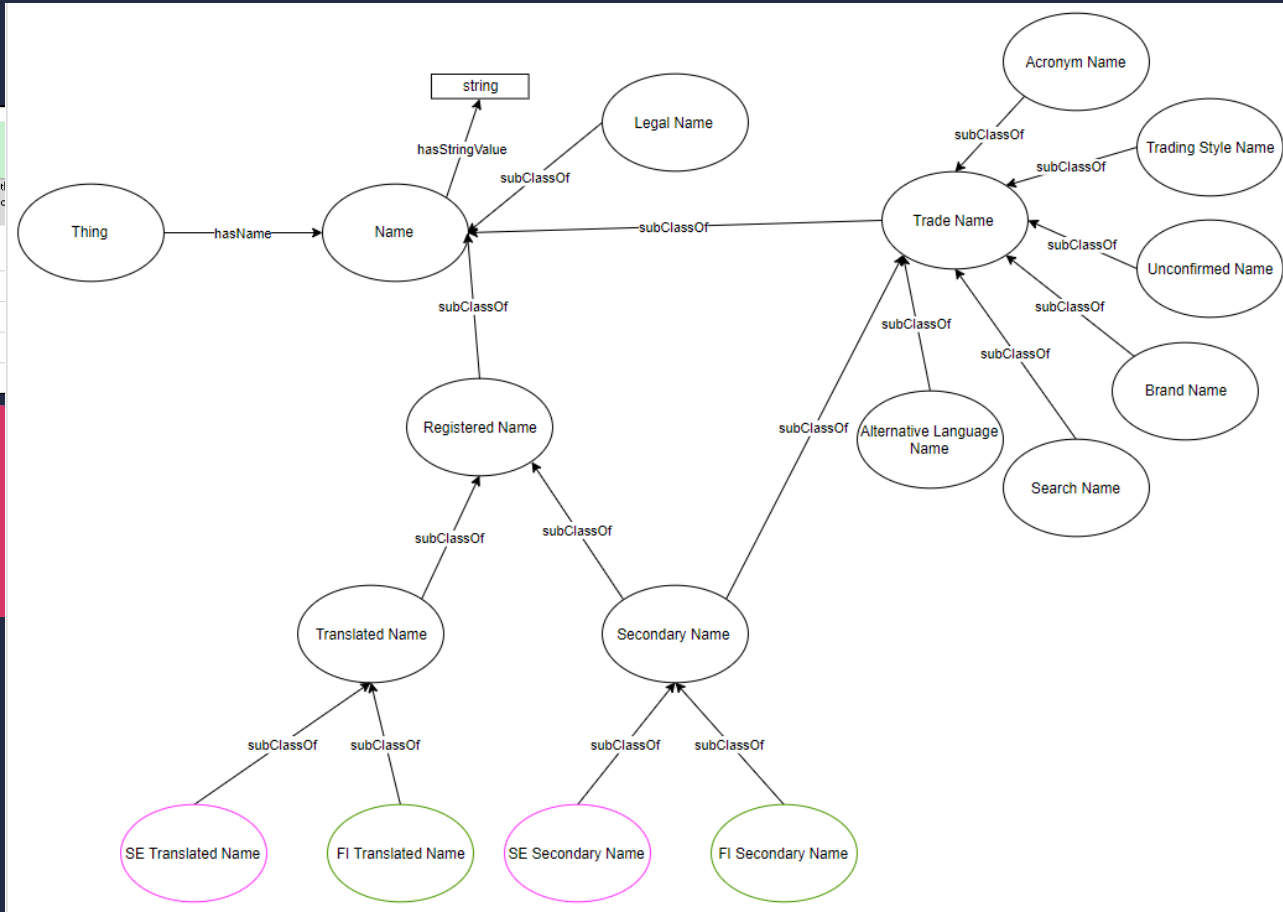
SNEAK PEEK DASHBOARD

bob@bisnode.com

Tools

Ontology structure			
Ctry	Topic	Data Element	Business description of data element.
ALL	Address type	Address type	The primary or physical address of a subject. For a business the principal address at which the business is located; the Head address.
DE	Address type	Visiting address	
FI	Address type	Visiting address	
SE	Address type	Visiting address	OK
ND	Address type	Visiting address	
DK	Address type	Visiting address	

Concepts identification and definition

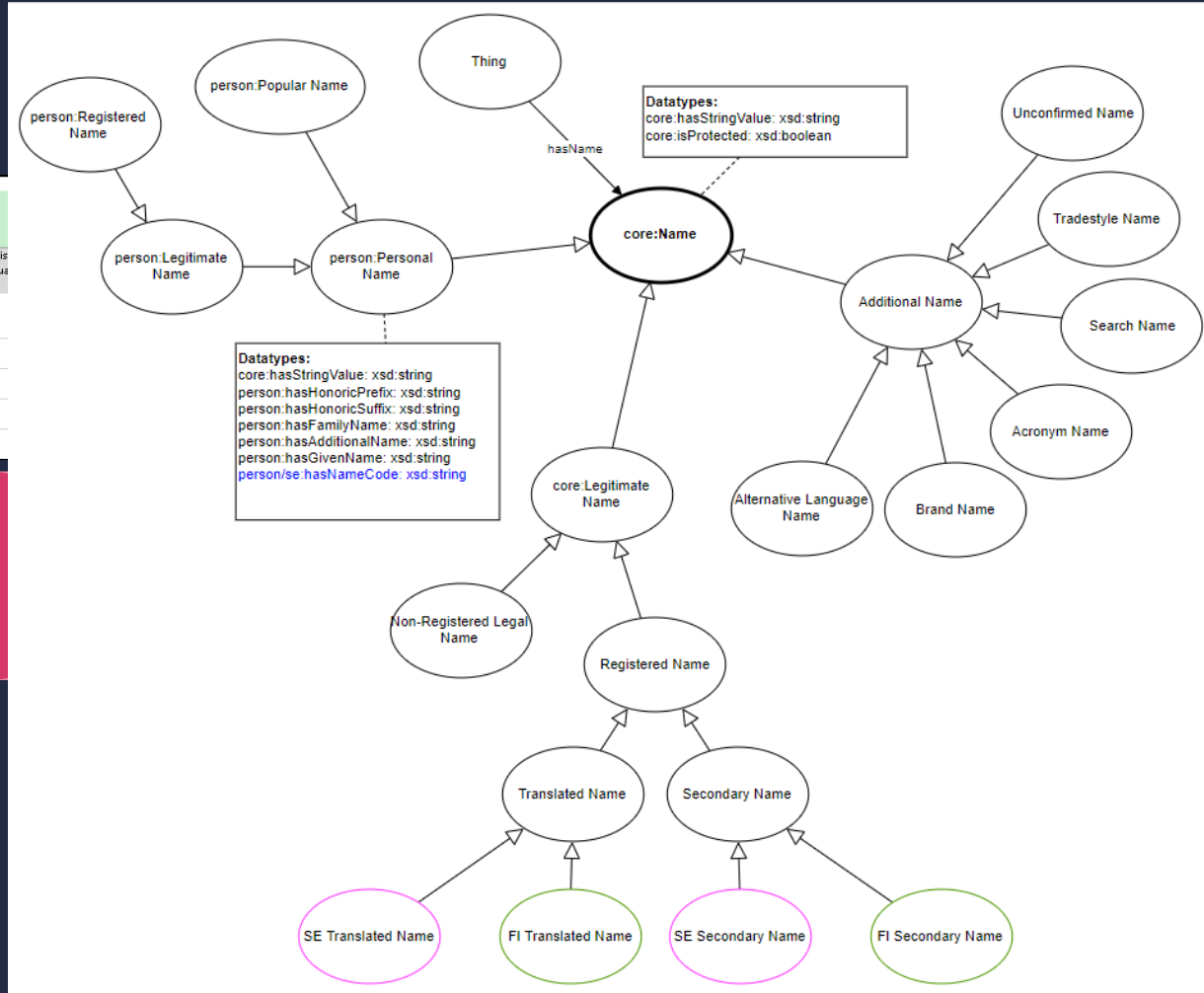
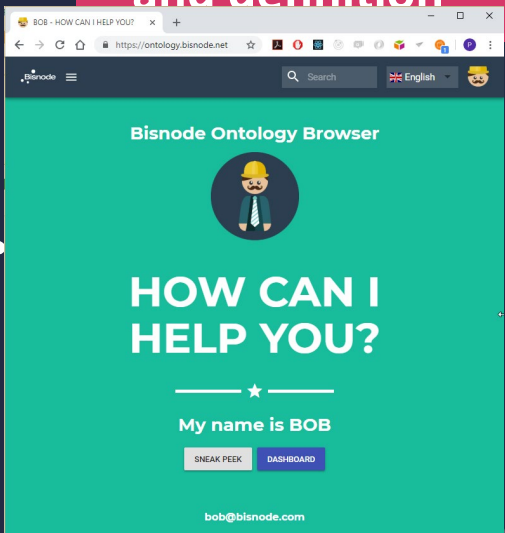


ing Extraction and testing

Tools

Ontology structure			
Country	Topic	Data Element	Business description of data element.
ALL	Address type	Visiting address	The primary or physical address of a subject. For a business this principal address at which the business is located; the Headquarters address.
DE	Address type	Visiting address	
FI	Address type	Visiting address	
SE	Address type	Visiting address	OK
NO	Address type	Visiting address	
DK	Address type	Visiting address	

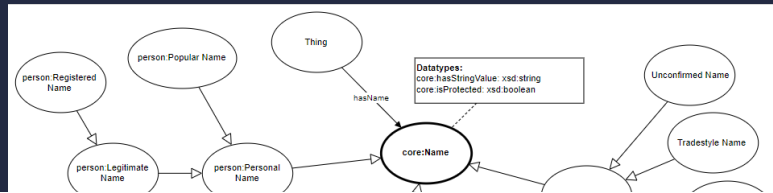
Concepts identification and definition



Mapping

Extraction and testing

Tools



mapping (http://ontology.bisnode.net/mapping) : [C:\Users\Patrik\Projects\ontology-bisnode\files\lx_mapping.owl]

File Edit View Reasoner Tools Refactor Window Mastro Ontop Help

Active Ontology x Entities x Individuals by class x DL Query x Individual Hierarchy Tab x

Class hierarchy: contact:VisitingAddress

- owns:Thing
 - contact:AddressPoint
 - contact:ContactRestriction
 - contact:ContactRestrictionChannel
 - contact:Dwelling
 - contact:Household
 - contact:ObjectWithContactRestrictions
 - contact:ContactPoint
 - contact:Address
 - contact:DomicileAddress
 - contact:PostalAddress

Annotations: map:VisitingAddress

- Annotations
 - rdfs:label [language: en] Universal VisitingAddress mapping instance
 - dc:creator [type: xsd:string] bjoand1
 - rdfs:isDefinedBy

Description: map:VisitingAddress

Property assertions: map:VisitingAddress

- Object property assertions
 - contact:hasAddressPoint
 - contact:hasAddressPoint map:VisitingAddressUnspecifiedAddress
 - core:hasValidityPeriod map:VisitingAddressPeriodOfTime
- Data property assertions
- Negative object property assertions
- Negative data property assertions

Types

- contact:VisitingAddress
- mapping:MappingRule

Same Individual As +

Different Individuals +

No Reasoner set. Select a reasoner from the Reasoner menu Show Inferences

Extraction and testing

Bisnode Ontology

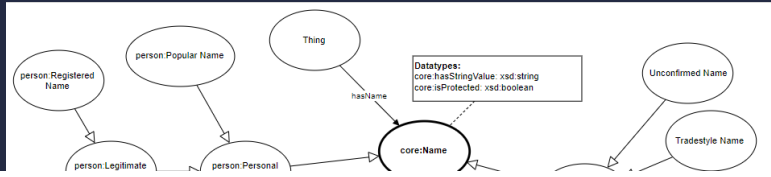
HOW CAN I HELP YOU?

My name is BOB

SNEAK PEEK DASHBOARD

bob@bisnode.com

Tools



German Registration Number

Item	Details	Comments and rules
BDX Element	<p><COMPANY> <REGISTRATION_INFO> <* type_code="2040143"> <NUMBER></p> <p>@UUID:ef4bf15c-9970-4a24-8721-5b703715637a</p>	<p>The * represents <REG_NUMBER> and <FORMER_REG_NUMBER>.</p> <p>The German Registration Number "Handelsregisternummer" is – generally speaking - neither mandatory nor unique.</p> <p>It is mandatory though for specific legal forms. And it becomes unique only if Prefix, Number, Suffix get combined with the location of the court that issued the number, namely the Postcode of the city of registration. Therefore, the mapping takes all of those components into consideration.</p> <p>The German Registration Number has to have a Prefix and the number itself. A Suffix does not always exist.</p>
	<p><COMPANY> <REGISTRATION_INFO> <* type_code="2040143"> <NUMBER_PREFIX></p> <p>@UUID:55256a00-3ea8-4d97-ba94-0fe37884e750</p>	<p>Prefix can have various values, e.g. HRA, HRB, PR, VR (no fixed length)</p> <p>Number is purely numeric, the number of digits varies between 1 and x</p> <p>Suffix - if applicable - is alphanumeric with no fixed length</p>
	<p><COMPANY> <REGISTRATION_INFO> <* type_code="2040143"> <NUMBER_SUFFIX></p> <p>@UUID:ee037c65-7a66-47c4-a34b-7ce06faabae6</p>	<p>Example 1: Create the Complete Identifier value by combining Prefix (e.g. HRB) and number (123456) to the full Registration number =HRB123456</p> <p>Example 2 (with Suffix): Create the Complete Identifier value by combining Prefix (e.g. HRB) and number (123456) and Suffix (Ad) to the full Registration number =HRB123456Ad</p>
	<p><COMPANY> <REGISTRATION_INFO> <* type_code="2040143"> <NUMBER_PREFIX> followed by <REGISTRATION_INFO> <* type_code="2040143"> <NUMBER> and <COMPANY> <REGISTRATION_INFO> <* type_code="2040143"> <NUMBER_SUFFIX></p> <p>@UUID:650c2831-a5c8-45eb-b793-bf268eb359c3</p>	

Ontology structure			
Ctry	Topic	Data Element	Business
ALL	Address type	Visiting address	The principal address
DE	Address type	Visiting address	
FI	Address type	Visiting address	
SE	Address type	Visiting address	OK
NO	Address type	Visiting address	
DK	Address type	Visiting address	

Complete Identifier and d

Bob - HOW CAN I HELP YOU? x

https://ontology.bisnode.net

Bisnode Onto

HOW HELP

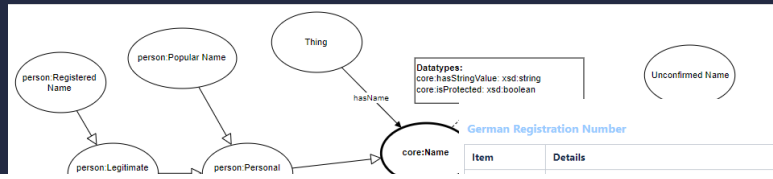
My name is BOB

SNEAK PEEK DASHBOARD

bob@bisnode.com

raction testing

Tools



Ontology structure			
Ctry	Topic	Data Element	Business description of data
ALL	Address type	Visiting address	The primary or physical address at which address.
DE	Address type	Visiting address	
FI	Address type	Visiting address	
SE	Address type	Visiting address	DK
ND	Address type	Visiting address	
DK	Address type	Visiting address	

```

1 {
2   "org/de:Company": {
3     "con:hasContactPoint": {
4       "con:EmailAddress": {
5         "con:hasEmailValue": "@UUID:01f2975c-f809-443d-9813-91143832ac1f"
6       },
7     },
8     "con:Fax": {
9       "con:hasAreaCode": "@UUID:17389a77-70da-466c-a883-1a07f32be695",
10      "con:hasCompleteTelephoneNumberString": "@UUID:fd309635-9c05-4f2b-a756-03061e02c62e",
11      "con:hasCountryCode": "@UUID:2ab29dce-9ca5-4a5a-9032-cfe35a44c0f4",
12      "con:hasSubscriberNumber": "@UUID:e90126f3-3577-4cde-95b4-df2ca136dab8"
13    },
14    "con:Landline": {
15      "con:hasAreaCode": "@UUID:935163bb-8a0a-4e7b-b7a6-81d3c733b830",
16      "con:hasCompleteTelephoneNumberString": "@UUID:79dc26fc-9416-415d-99da-a1dda1333f85",
17      "con:hasCountryCode": "@UUID:fc3876a2-be33-48af-a833-0217714701c9",
18      "con:hasSubscriberNumber": "@UUID:0fd94e34-97a3-4d58-ac4d-e837c45a0bfe"
19    },
20    "con:Mobile": {
21      "con:hasAreaCode": "@UUID:0d7b5519-3344-451e-8e81-882dae2b17b2",
22      "con:hasCompleteTelephoneNumberString": "@UUID:7d50be8a-13ad-4c4e-baf6-234e1df9bf7f",
23      "con:hasCountryCode": "@UUID:99974c37-6775-463d-b2ca-50c8e04082fc",
24      "con:hasSubscriberNumber": "@UUID:c8e60906-c67f-40ef-81c4-dac24db00068"
25    },
26    "con:PostalAddress": {
27      "con:hasAddressPoint": {
28        "con:AddressPoint": {
29          "geo:isLocatedIn": {
30            "geo/de:PostalTown": {
31              "cor:hasStringValue": "@UUID:054bbfc8-219e-4b19-b64c-5cebf7375084"
32            }
33          }
34        }
35      }
36    }
37  }
38 }
  
```

Extraction and testing

Concept identification and definition

HOW CAN I HELP YOU

My name is BOB

SNEAK PEEK DASHBOARD

bob@bisnode.com

Tools

Ontology structure			
Ctry	Topic	Data Element	Business description of data e
ALL	Address type	Visiting address	The primary or physical address principal address at which the address.
DE	Address type	Visiting address	
FI	Address type	Visiting address	
SE	Address type	Visiting address	OK
ND	Address type	Visiting address	
DK	Address type	Visiting address	

Concept
identification
and definition

BOB - HOW CAN I HELP YOU? x

https://ontology.bisnode.net

Bisnode Ontology Browser

HOW CAN I HELP YOU?

My name is BOB

SNEAK PEEK DASHBOARD

bob@bisnode.com

```
1 {
2   "$schema": "http://json-schema.org/draft-07/schema#",
3   "additionalProperties": false,
4   "definitions": {
5     "references": {
6       "aud_de:AuditReport": {
7         "additionalProperties": false,
8         "properties": {
9           "aud:hasAuditingLevelCode": {
10            "additionalProperties": false,
11            "properties": {
12              "aud/de:AuditingLevelCode": {
13                "$ref": "#/definitions/references/aud_de:AuditingLevelCode"
14              }
15            },
16            "type": "object"
17          },
18          "type": "object"
19        },
20      },
21      "aud_de:AuditingLevelCode": {
22        "additionalProperties": false,
23        "items": {
24          "additionalProperties": false,
25          "properties": {
26            "cor:referenceIRI": {
27              "type": "string"
28            }
29          },
30          "type": "object"
31        },
32        "properties": {
33          "cor:referenceIRI": {
34            "type": "string"
35          }
36        }
37      }
38    }
39  }
```

MBER>

" is – generally speaking - **neither mandatory nor**

mes unique only if Prefix, Number, Suffix get mber, namely the Postcode of the city of registration consideration.

the number itself. A Suffix does not always exist.

```
{
  "@id": "http://ontology.bisnode.net/ontology/aud_de:AuditReport",
  "@type": "http://ontology.bisnode.net/ontology/aud_de:AuditReport",
  "aud:hasAuditingLevelCode": {
    "@id": "http://ontology.bisnode.net/ontology/aud_de:AuditingLevelCode",
    "@type": "http://ontology.bisnode.net/ontology/aud_de:AuditingLevelCode",
    "aud/de:AuditingLevelCode": {
      "@id": "http://ontology.bisnode.net/ontology/aud_de:AuditingLevelCode",
      "@type": "http://ontology.bisnode.net/ontology/aud_de:AuditingLevelCode",
      "cor:referenceIRI": "http://ontology.bisnode.net/ontology/aud_de:AuditingLevelCode"
    }
  },
  "cor:referenceIRI": "http://ontology.bisnode.net/ontology/aud_de:AuditingLevelCode"
}
```

Extraction
and testing



Tools



id key value

Number of messages 100 Show raw data

id: DK00000001 type: http://ontology.bisnode.net/organization/dk/Company

```

▶ _id:Object {"timestamp":1538384533,"machineIdentifier":2386060,"processIdentifier":1,"counter":7706385,"date":1538384533}
▶ header:Object {"uniqueIdentifier":{"keys":["ontologyReference":"org/dk:RegistrationNumber"],"value":"DK00000001"}},
▼ data:
  ▼ org/dk:Company:
    ▼ cor:isIdentifiedBy:
      ▼ org/dk:RegistrationNumber:
        cor:hasCompleteIdentifierValue:"DK00000001"
        cor:hasPrefix:"DK"
        cor:hasValue:"00000001"
      ▼ org:hasSetOfIndustryCodes:
        ▼ org:IndustryCodeSet:
          ▶ cor:hasValidityPeriod:Object {"cor:PeriodOfTime":{"cor:hasStartDate":{"cor:Date":{"cor:hasDateTimeValue":1538384533}}}}
          ▼ org:hasPrimaryIndustryCode:
            ▼ ind/dk/db07:Subdivision:
              ▼ 0:
                cor:referenceIRI:"http://ontology.bisnode.net/industrycode/dk/db07#829100"
          ▶ org:hasIndustryCode:Object {"ind/dk/db07:Subdivision":{"cor:referenceIRI":"http://ontology.bisnode.net/industrycode/dk/db07#829100"}}
        ▶ @context:Object {"cor":"http://ontology.bisnode.net/core/","org":"http://ontology.bisnode.net/organization/","org":http://ontology.bisnode.net/organization/dk/Company:Object {"http://ontology.bisnode.net/core/isIdentifiedBy":{"http://ontology.bisnode.net/core/isIdentifiedBy":{"cor:isIdentifiedBy":{"cor:hasCompleteIdentifierValue:"DK00000001","cor:hasPrefix:"DK","cor:hasValue:"00000001"},"org:hasSetOfIndustryCodes":{"org:IndustryCodeSet":{"cor:hasValidityPeriod":{"cor:hasDateTimeValue":1538384533},"org:hasPrimaryIndustryCode":{"ind/dk/db07:Subdivision":{"cor:referenceIRI:"http://ontology.bisnode.net/industrycode/dk/db07#829100"},"org:hasIndustryCode":{"ind/dk/db07:Subdivision":{"cor:referenceIRI:"http://ontology.bisnode.net/industrycode/dk/db07#829100"}}}}}}}}}}
  
```

MBER> and <FORMER_REG_NUMBER>.
 umber "Handelsregisternummer" is – generally speaking - **neither mandatory nor**
 specific legal forms. And it becomes unique only if Prefix, Number, Suffix get
 of the court that issued the number, namely the Postcode of the city of registration
 as all of those components into consideration.
 umber has to have a Prefix and the number itself. A Suffix does not always exist.

```

{
  "org/dk:Company": {
    "cor:hasContactPoint": {
      "contactAddress": {
        "cor:hasAddressValue": "@@ID:01f2975c-f989-4636-9813-911438326c1f"
      }
    },
    "confax": {
      "cor:hasAreaCode": "@@ID:17389a77-78ca-466c-a883-1a07f32be095",
      "cor:hasCompleteTelephoneNumberString": "@@ID:f4806930-1600-4d2d-b756-d3061e02c2e",
      "cor:hasCountryCode": "@@ID:2a203b2e-9a31-464a-a833-0d17714761c9",
      "cor:hasSubscriberNumber": "@@ID:e90126f3-3577-4c0e-9104-of2ca136ca0a"
    },
    "conLandline": {
      "cor:hasAreaCode": "@@ID:9351610b-ba8a-4e7b-8746-81037330830",
      "cor:hasCompleteTelephoneNumberString": "@@ID:786c26fc-9416-415d-910a-a100a1333485",
      "cor:hasCountryCode": "@@ID:f4806930-1600-4d2d-b756-d3061e02c2e",
      "cor:hasSubscriberNumber": "@@ID:0f09434-07a3-4c58-ac46-a837c45400fa"
    },
    "conMobile": {
      "cor:hasAreaCode": "@@ID:0070519-334a-451e-8681-8820ee021702",
      "cor:hasCompleteTelephoneNumberString": "@@ID:705b0e0a-13ac-4e4e-baf6-2341e0907f7",
      "cor:hasCountryCode": "@@ID:99974c37-0775-463a-b21a-582e0a002fc",
      "cor:hasSubscriberNumber": "@@ID:c8e0000e-c87f-40ef-8114-0e24d00000e"
    },
    "conPostalAddress": {
      "conAddressPoint": {
        "conAddressPoint": {
          "geo:isLocation": {
            "geo:hasPostcode": "@@ID:0840bfc0-113e-4019-804c-5ce073735084",
            "cor:hasStringValue": "@@ID:0840bfc0-113e-4019-804c-5ce073735084"
          }
        }
      }
    }
  }
}
  
```

Extraction and testing

```

{
  "$schema": "http://json-schema.org/draft-07/schema#",
  "additionalProperties": false,
  "definitions": {
    "references": {
      "aud_de:auditReport": {
        "additionalProperties": false,
        "properties": {
          "aud:hasAuditingLevelCode": {
            "additionalProperties": false,
            "properties": {
              "aud:de:auditingLevelCode": {
                "$ref": "#/definitions/references/aud_de:AuditingLevelCode"
              }
            }
          },
          "type": "object"
        }
      },
      "aud_de:auditingLevelCode": {
        "additionalProperties": false,
        "items": {
          "additionalProperties": false,
          "properties": {
            "cor:referenceIRI": {
              "type": "string"
            }
          },
          "type": "object"
        }
      },
      "properties": {
        "cor:referenceIRI": {
          "type": "string"
        }
      }
    }
  }
}
  
```

Ontology structure			
Ctry	Topic	Data Element	Business description of data element.
ALL	Address type	Visiting address	The primary or physical address of a subsidiary principal address at which the business is address.
DE	Address type	Visiting address	
FI	Address type	Visiting address	
SE	Address type	Visiting address	DK
ND	Address type	Visiting address	
DK	Address type	Visiting address	

Concepts identification and definition

BOB - HOW CAN I HELP YOU?

https://ontology.bisnode.net

Bisnode Ontology Browser

HOW CAN I HELP YOU?

My name is BOB

SNEAK PEEK DASHBOARD

bob@bisnode.com

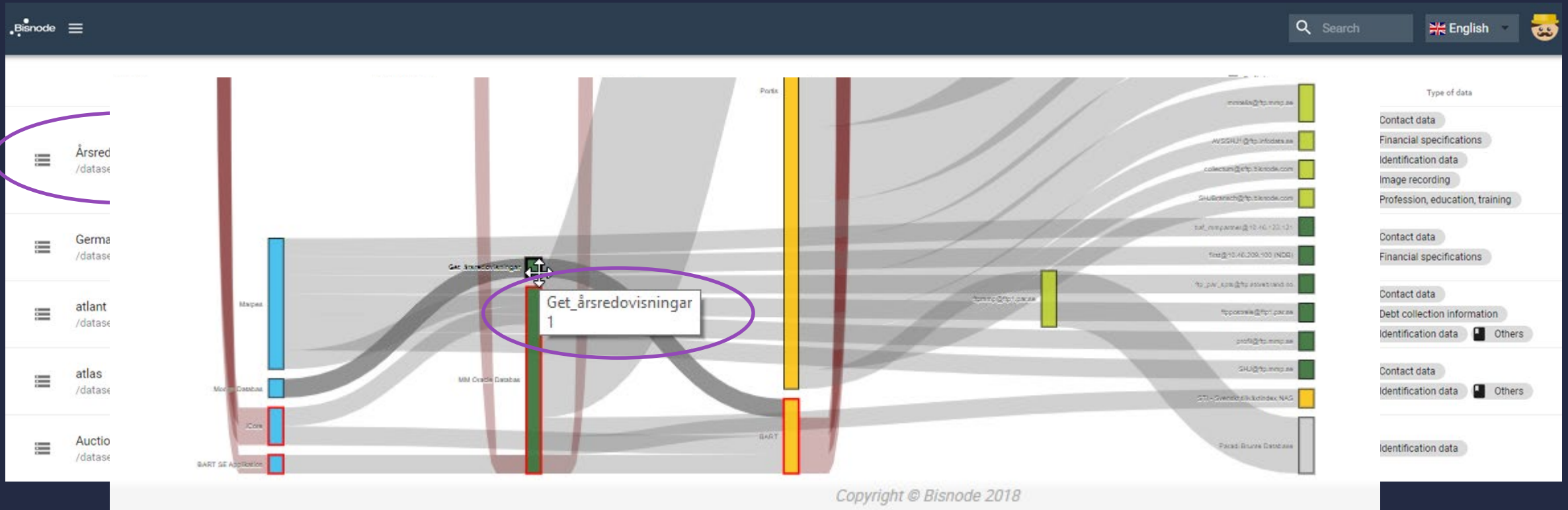


GDPR

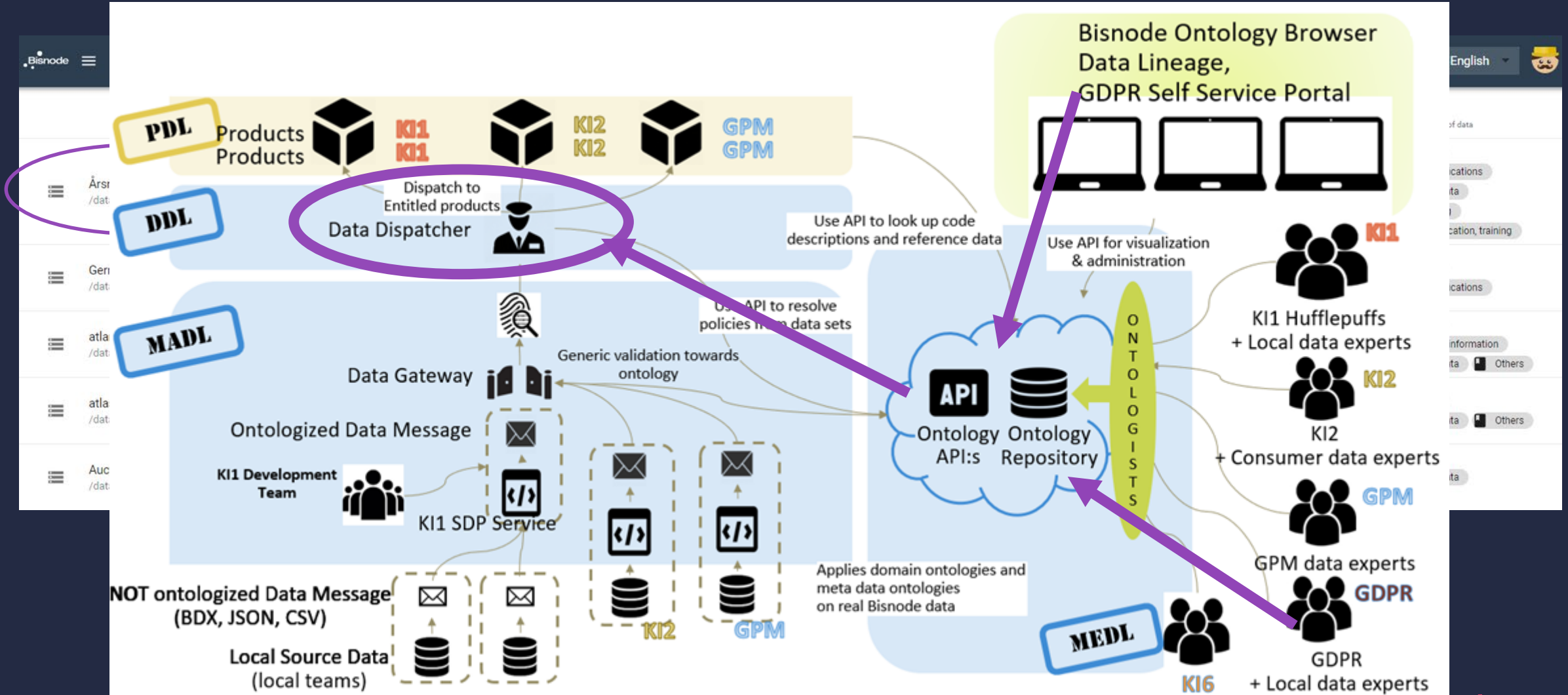
The screenshot shows the Bisnode data catalog interface. At the top, there is a search bar and a language selector set to 'English'. Below the header, a table lists several datasets with columns for DataSet, Data manager, Data owner, Country, Legal ground, Policies Purpose, and Type of data. The first row, 'Årsredovisningar', is circled in purple.

DataSet	Data manager	Data owner	Country	Legal ground	Policies Purpose	Type of data
Årsredovisningar /dataset#annualReportsSe	Susanna	Lars	Sweden	Legitimate interest	Analyze, Credit, Directory, Marketing, Statistics, Verification and control	Contact data, Financial specifications, Identification data, Image recording, Profession, education, training
Germany Source Data /dataset#atlantData	Jesper	Ina	Denmark	Local legislation	Verification and control	Contact data, Financial specifications
atlant /dataset#atlantDataDe	BED	BED	Germany	Legitimate interest, Public interest	Analyze, Credit, Marketing	Contact data, Debt collection information, Identification data, Others
atlas /dataset#atlasData	BED	BED	Germany	Legitimate interest, Public interest	Analyze, Credit, Marketing	Contact data, Identification data, Others
Auctions SI /dataset#auctionDataSi	Drago	Benjamin	Slovenia	Legitimate interest	Credit, Marketing	Identification data

GDPR



GDPR



Challenges

Human
resources

Challenges

Human
resources

“Classic”
developers

Challenges

Human
resources

Constant need
of explanation
and convincing

“Classic”
developers

Challenges

Human
resources

Constant need
of explanation
and convincing

Priority
changes

“Classic”
developers

Challenges

Human
resources

Constant need
of explanation
and convincing

Priority
changes

“Classic”
developers

Slow results
at
initial stage

Questions?

Thank you!



