ERS

Electronic Record Services B.V.

HSE DEMO

Introduction

2 and 3 December 2013

© ERS 2013

HSE DEMO

SAM editor

SAM Environment

SIA's

ERS

Electronic Record Services BV

1- Business requirements and Dataset

2- SAM editor introduction: constructing a dataset

3- The SAM editor life demo

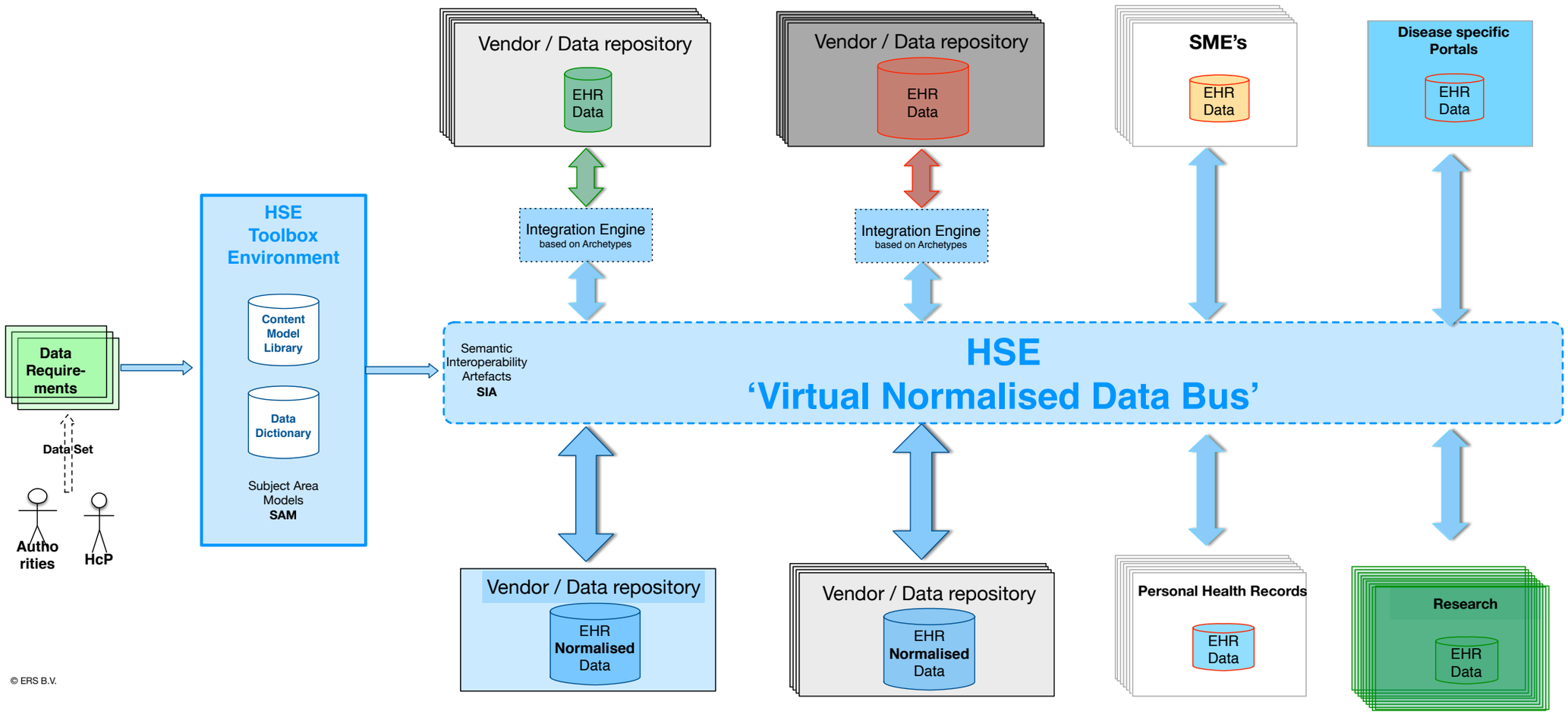
4- Semantic Interoperability Artefacts (SIA's)

5- SAM Environment (tbd)

© ERS 2013

ERS

Electronic Record Services BV

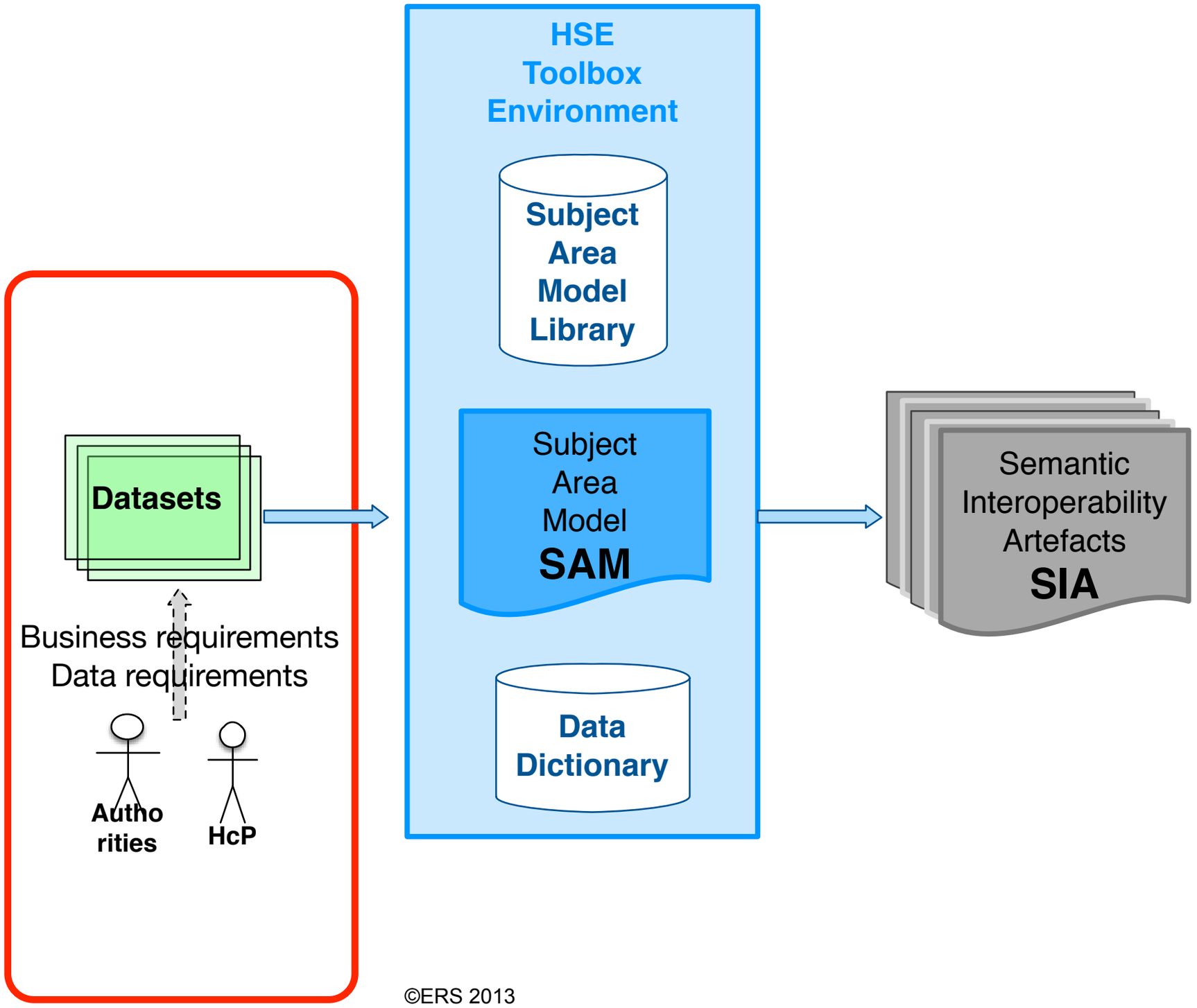


© ERS B.V.

©ERS 2013

From 'Information' Requirements to Semantic Interoperability Artefacts

ERS
Electronic Record Services BV



©ERS 2013

ERS

Electronic Record Services BV

Business needs
Data needs

Stakeholders:

- Healthcare providers
- Health organisations
- Payors
- Authorities
- Research

Stakeholders have ‘information’ needs

Each for its own business needs

© ERS 2013

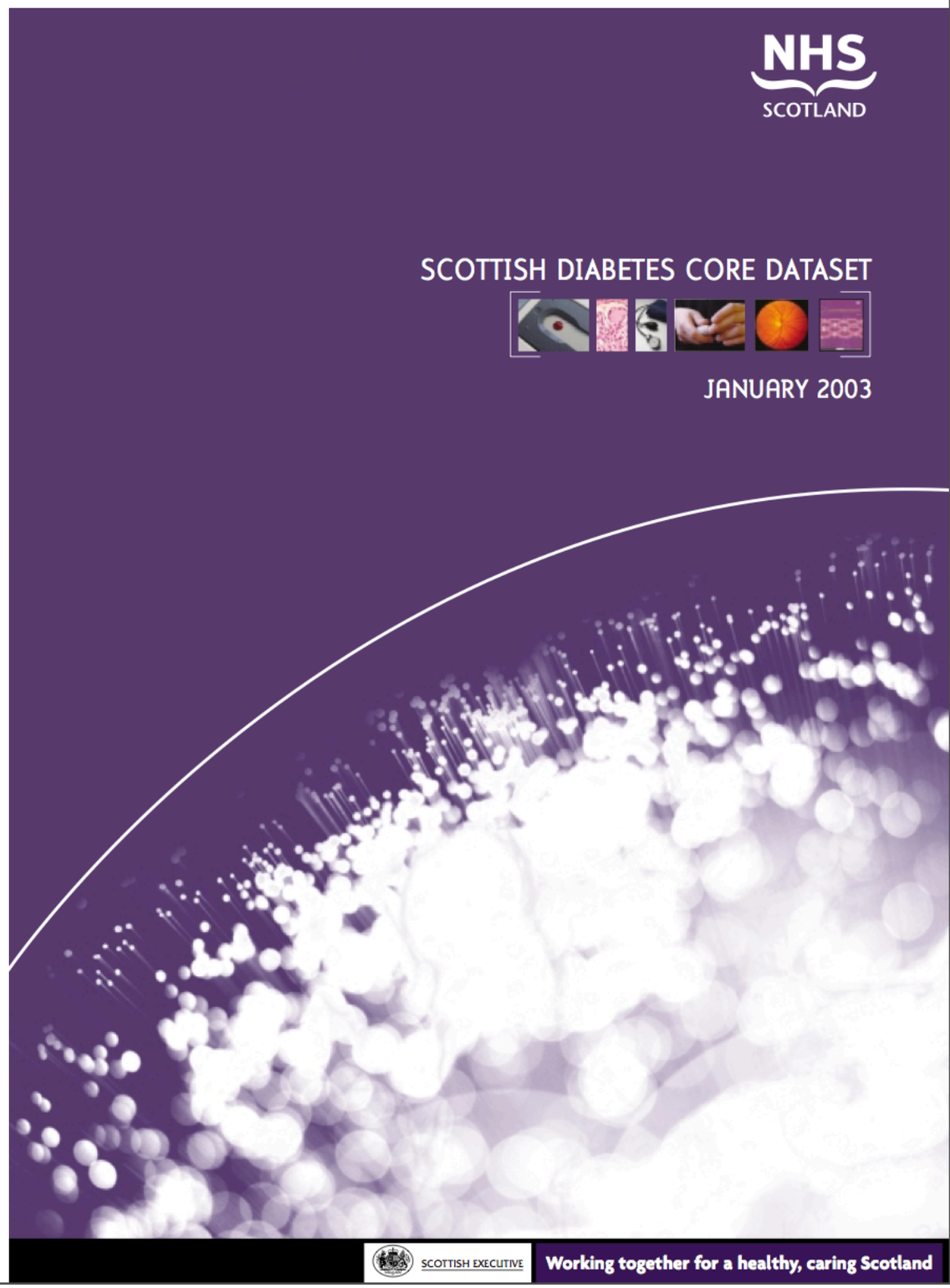
ERS

Electronic Record Services BV

Datasets

‘Information’ needs (Data needs) are expressed as:

Datasets



© ERS 2013

ERS

Electronic Record Services BV

Datasets
Kinds of ...

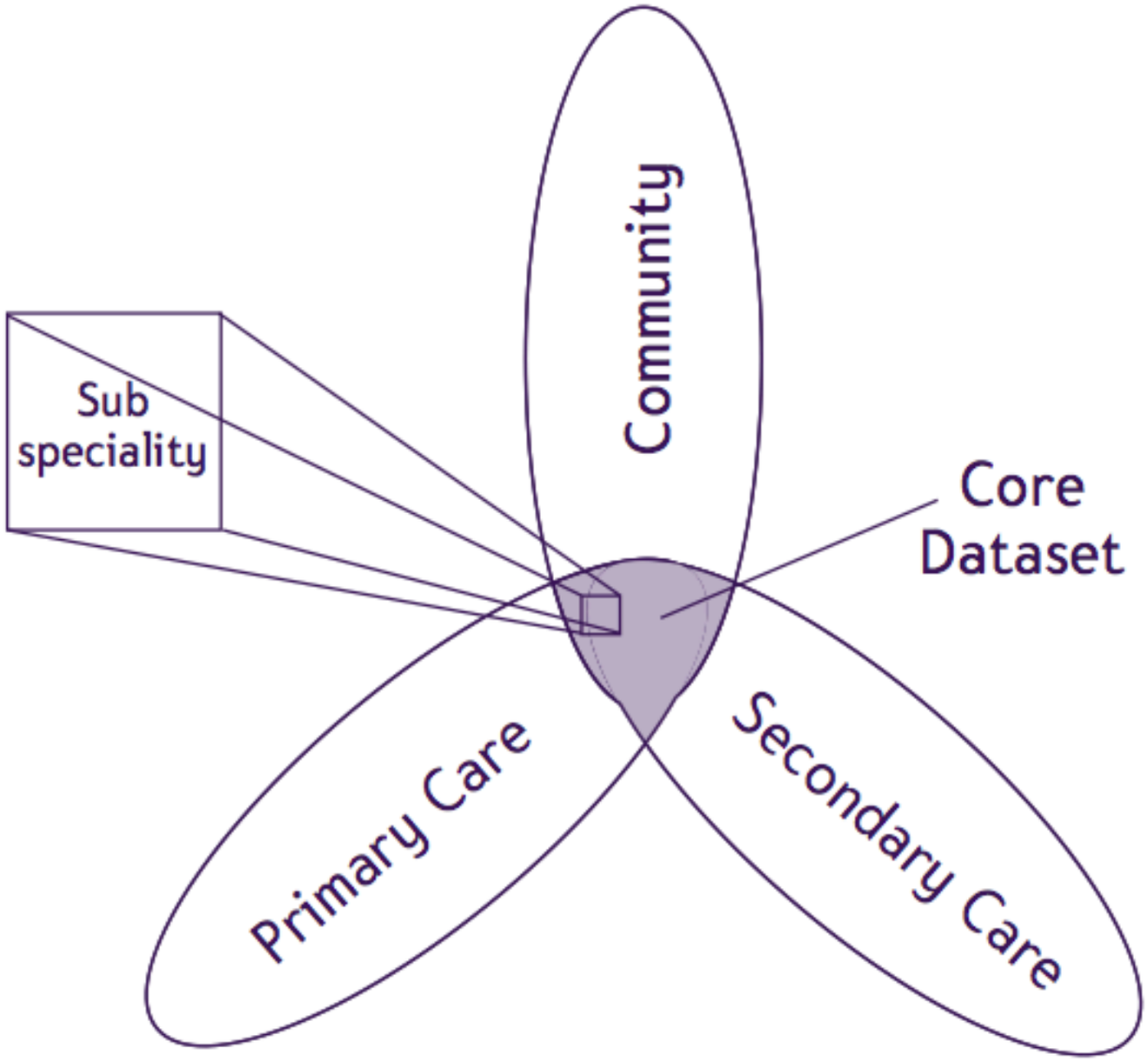


Figure 1: The Scottish Diabetes Core Dataset and the architecture of diabetes data

©ERS 2013

Scottish Diabetes Core Dataset

CONTENTS

	Page
Foreword	3
Introduction	4
Explanatory Notes	8
Scottish Diabetes Core Dataset	10
Annexes	
A SCI-DC – Scottish Care Information Diabetes Collaboration	52
B Clinical Coding in the NHS	54
C Sources of Useful Information	57

©ERS 2013

ERS

Electronic Record Services BV

Dataset example

Reference number	Field name	Description	Parameter	Read term	Read code
1	PT_NHS	Community Health Index (CHI) number for Scotland	10 digits	Patient CHI number	915B.
2	PT_ID	Principal treating hospital patient number	14 characters	Patient hospital number	915D.
3	HOSP_ID	Principal treating hospital identifier	6 characters	Hospital reference number	9R6..
4	PRACID	General practice identifier	6-digit practice code		
5	GP_CODE	Registered GP identifier (GMC Code)	7 digits (GMC No. format)	General Medical Practitioner	03DC.
6	GPC_CODE	GMC Code of GP to whom correspondence should be addressed	7 digits (GMC No. format)		
7	SURNAME	Present surname	20 characters	Patient surname	9152.

ERS

Electronic Record Services BV

Dataset example

Reference number	Field name	Description	Parameter	Read term	Read code
31	WEIGHT	Patient weight	>0 – 300 kg (nnn.nn)	O/E – weight	22A..
32	HEIGHT	Patient height	>0 – 2.50 m (nnn.nnn)	O/E – height	229..
33	BMI	Patient body mass index	(nn.n) kg/m^2	Body Mass Index	22K..
34	SBP	Systolic blood pressure	(nnn) mmHg	O/E – Systolic BP reading	2469.
35	DBP	Diastolic blood pressure	(nnn) mmHg	O/E – Diastolic BP reading	246A.
36	SMOKER	Smoking status at date of contact	heading	Tobacco consumption	137..
			1 = Current smoker	Current smoker	137R.
			2 = Ex smoker	Ex smoker	137S.
			3 = Never smoked	Never smoked tobacco	1371.
37	STOPSMOK	Year patient stopped smoking	yyyy	Date ceased smoking	137T.
38	ALCHOHOL	Alcohol intake per average week	(nn) units	Alcohol consumption	136..

©ERS 2013

ERS

Electronic Record Services BV

Dataset

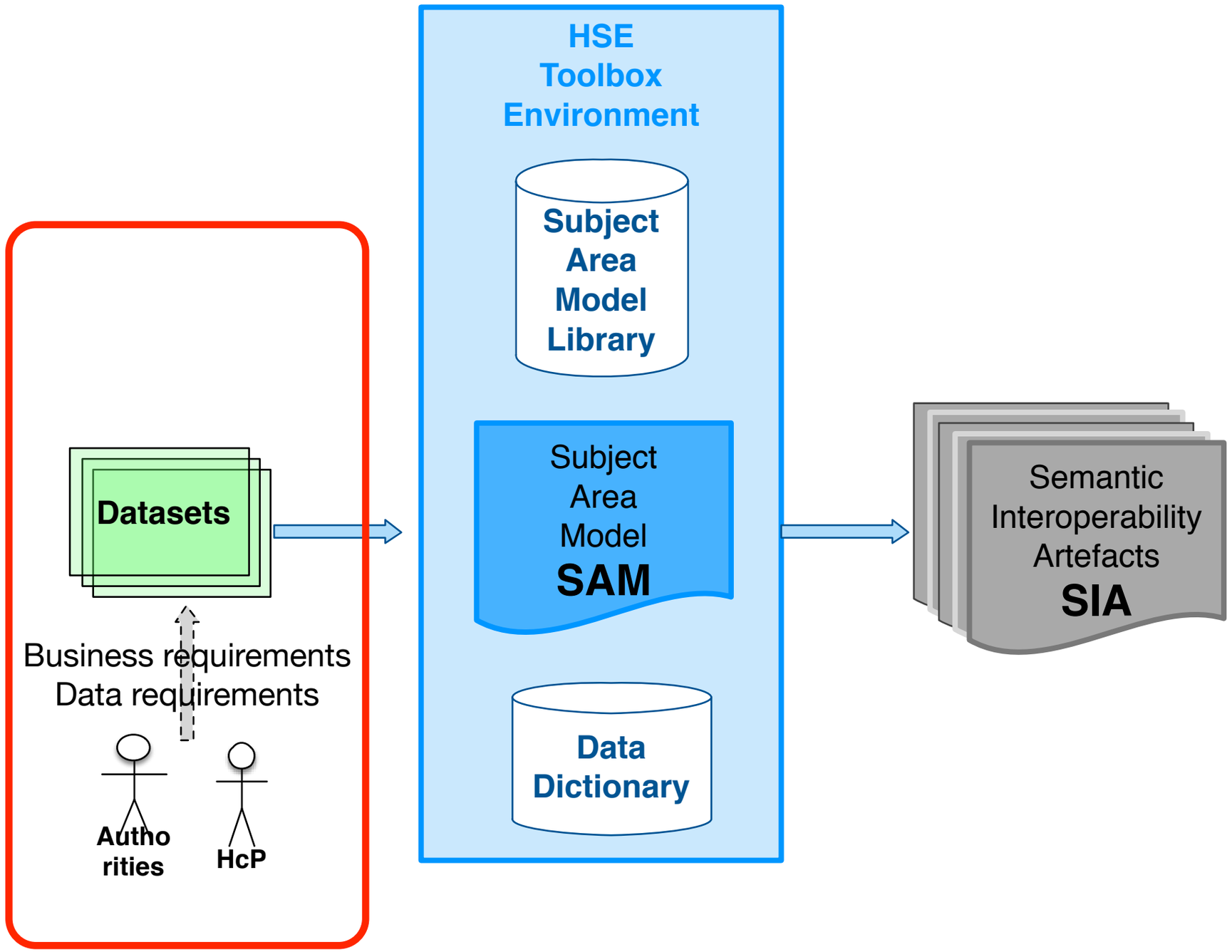
Datasets:

- express the data needs of stakeholders
- can be used in procurement
- specify what IT-systems must be able to handle (store, retrieve, exchange)
- facilitate reporting, collaboration, and research

© ERS 2013

From 'Information' Requirements to Semantic Interoperability Artefacts

ERS
Electronic Record Services BV

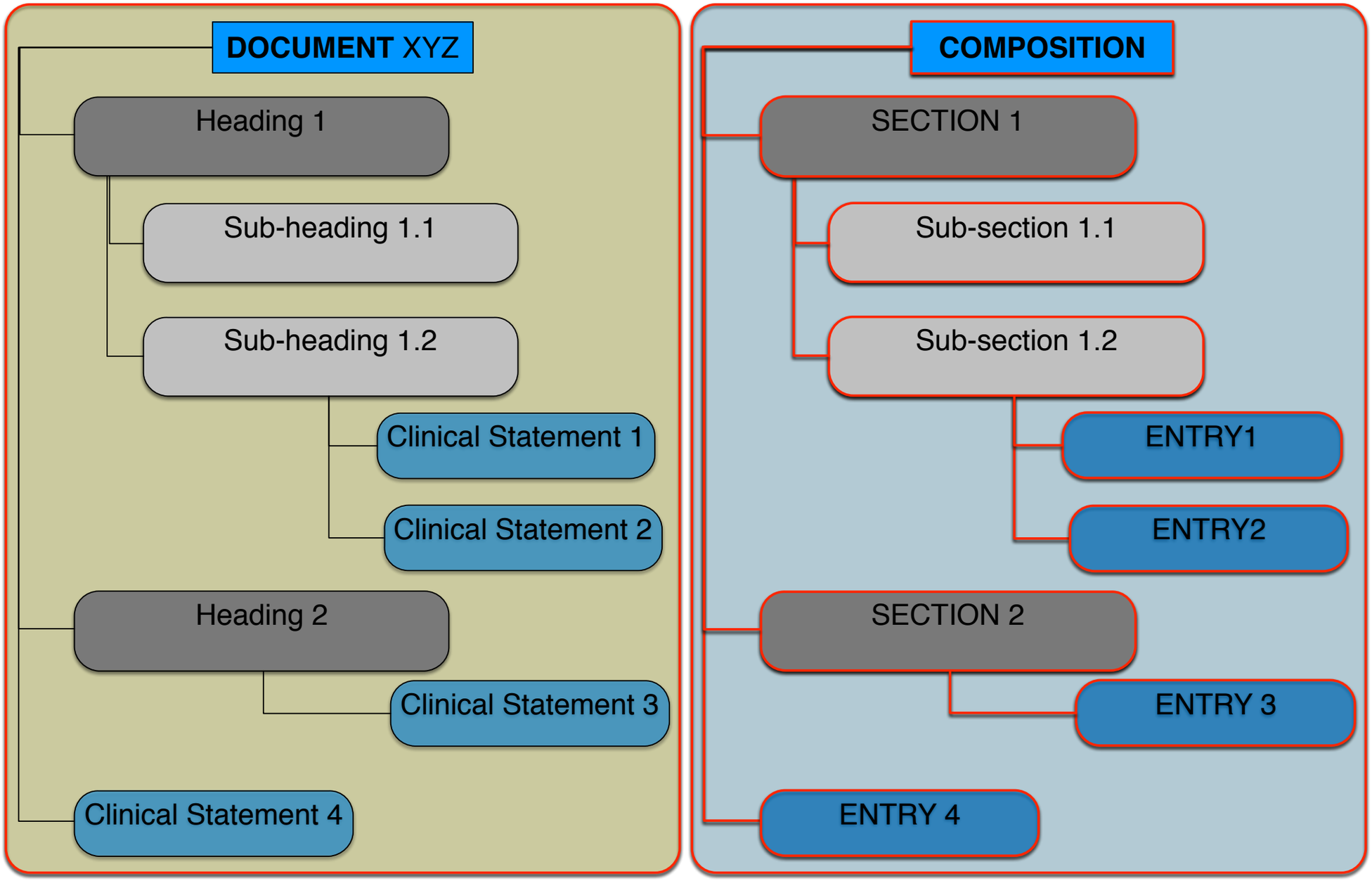


©ERS 2013

ERS

Electronic Record Services BV

From Data Set to Subject Area Model

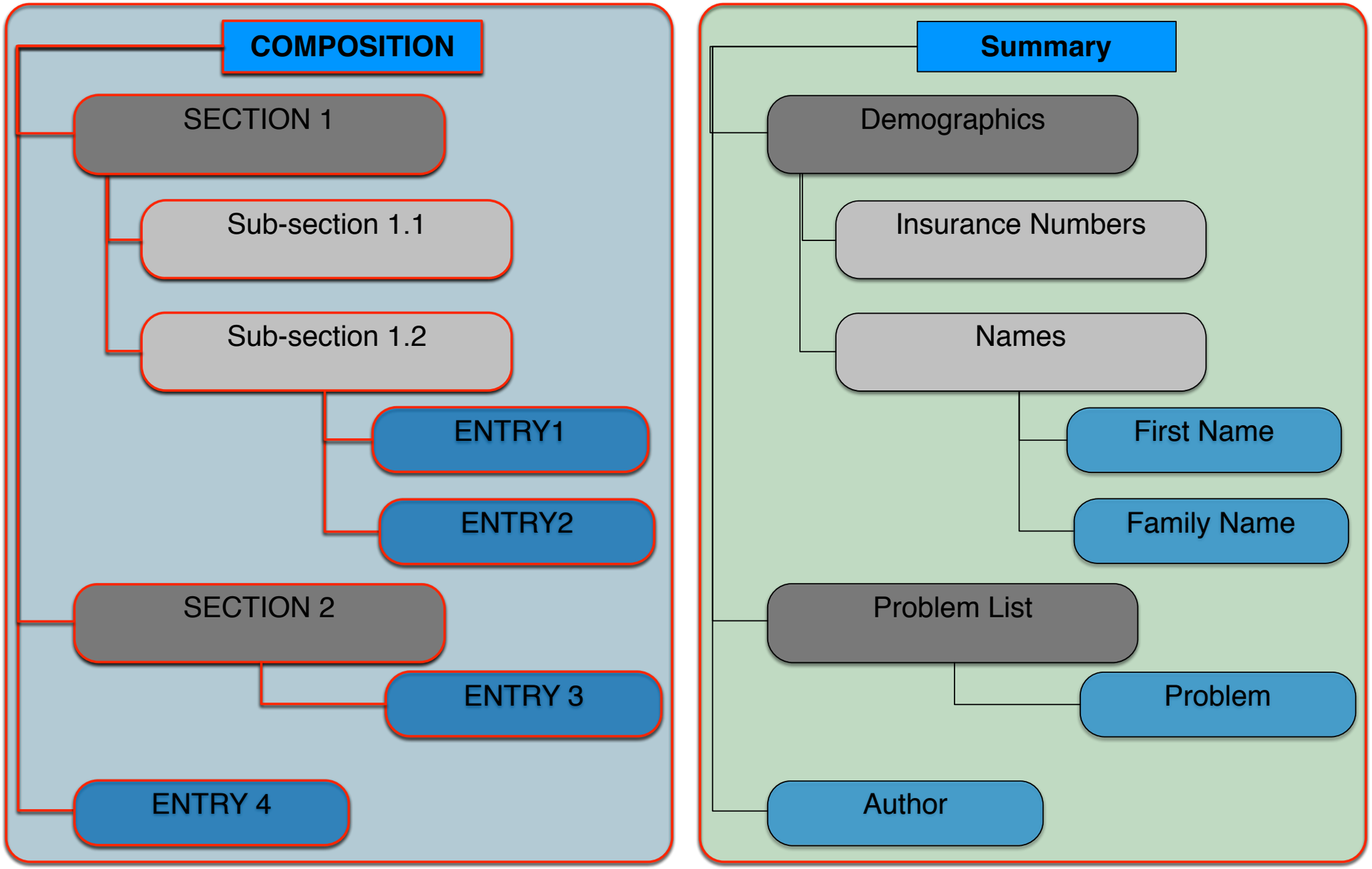


©ERS 2013

ERS

Electronic Record Services BV

From Data Set to Subject Area Model

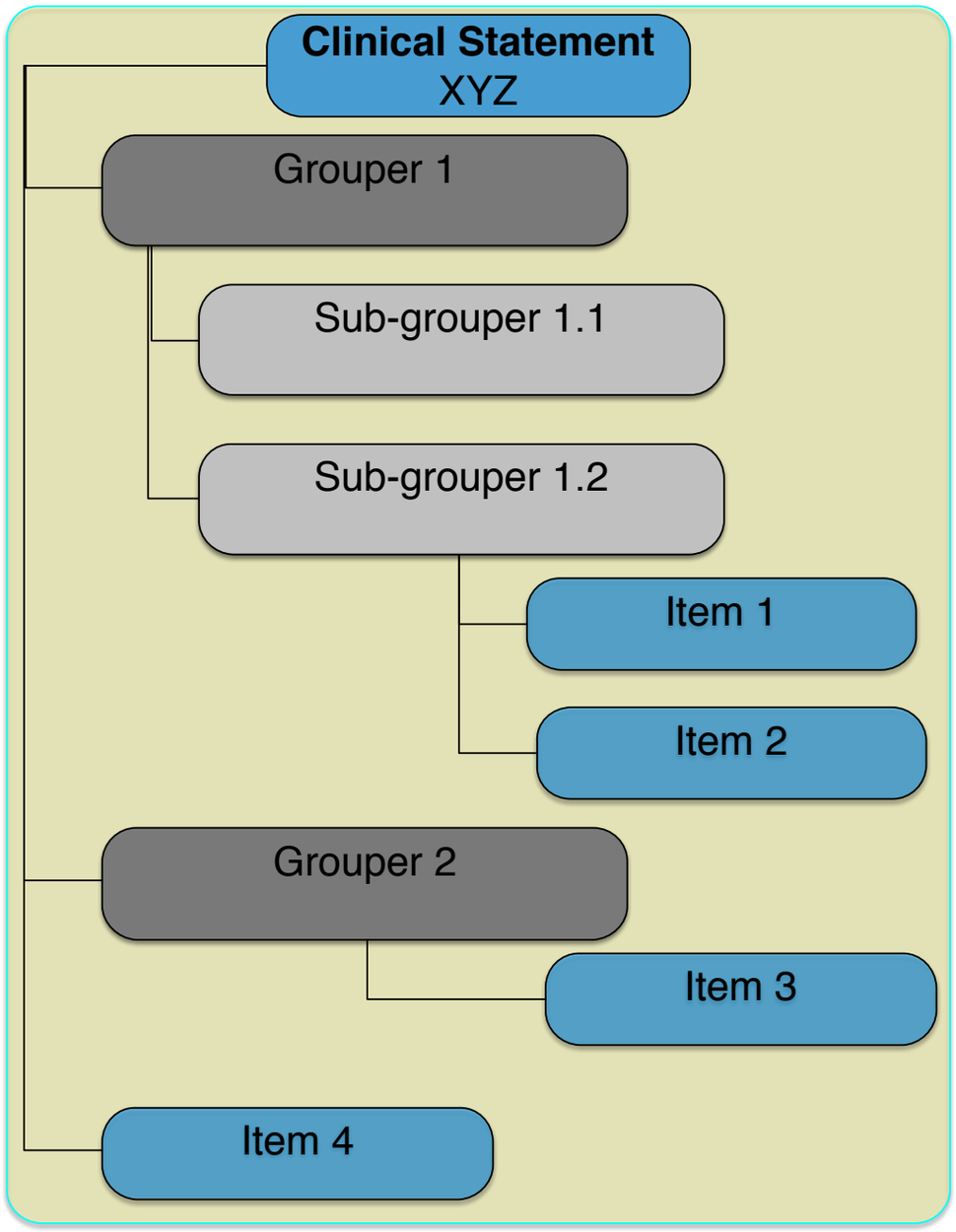


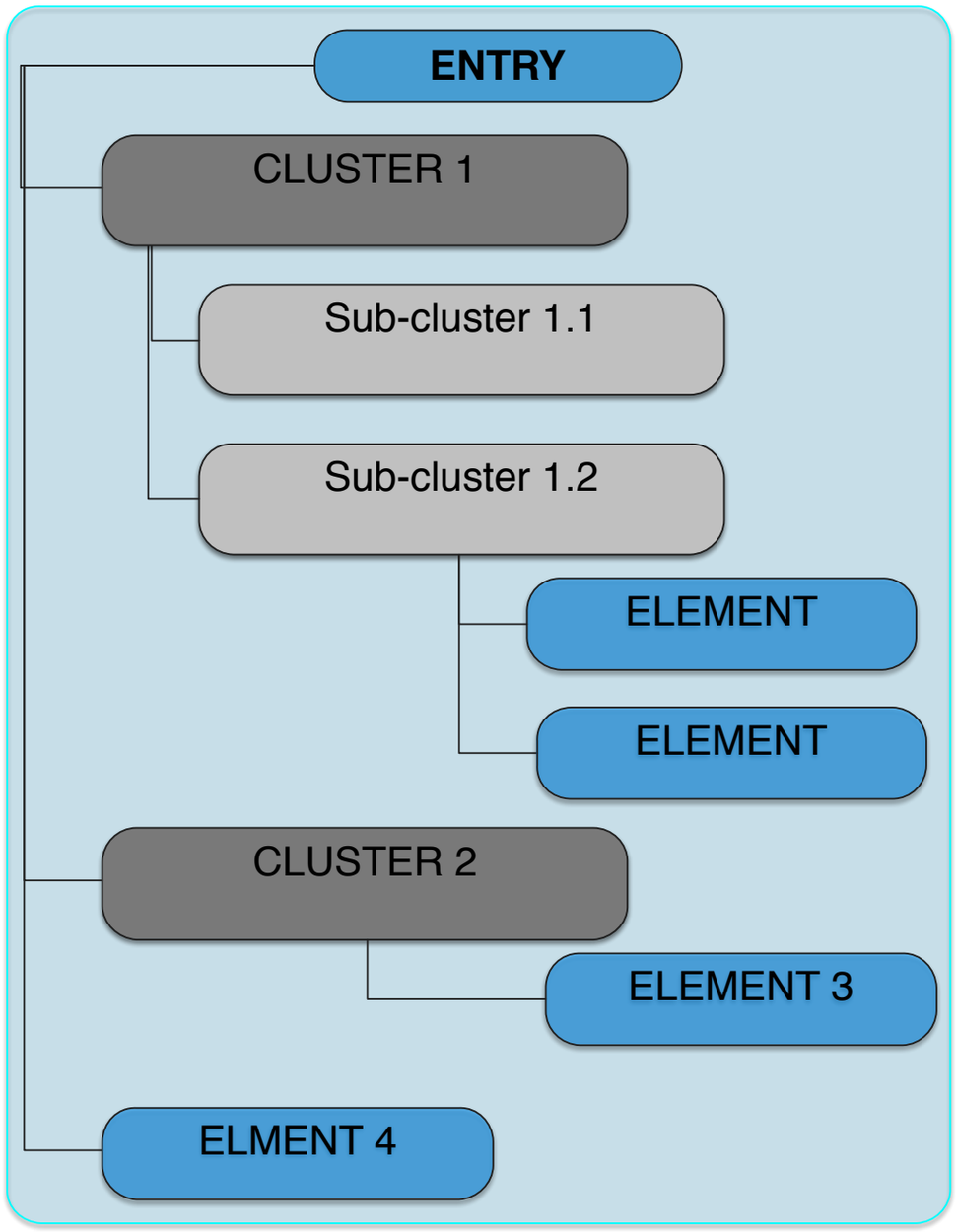
©ERS 2013

ERS

Electronic Record Services BV

From Data Set to Subject Area Model



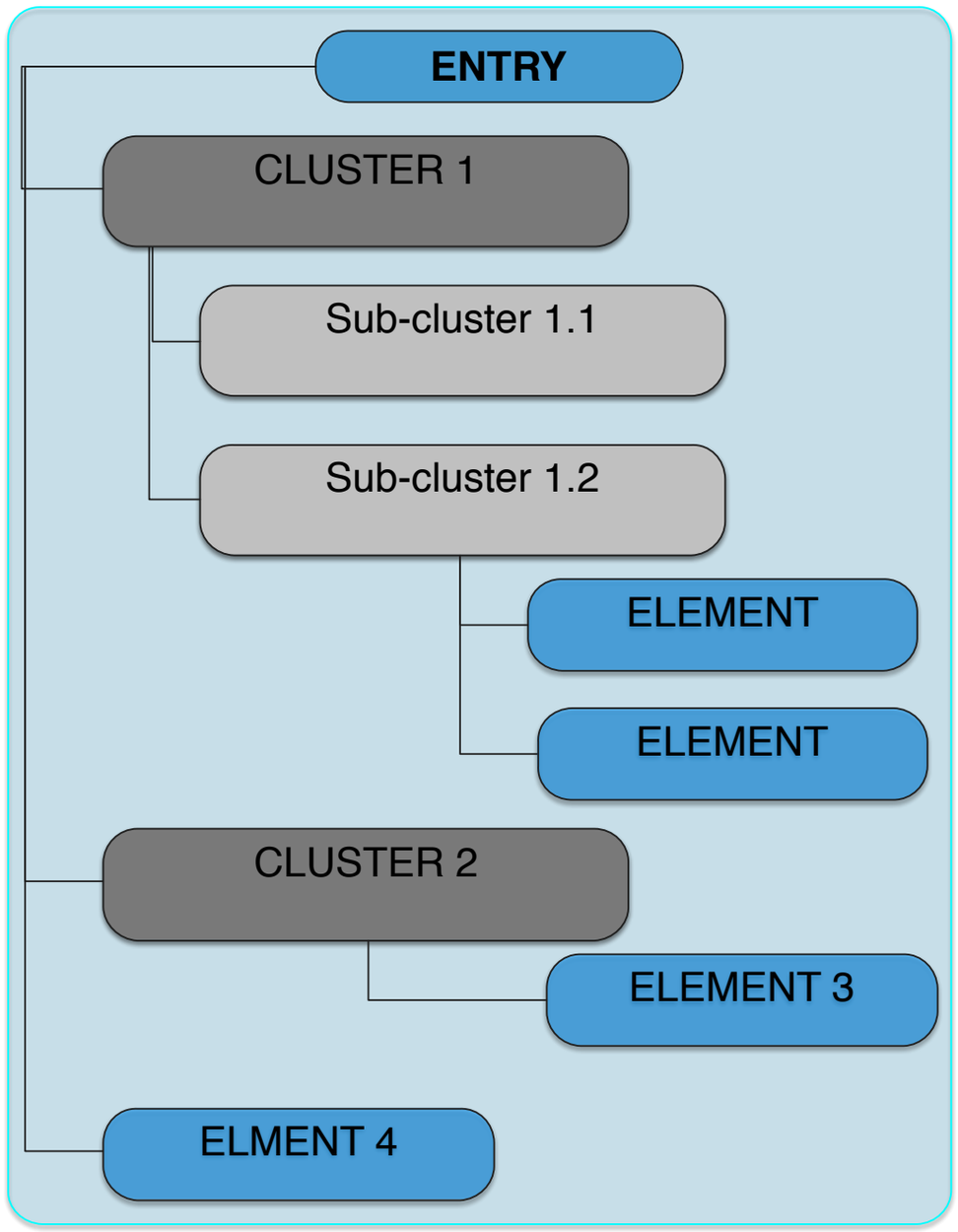


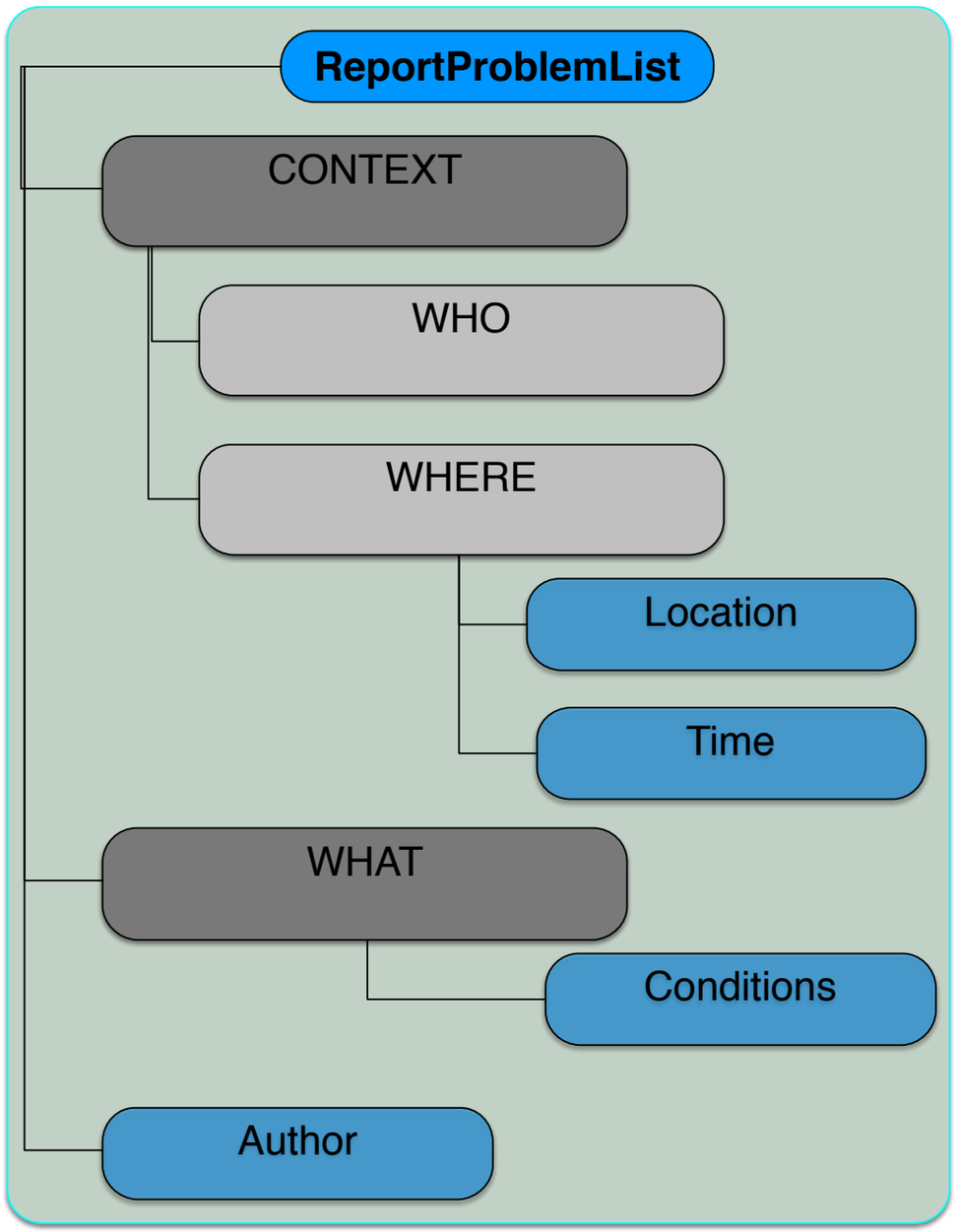
©ERS 2013

ERS

Electronic Record Services BV

From Data Set to Subject Area Model



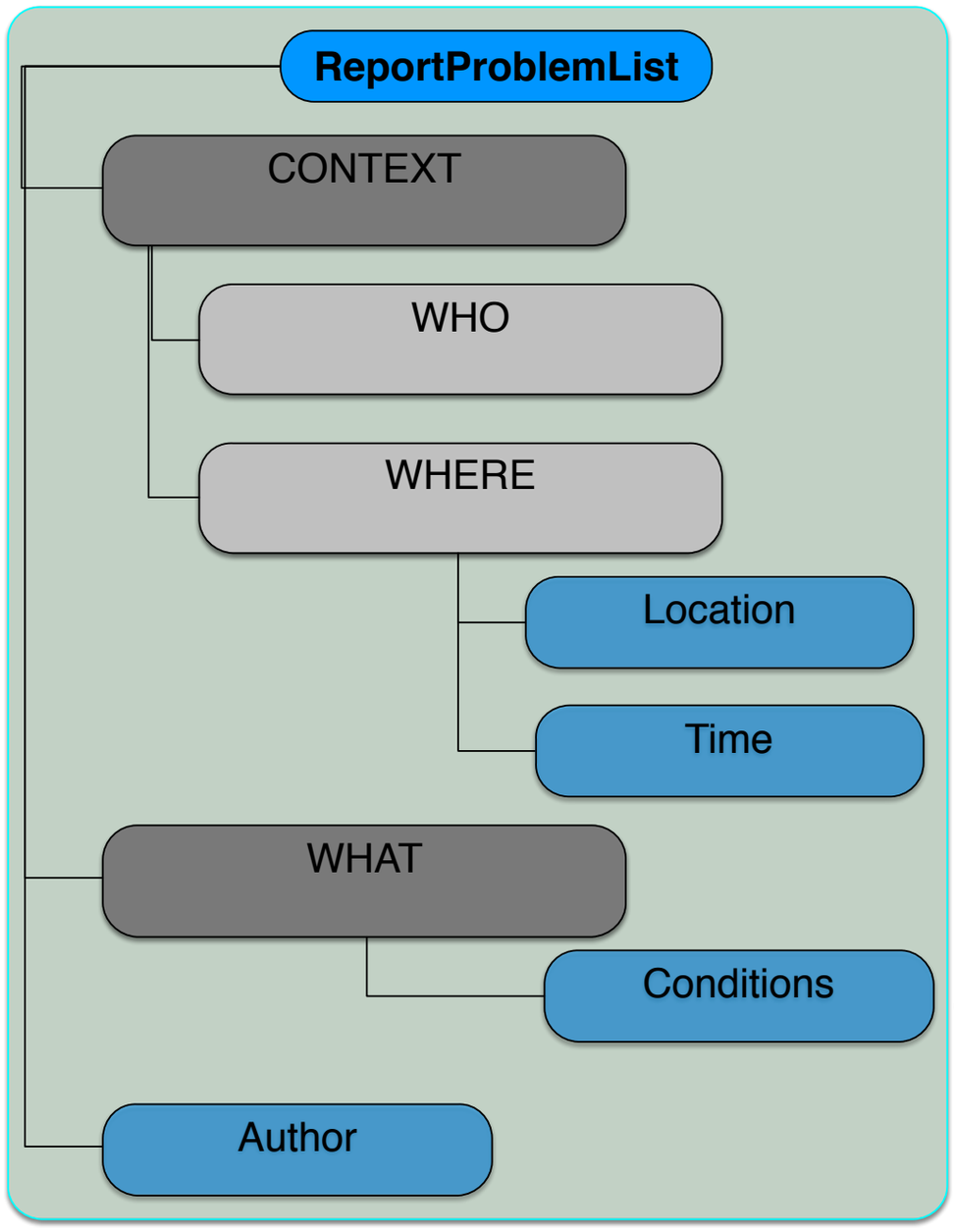


©ERS 2013

ERS

Electronic Record Services BV

From Data Set to Subject Area Model



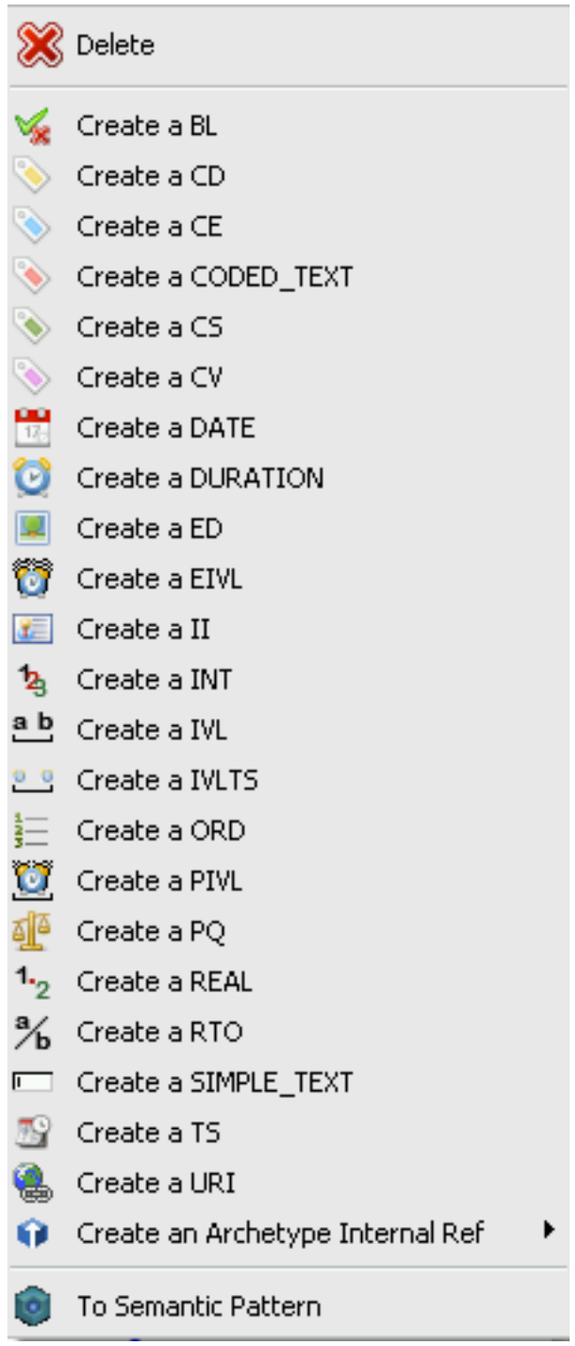
Data Types

Simple text

TS

CD

Simple text



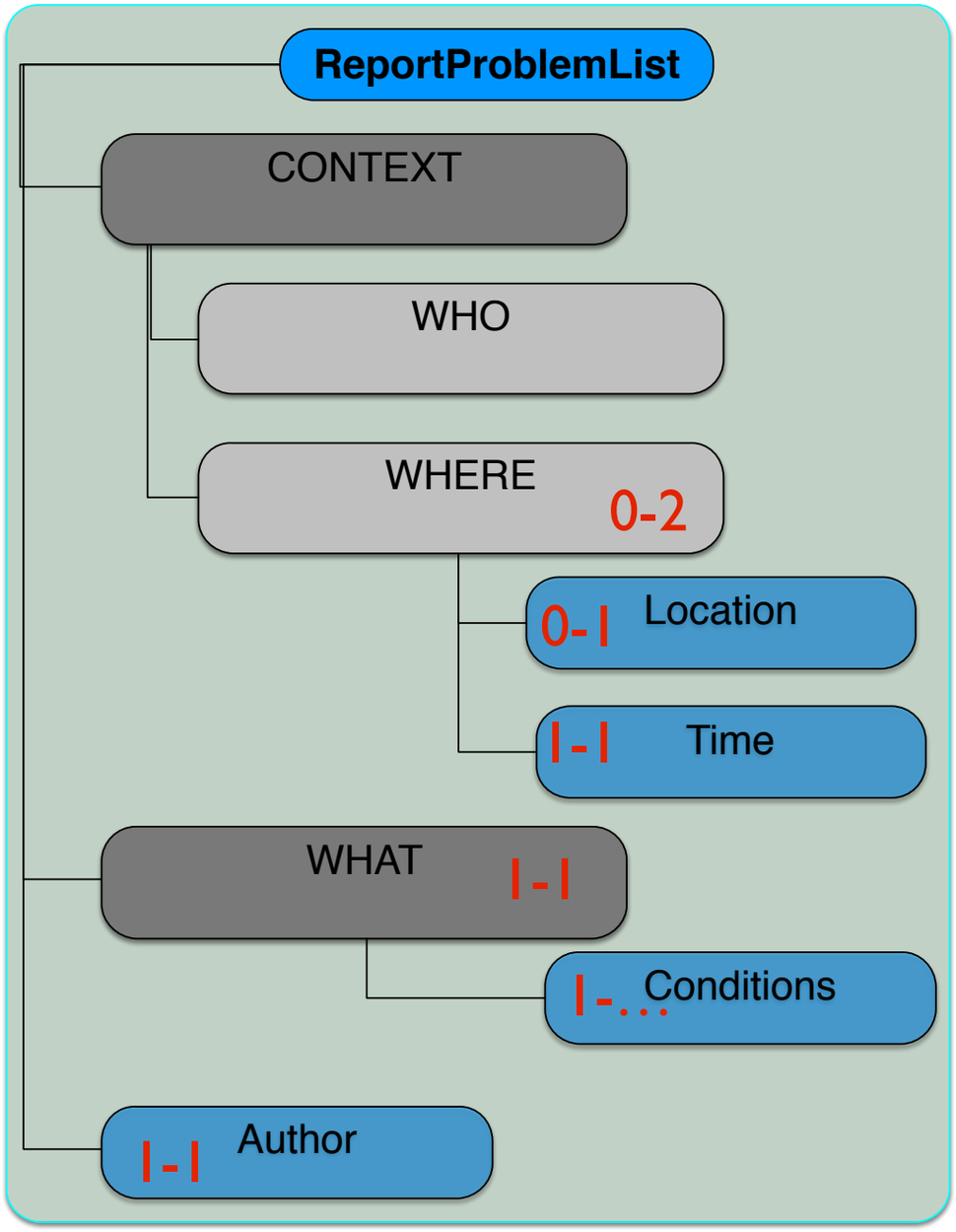
©ERS 2013

From Data Set to Subject Area Model

ERS
Electronic Record Services BV

Cardinalities Occurrences

Codes Annotations



0-2

0-1

1-1

1-1

1-…

1-1

Loinc: 1234
ContSys: Problem Lst

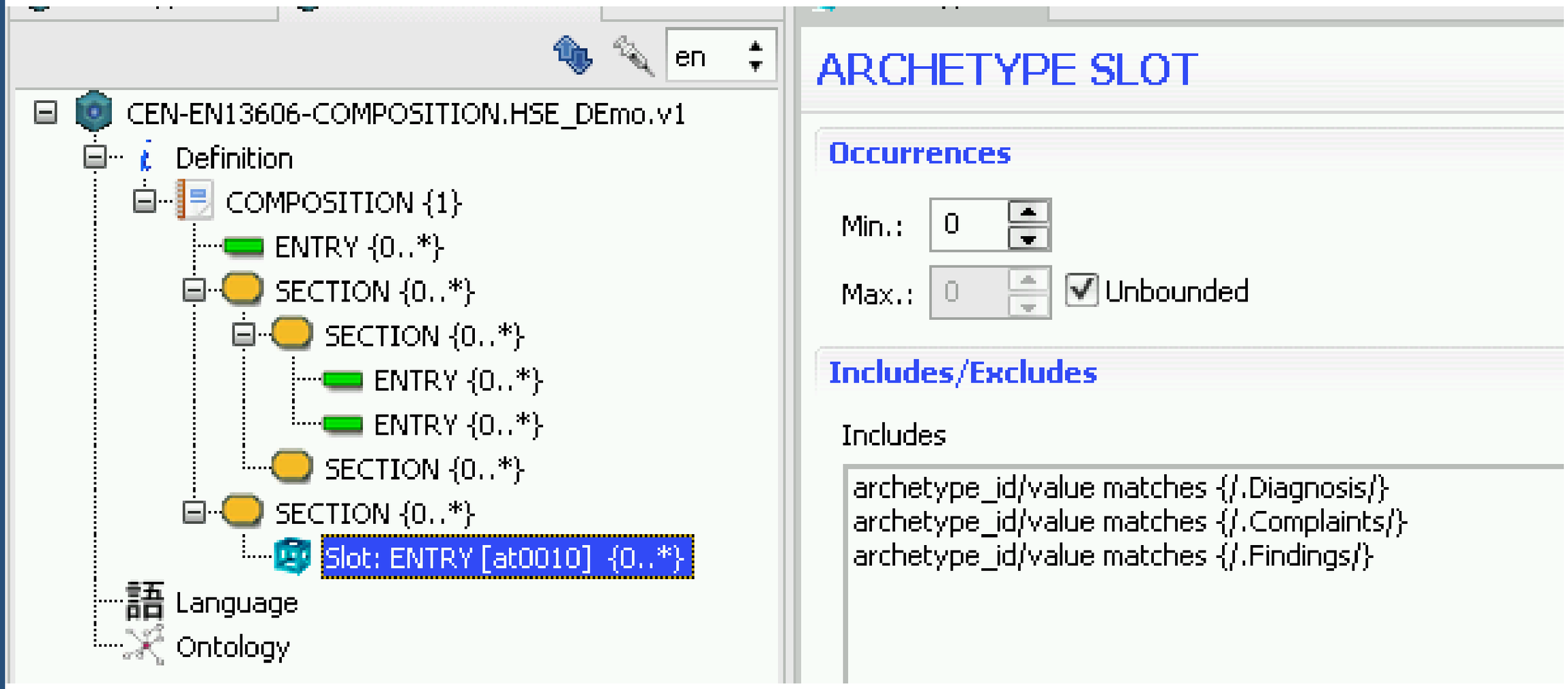
SNOMED: 123.234
Loinc: 4567
ContSys: HealthCondition

Any local or international code

©ERS 2013

HSE Toolset
SAM Editor

ERS
Electronic Record Services BV



©ERS 2013

HSE Toolset
SAM Editor

ERS
Electronic Record Services BV

Archetype Tree | CEN EN13606 Editor

en

- CEN-EN13606-COMPOSITION.HSE_DEmo.v1
  - Definition
    - Summary {1}
      - Author {0..*}
    - Context {0..*}
      - WHERE {0..*}
        - Location {0..*}
        - Time {0..*}
      - WHO {0..*}
    - WHAT:ProblemList {0..*}
      - Slot: HealthConditions {0..*}
  - Language
  - Ontology

Archetype slot

ARCHETYPE SLOT

Occurrences

Min.: 0

Max.: 0 Unbounded

Includes/Excludes

Includes

```
archetype_id/value matches {/.Diagnosis/}
archetype_id/value matches {/.Complaints/}
archetype_id/value matches {/.Findings/}
```


©ERS 2013

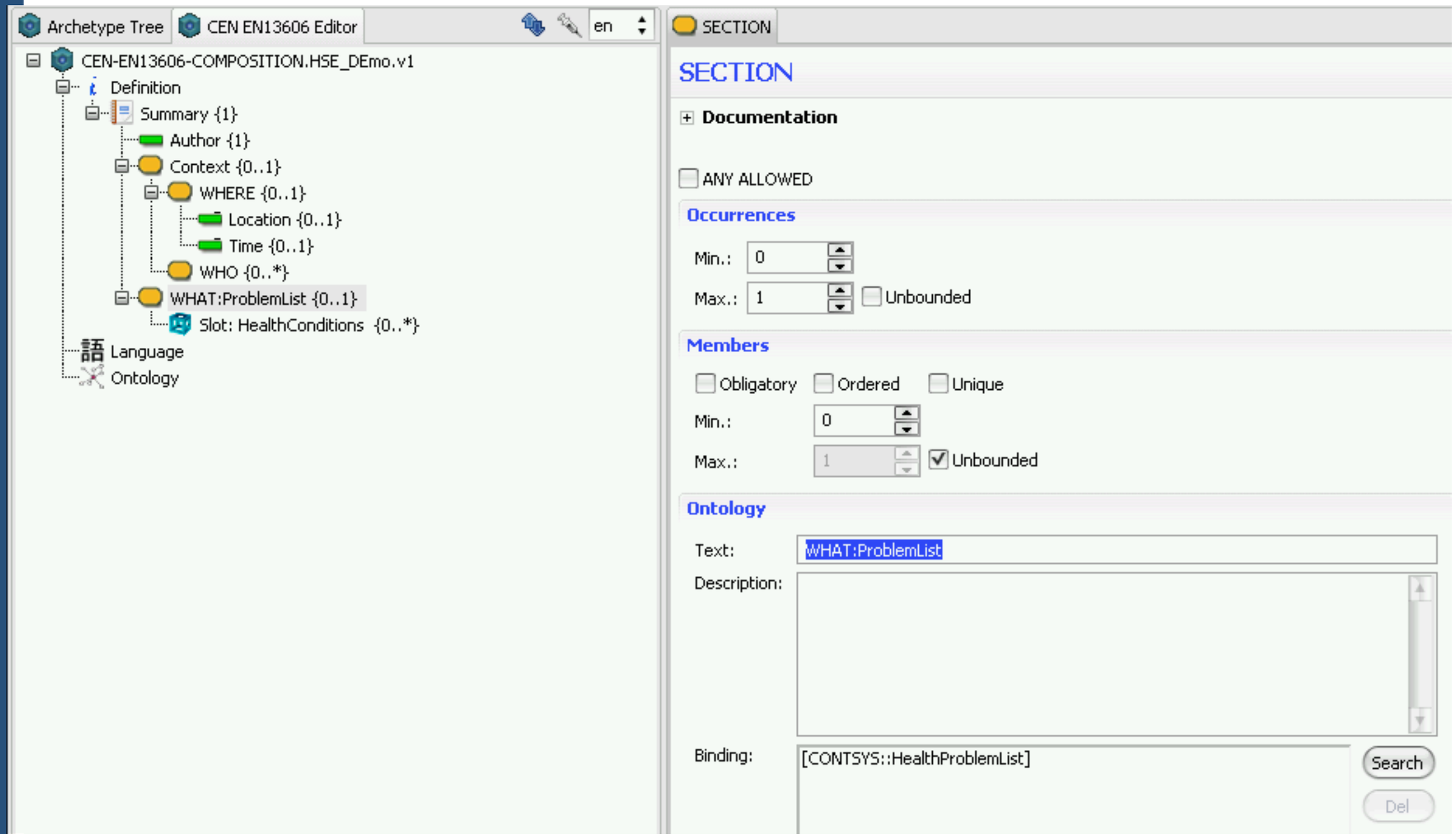
HSE Toolset
SAM Editor

ERS
Electronic Record Services BV

©ERS 2013

HSE Toolset
SAM Editor

ERS
Electronic Record Services BV

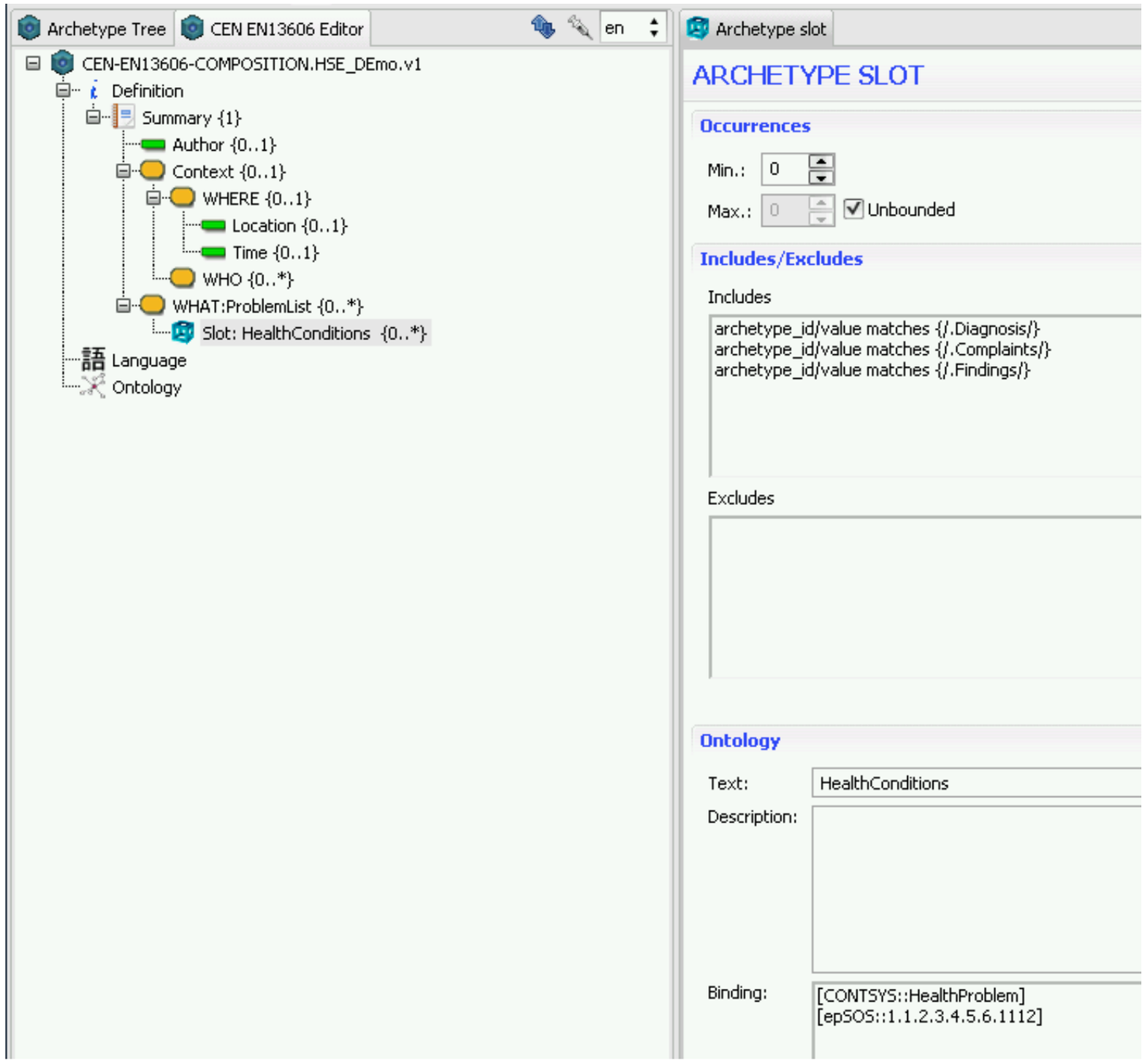


©ERS 2013

ERS

Electronic Record Services BV

HSE Toolset
SAM Editor

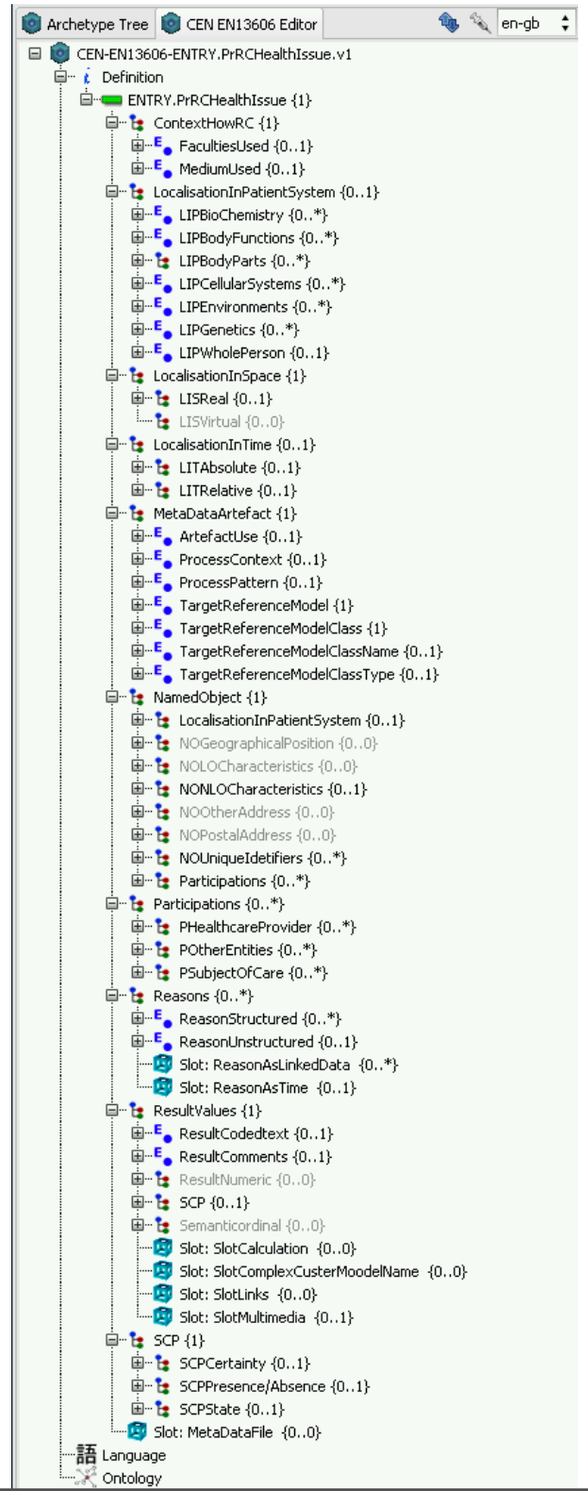


©ERS 2013

ERS

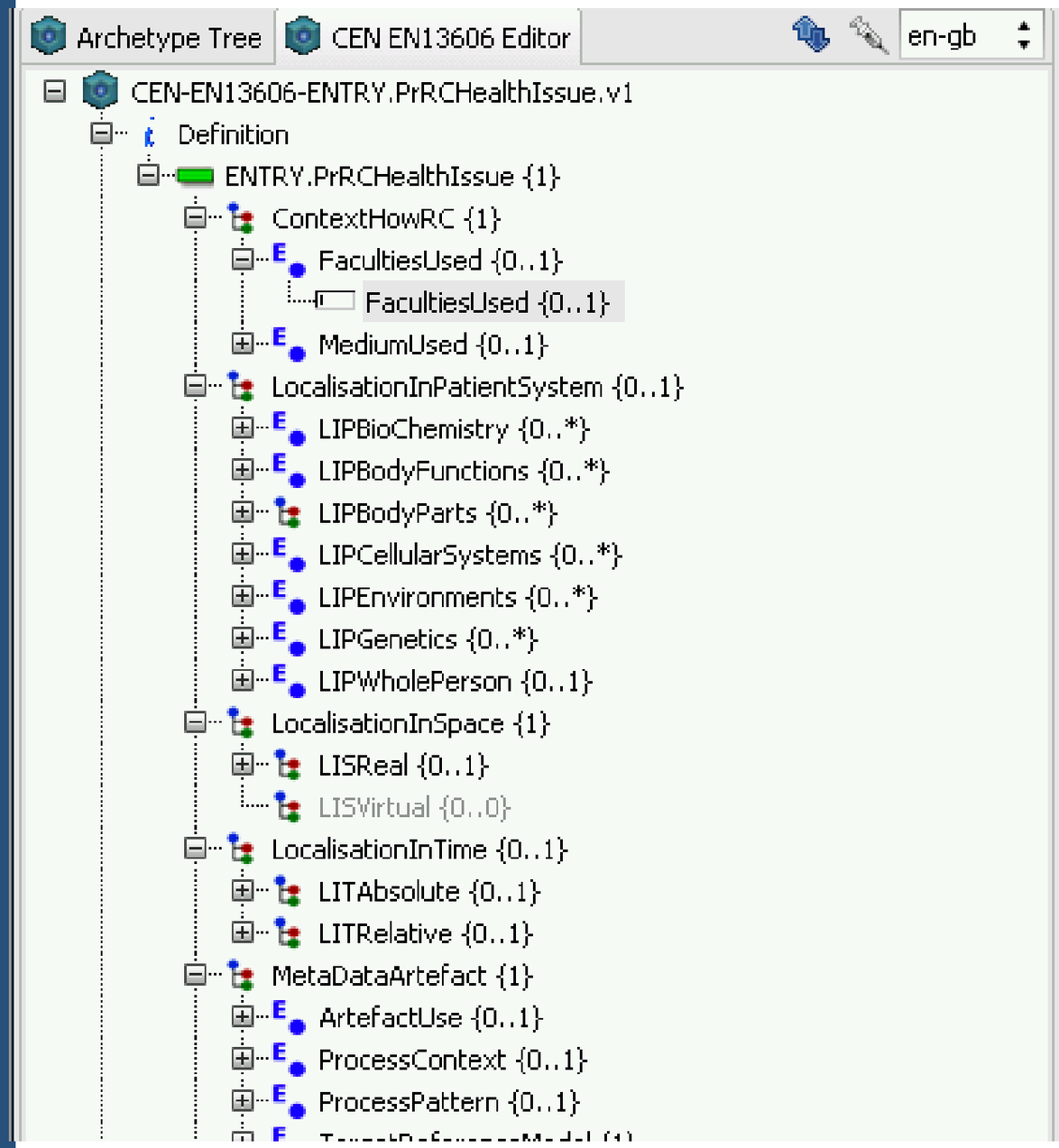
Electronic Record Services BV

HSE Toolset
SAM Editor



HSE Toolset
SAM Editor

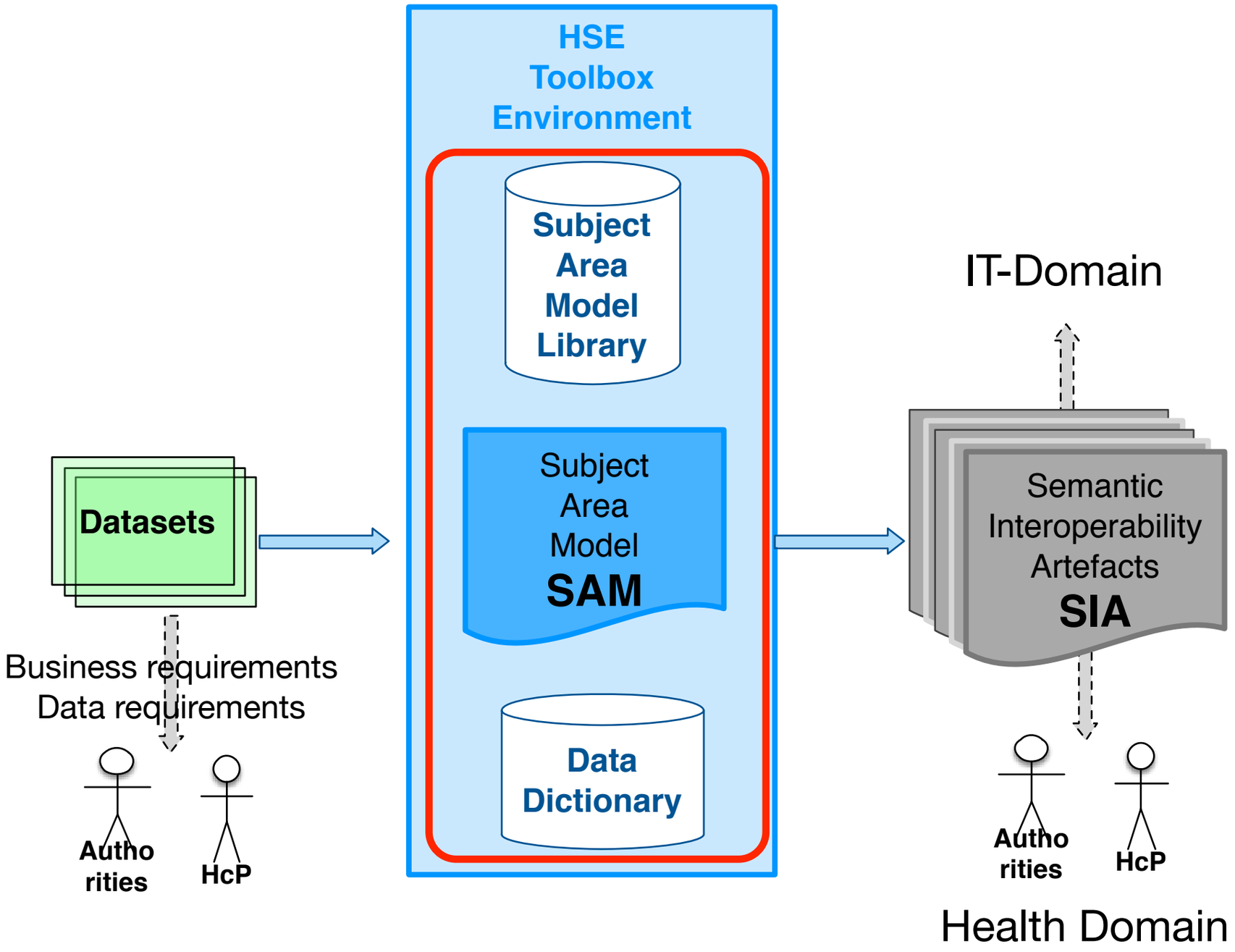
ERS
Electronic Record Services BV



©ERS 2013

From 'Information' Requirements to Semantic Interoperability Artefacts

ERS
Electronic Record Services BV

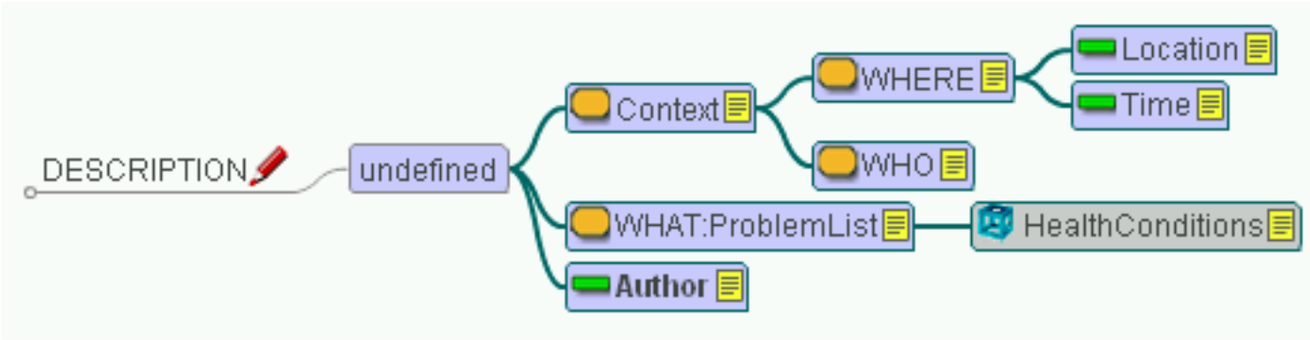


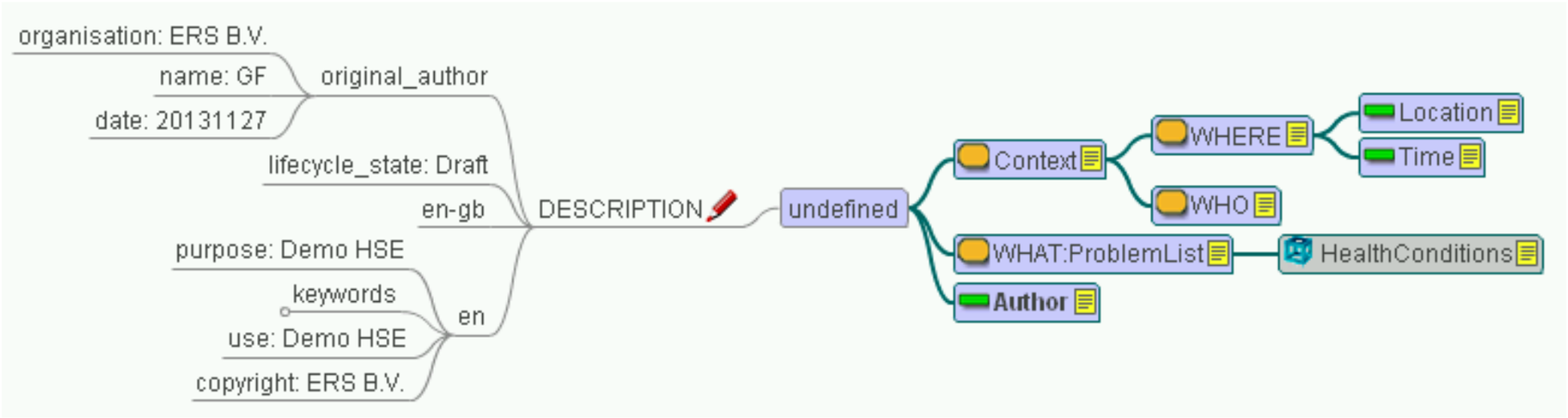
©ERS 2013

ERS

Electronic Record Services BV

Mind Map





©ERS 2013

ERS

Electronic Record Services BV

ADL

CEN-EN13606-COMPOSITION.HSE_DEmo 2.adl

```
archetype (adl_version=1.4)
    CEN-EN13606-COMPOSITION.HSE_DEmo.v1

concept
    [at0000]

language
    original_language = <[ISO_639-1::en]>

description
    original_author = <
        ["name"] = <"GF">
        ["organisation"] = <"ERS B.V.">
        ["date"] = <"20131127">
    >
    lifecycle_state = <"Draft">
    details = <
        ["en-gb"] = <
            language = <[ISO_639-1::en-gb]>
        >
        ["en"] = <
            language = <[ISO_639-1::en]>
        >
    >

definition
    COMPOSITION[at0000] occurrences matches {1..1} matches {  -- Summary
        content existence matches {0..1} cardinality matches {0..3; unordered; unique} matches {
            SECTION[at0001] occurrences matches {0..1} matches {  -- Context
                members existence matches {0..1} cardinality matches {0..*; unordered} matches {
                    SECTION[at0002] occurrences matches {0..1} matches {  -- WHERE
                        members existence matches {0..1} cardinality matches {0..*; unordered; unique} matches {
                            ENTRY[at0003] occurrences matches {0..1} matches {  -- Location
                                items existence matches {0..1} cardinality matches {0..1; unordered} matches {*}
                            }
                            ENTRY[at0008] occurrences matches {0..1} matches {  -- Time
                                items existence matches {0..1} cardinality matches {0..*; unordered; unique} matches {*}
                            }
                        }
                    }
```

ERS

Electronic Record Services BV

Conclusion

- A Data Set can be converted in a precise standards based Semantic Interoperability artefact
- The artefacts can be inspected by:
  - Stakeholders in the Health knowledge domain (SAM Editor, Mind Map, HTML) and
  - Stakeholders in the IT knowledge domain (ADL, XML instantiation)

© ERS 2013

ERS

Electronic Record Services BV

DEMO

Subject Area Model Editor

© ERS 2013

ERS

Electronic Record Services BV

SAM Environment

[tbd]

© ERS 2013