

Workshop on semantic interoperability prerequisites for efficient e-health systems.



How to support convergence of ontology, standards in health informatics for clinical terminologies, classifications, coding systems and e health records .

A strategy for a top down approach

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WHY A TOP DOWN APPROACH

1 BETWEEN 2 OPPOSITE POSSIBLE ERRORS

11 IDEAL SOLUTIONS

No chances before we are all dead!

12 PRAGMATIC RESIGNATION

**So difficult let us go our old traditional way (ex
procedures coding systems)**

2 DIVERGENT BOTTOM UP INITIATIVES

See before

**3 SEMANTIC INTEROPERABILITY PERCEIVED AS
A RISING PRIORITY BUT**

31 No clear understanding by decision makers

**32 Underestimation of the complexity of the whole and of
some parts**

33 Mixing not optimal between industry and academic

WHERE WE ARE



The different aspects of interoperability (Electronic Health Records, messages, security, terminology and languages, data types, information models, architectures, archetypes, standards, etc.) are addressed by divergent initiatives aiming at exchanging not only data or information, but also at transferring meaning: in healthcare, such a practice is related to risk.

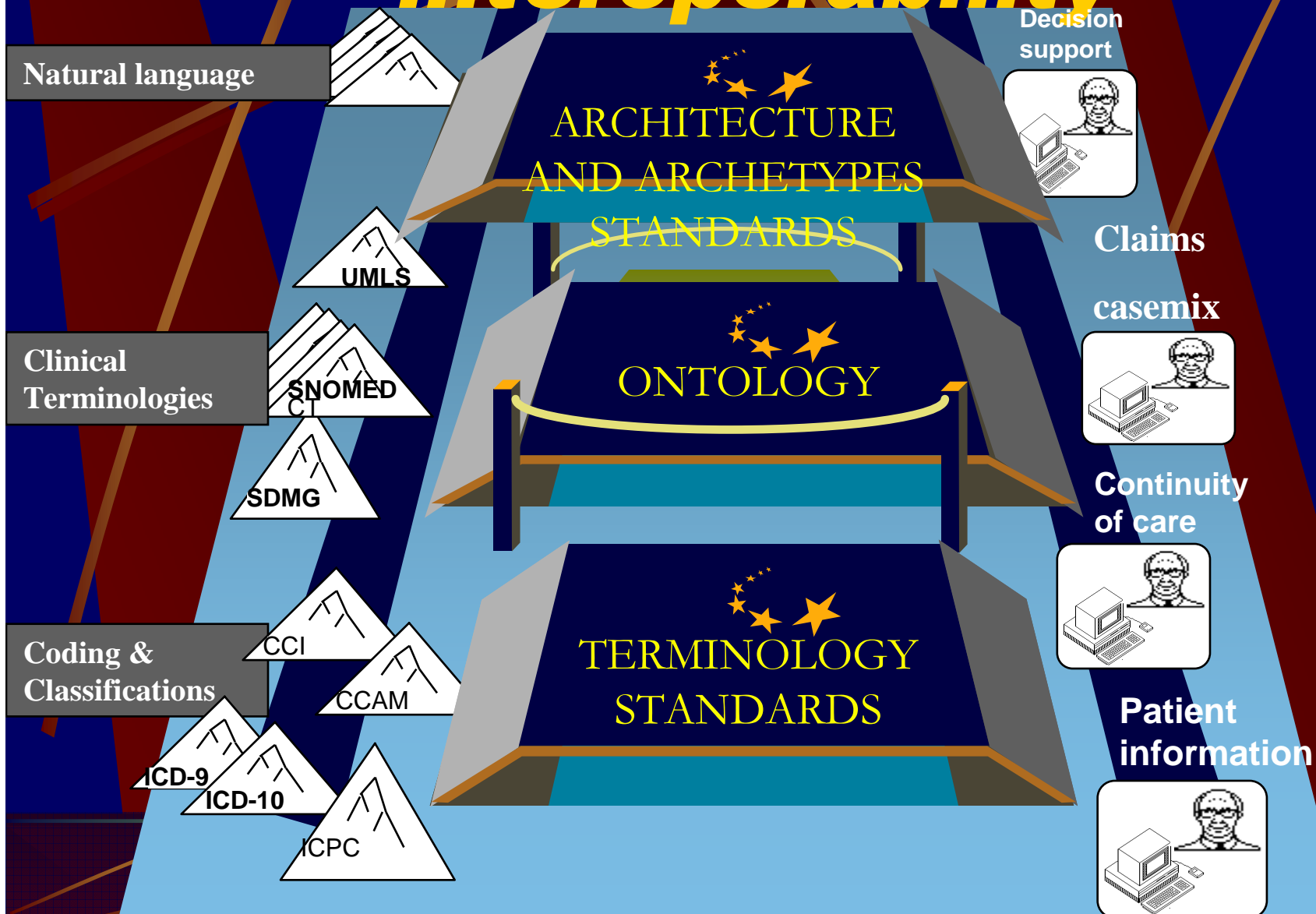
WHERE WE ARE



Advanced technologies in computer and other disciplines, such as artificial intelligence, allow for much more complex problems solving in routine: this is possible through the use of such tools as ontologies and formal representations, hidden within the computer for terminology, or personal microprocessor cards for security.

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Bridges/roles in semantic interoperability



1 Information Model (RIM HL7)

2 Architecture:

prEN 13606 EHRcom,CDA

3 Archetypes :

prEN 13606 EHRcom,Templates HL7

set of minimal ontology and context structure constraints

4 Terminology standards

EN1828 Categorical structure for surgical procedures

EN ISO 18104 *Integration of a reference terminology model for nursing*

prEN12264 *Categorical structure :reference terminology model*

X prEN medical devices,clinical laboratory,medicinal products,ClaML14463

5 Ontology

Formal knowledge representation with editing ,reasoning and nlp software tools as OPEN SOURCE to share

acquisition, validation, use between countries, centres and languages

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Relations ontology:nlp Classifications

craniotomy, cranial incision, incision of the skull

Set of sensible _statements(cl_Incising, rel_actsSpecificallyOn, cl_HollowBodyStructure).

And annotations(22.1, cl_GeneralisedProcess, rel_actsOn, cl_BodyStructure, [en([adj,cpl,npem]), fr([adj,cpl]), it([adj,cpl])], [en([adj,partPerf(affected,by)]),...]).

FOR COMPUTERS AND NOT FOR HUMANS
NOT EASILY PERFECT AND EXHAUSTIVE

1 st Generation	2 nd Generation	3 rd Generation
ICD 10 ICD 9 CM CPT 4	ICF CCAM SNOMED intern.	GALEN SNOMED RT FMA

ONTOLOGY CONFUSING FACTORS

Consensus process between professionals

Inter rater reliability

Assessing quality of the whole process?

A new identifier

End users



Macro view

Road map for decision makers

- understanding complexity and issues**
- implementation platforms
at different levels
(EU,nation,region,organisation)**
- coordination(member states,EU,SO,
Who,industry,academia)**
- action plan**

METHODOLOGY



- To identify the needs of target beneficiaries,**
- To keep in mind the context (levels of development, cultural and linguistic sensitivities),**
- To assess impact (benefits) over time and to prioritise ,**
- To identify missing links (R&D)in qualitative terms**
- To assess implications in quantitative terms (planning and resource).**

Micro approaches :targeted topics
Disease
Anatomy
Procedures
Medicinal products

to what extent existing applications and tools can be improved and at what cost to come useful for specific purposes.

OR

to what extent ideal solutions can be operationalized and at what cost to be practically implemented to be useful for specific purposes.



END

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