ERS

Electronic Record Services B.V.

International e-Health developments

Brussels

Friday 15 October 2010

© ERS 2010

ERS

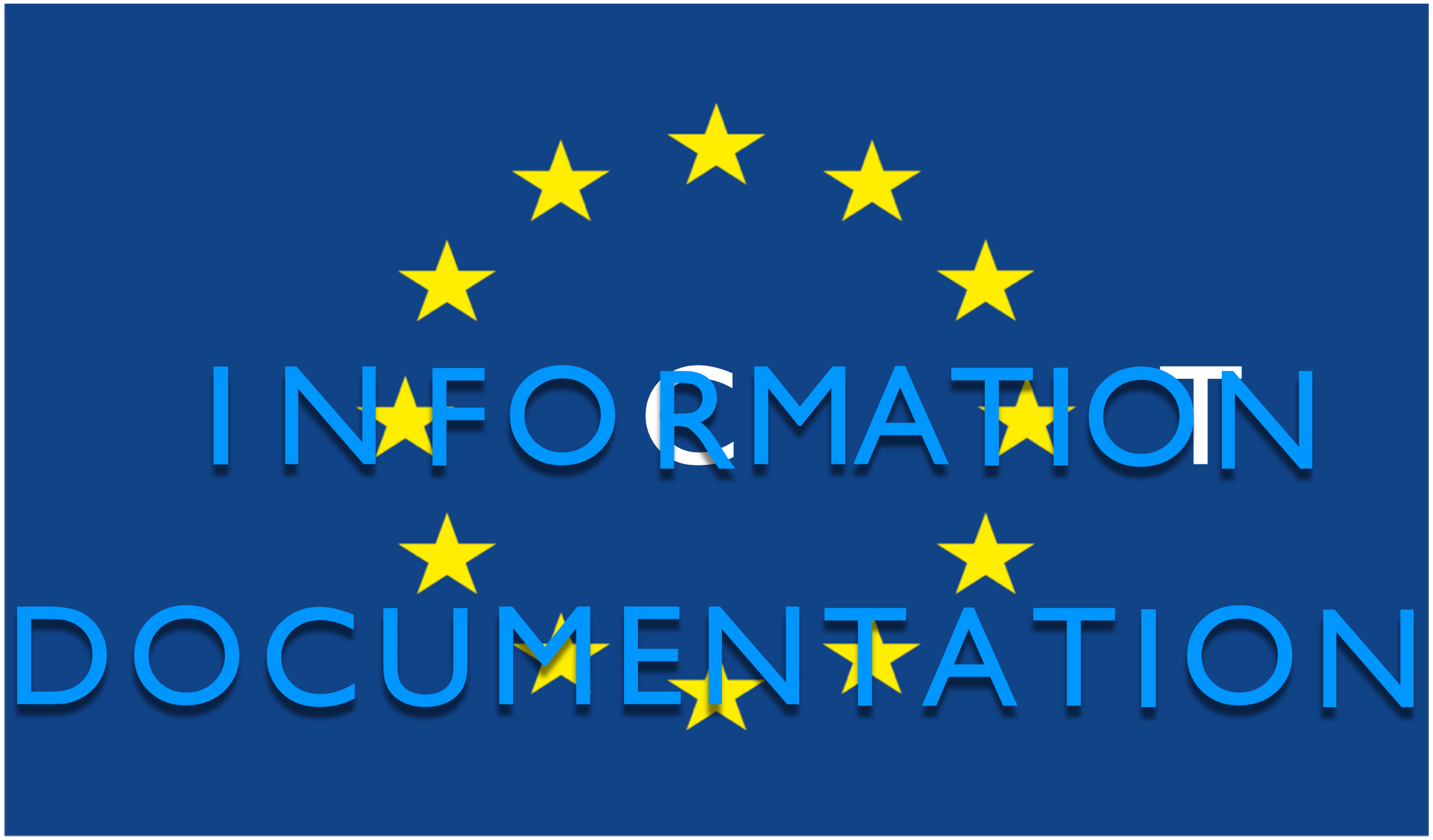
Electronic Record Services BV

Gerard Freriks

Past chair CEN/TC251 wg1

Vice-president EuroRec

ERS b.v.


INFORMATION
DOCUMENTATION

ERS

Electronic Record Services BV

1. 2LM Paradigm and Innovation

2. EN13606 and Innovation

3. Missing Semantic Interoperability Stack - INFOstructure

4. EN13606 Consortium/Association

5. European plans: Digital Agenda and FP7

Friday, 15 October 2010

Ik denk dat wij een agendapunt moeten toevoegen: EN13606 and Digital Agenda for Europe.
Zou je de presentatie alvast volgens de agenda kunnen indelen met onder ieder deel een loze sheet zonder tekst om ideeën in te droppen?

ERS

Electronic Record Services BV

-|-

Two Level Modeling Paradigm and Innovation

© copyright ERS 2010

ERS

Electronic Record Services BV

Effect on Society

Easy access to data, information and knowledge

Instantly connecting, synchronising people and organisations

New Products

Old Products

© copyright ERS 2010

Friday, 15 October 2010

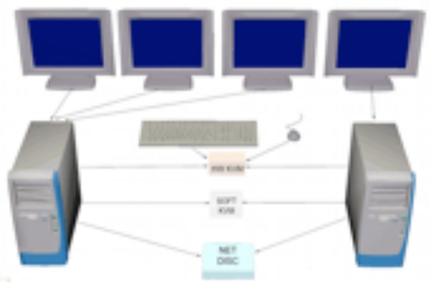
Innovation in general.
New products by them selves do not create innovation.
What is needed to create Innovation?
Answer: When they change society.

1- Old Product are replaced by new products.
The Parchment and Quail and INk by printed materials
Creating access to information via mass media.
It changed society and therefor was an Innovation.

2- The new telephone by Gr. Bell became an Innovation when it became a commodity product in stead of a one-off, unique , product for instantly contacting people.
And it needed a supporting infrastructure.
The Innovation: Instant Access to data and information by people so they can be synchronised.

2LM Paradigm - Innovation

ERS
Electronic Record Services BV

Effect on Society	**Easy speedy access** to data, information, knowledge and people plus organisations	**Instantly speadily connecting**, **synchronising** people, organisations and **business processes**
New Products		EHR-systems
Old Products		 EMR-systems

© copyright ERS 2010

Friday, 15 October 2010

Innovation in general.
New products by them selves do not create innovation.
What is needed to create Innovation?
Answer: When they change society.

1- The old computer was a one-off, unique product.
Only the commodity and the supporting infrastructure
will Innovate,
because it changes the way people and organisations have speedy access to data and information.

2- When it comes to the EHR,
it is clear that present day Electronic Medical Record Systems are one-off products and not a commodity.
Each is highly unique, even per department they can be unique.
And there is NO supporting INFRASTRUCTURE.

Present day systems can NOT provide Innovation by
Instantly connecting people, organisations and business processes.

2LM Paradigm - Innovation

ERS
Electronic Record Services BV

Effect on society	**-**	**Innovation**
Infrastructure	**-**	Infrastructure
R&D - New products	One-off	Commodity

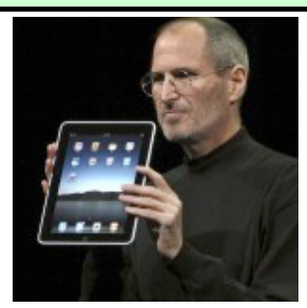
© copyright ERS 2010

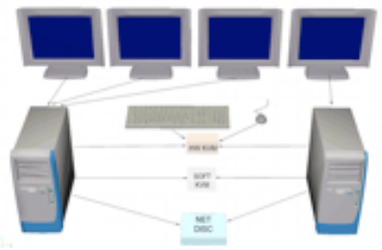
Friday, 15 October 2010

For any Innovation we need:
- a Commodity
- and a supporting infrastructure

2LM Paradigm - Innovation

Effect on society	-	**Innovation**
Infrastructure	-	Infrastructure
R&D - New products	One-off	Commodity





EMR

?

EHR

ERS

Electronic Record Services BV

Digital Agenda

Infrastructure
Infostructure

Legislation
Standards

Two Level Model Paradigm EN13606

© copyright ERS 2010

In Europe it is the DIGITAL AGENDA that aims to set the conditions for Innovation

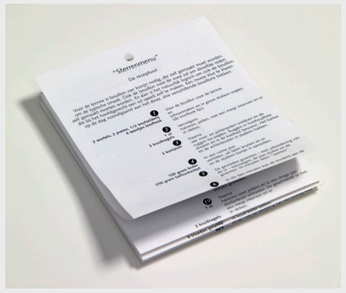
ERS
Electronic Record Services BV

EN13606 Introduction (High level) and Innovation

© copyright ERS 2010

Bakery

ERS
Electronic Record Services BV

Instructions	Ingredients	Moulds	Kitchen machines	Oven	Pastry
					

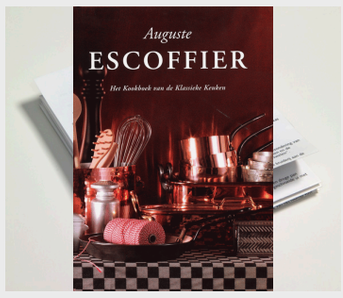
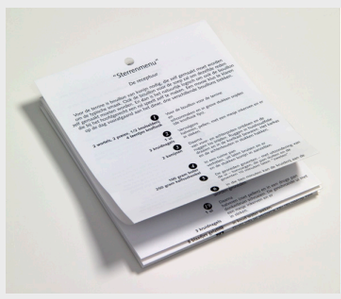
© copyright ERS 2010

Friday, 15 October 2010

A Metaphor will be used
- Components needed to produce Pastries

Bakery/EHR expectations

ERS
Electronic Record Services BV

Instructions	Ingredients	Moulds	Kitchen machines	Oven	Pastry
					
					
Rules	**Information**	**Presentation**	**Software**	**Hardware**	**EHR**

© copyright ERS 2010

Friday, 15 October 2010

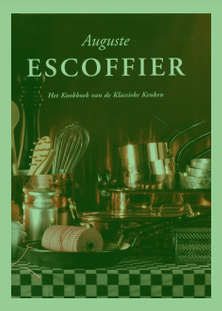
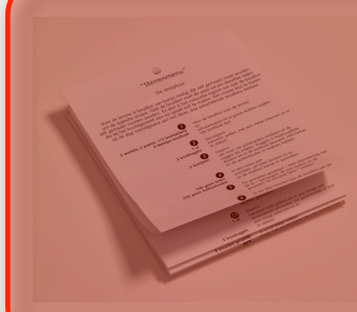
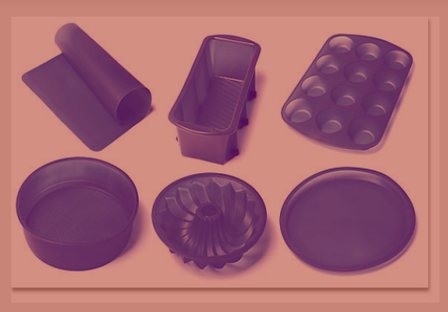
Different Instructions and ingredients make an other type of pastry

The same Instructions used in a different setting produce the same pastry

Metaphor
- Instructions = Business Rules
- Ingredients = Information
- Moulds = Presentation
- Kitchen machinery = Software
- Oven = Hardware

EHR's now

ERS
Electronic Record Services BV

Instructions	Ingredients	Moulds	Kitchen machines	Oven	Pastry
					
					
Rules	**Information**	**Presentation**	**Software**	**Hardware**	**EHR**

© copyright ERS 2010

Friday, 15 October 2010

Each IT-vendor delivers a unique (proprietary) system with limited possibilities to adapt to local needs

Rules, Information, Moulds, Machines, and the Oven can not be exchanged.

Each IT-system has proprietary solutions that can not be exchanged

ERS

Electronic Record Services BV

EHR systems now

© copyright ERS 2010

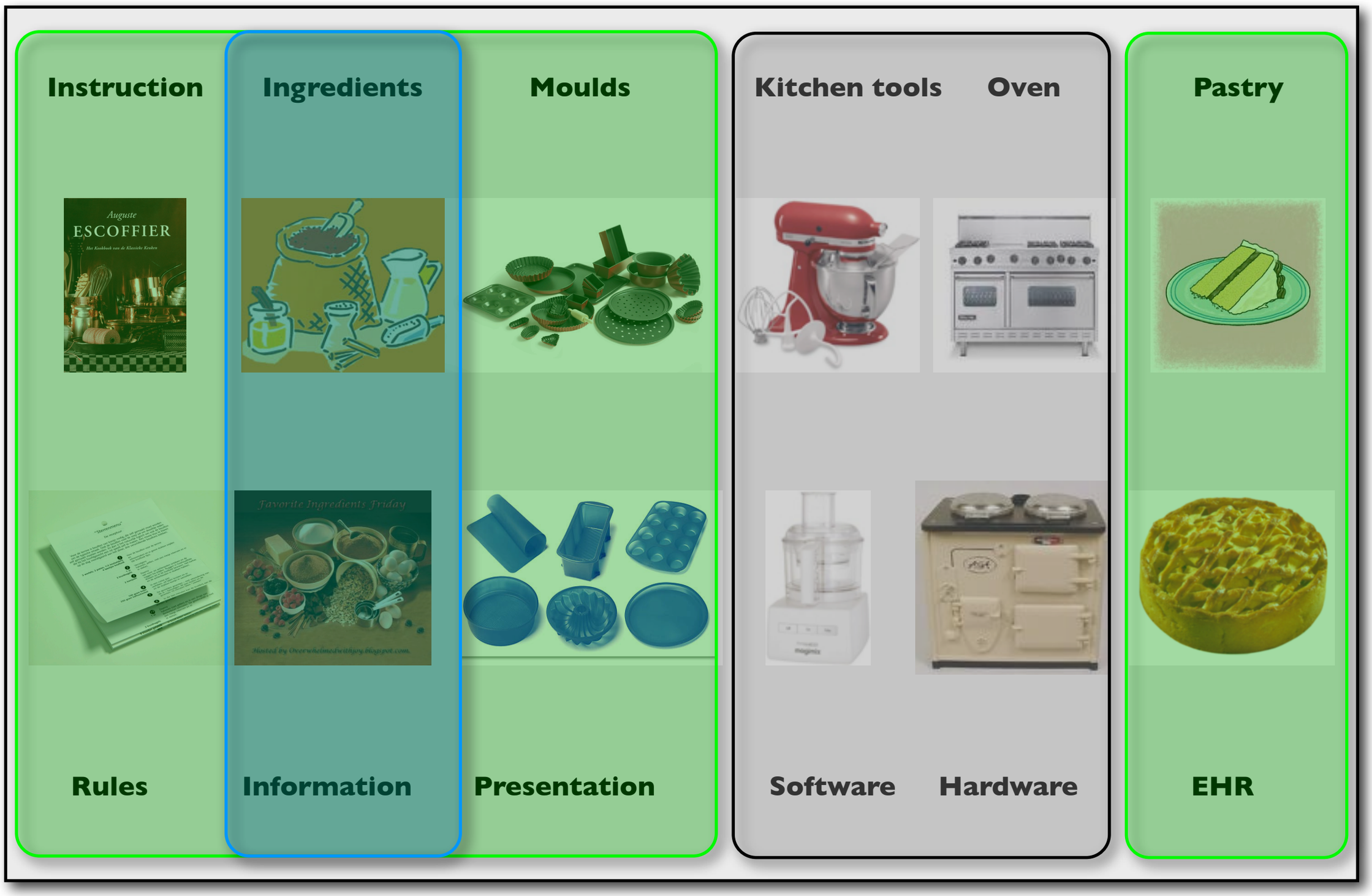
Friday, 15 October 2010

Consequence:

Each selects a nice flower and has to live with the not so nice consequences.

EHR-systems we need

ERS
Electronic Record Services BV



Friday, 15 October 2010

The baker in his bakery is able to exchange all component.

What we need in healthcare is that healthcare providers and organisations can select the components freely.

No more proprietary solutions.
And an absolute separation between Healthcare and the IT-world.
What ever healthcare defines in terms of Instructions (Rules), Ingredients (information), and Moulds (Presentation) the IT-world can deal with it without reprogramming and database conversions.

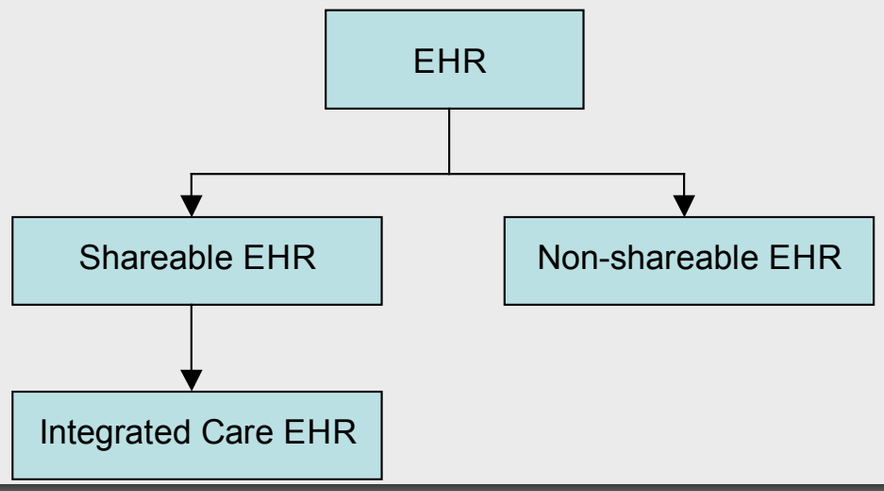
Any set of Rules, any set of Information, any presentation spec, can be executed by all IT-systems.

© copyright ERS 2010

Integrated Care Electronic Health Record

Definition
(ISO/tc215 20514: EHR - Definition, Scope and Context)

The IC-EHR has a standardised **information model**, which is **independent** of EHR systems.
Its primary purpose is the support
of continuing, efficient and quality integrated healthcare and
it contains **information**
which is **retrospective, concurrent and prospective**.



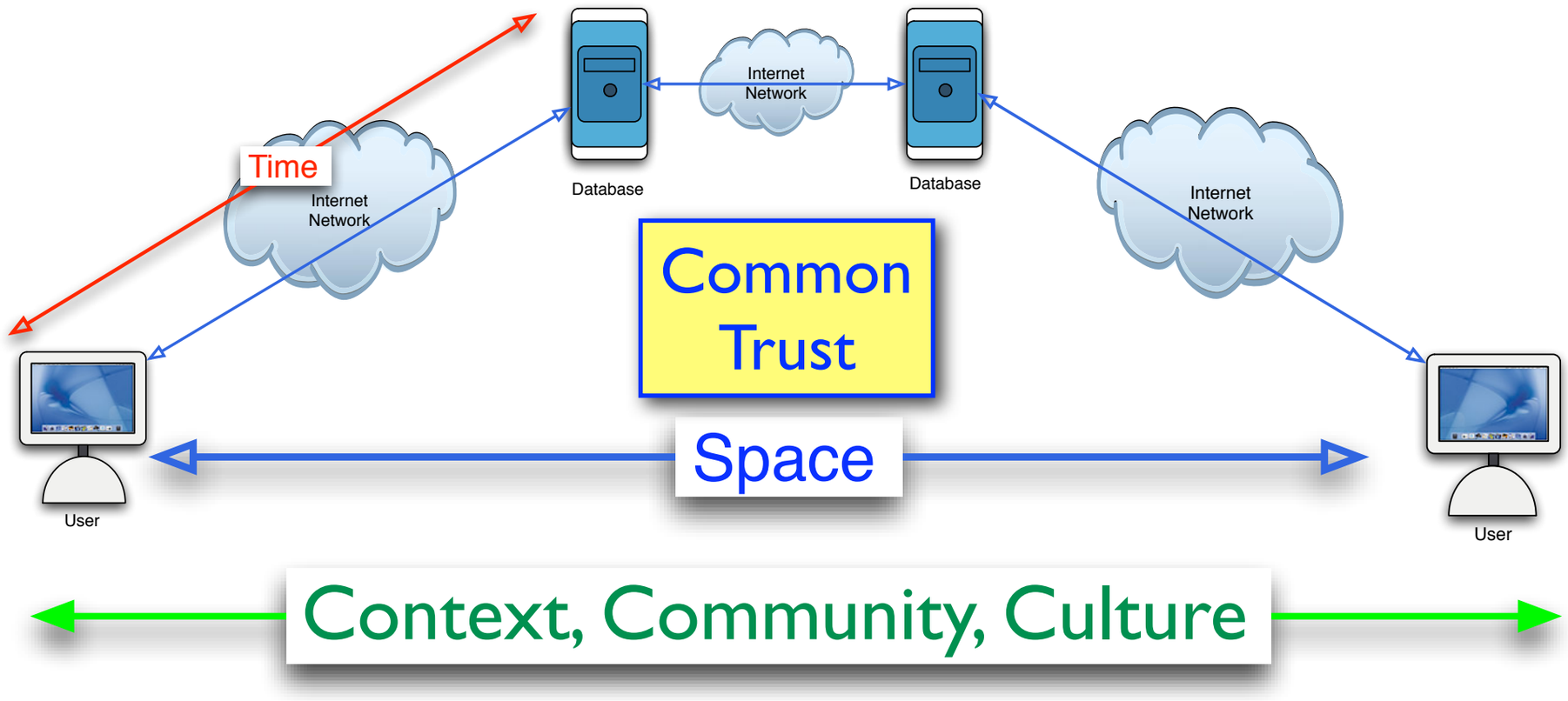
Friday, 15 October 2010

In order to be able to have seamless exchange between all systems ISO has produced some definitions.
Key is in the most elaborate state-of-the-art EHR IT-system Information will be defined independently (by a standard).

And documentation, archiving, adaptability will be requirements for those systems

EN13606
Basics

ERS
Electronic Record Services BV



© copyright ERS 2010

Friday, 15 October 2010

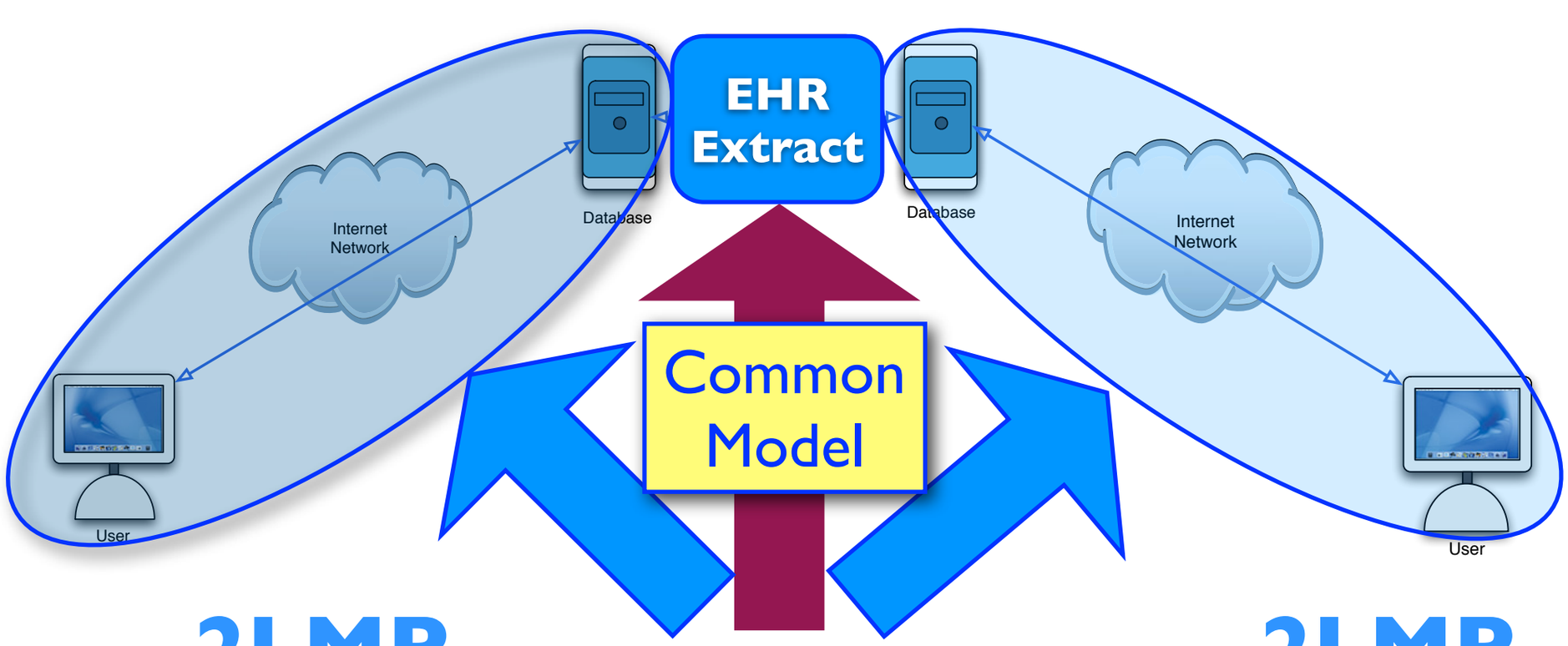
EHR's have two functions: transport of time (Documentation, Archiving), and transport over distance.
This is possible, only, when we have many stable standards and instituted trust in the middle.

We need a national/European eHealth Infrastructure based on open International standards and legislation.

EN13606
Basics

ERS
Electronic Record Services BV

Many, many unique identifiers



2LMP

Documentation
Archiving

2LMP

Documentation
Archiving

© copyright ERS 2010

Friday, 15 October 2010

Creating the EHR (eHealth) Infrastructure there two points of departure.
1-
For many years CEN/tc251 (like HL7) has started in the middle.
Message standards we produced to update proprietary databases.
2-
This century CEN/ISO started to think about standards at the EHR-system.
It standardised how Data or Information is stored, retrieved, archived AND exchanged.

It must be clear that therefor Message standards and EHR-standard have one thing in common.
But for many other aspects they have NOTHING in common.
There is only a partial overlap.

All this reflects different point of departure in CEN: Multiple languages.

EN13606 Basics

ERS
Electronic Record Services BV

Enterprise viewpoint

Information viewpoint

Computation viewpoint

Engineering viewpoint

Technical viewpoint

CEN/tc251
System of Concepts for Continuity of Care

CEN/tc251
EN13606 EHRcom
Information Bus

CEN/tc251 Health
Health Information Services
Architecture

EHR-systems

using
HL7

All viewpoints programmed in one system or message

© copyright ERS 2010

Friday, 15 October 2010

Depicted here is that in the case of messages
- work processes are standardised,
- translated in an Information Model
- the exchange between databases is choreographed
- and implemented in IT-systems, by programming and
- that have to rolled out.

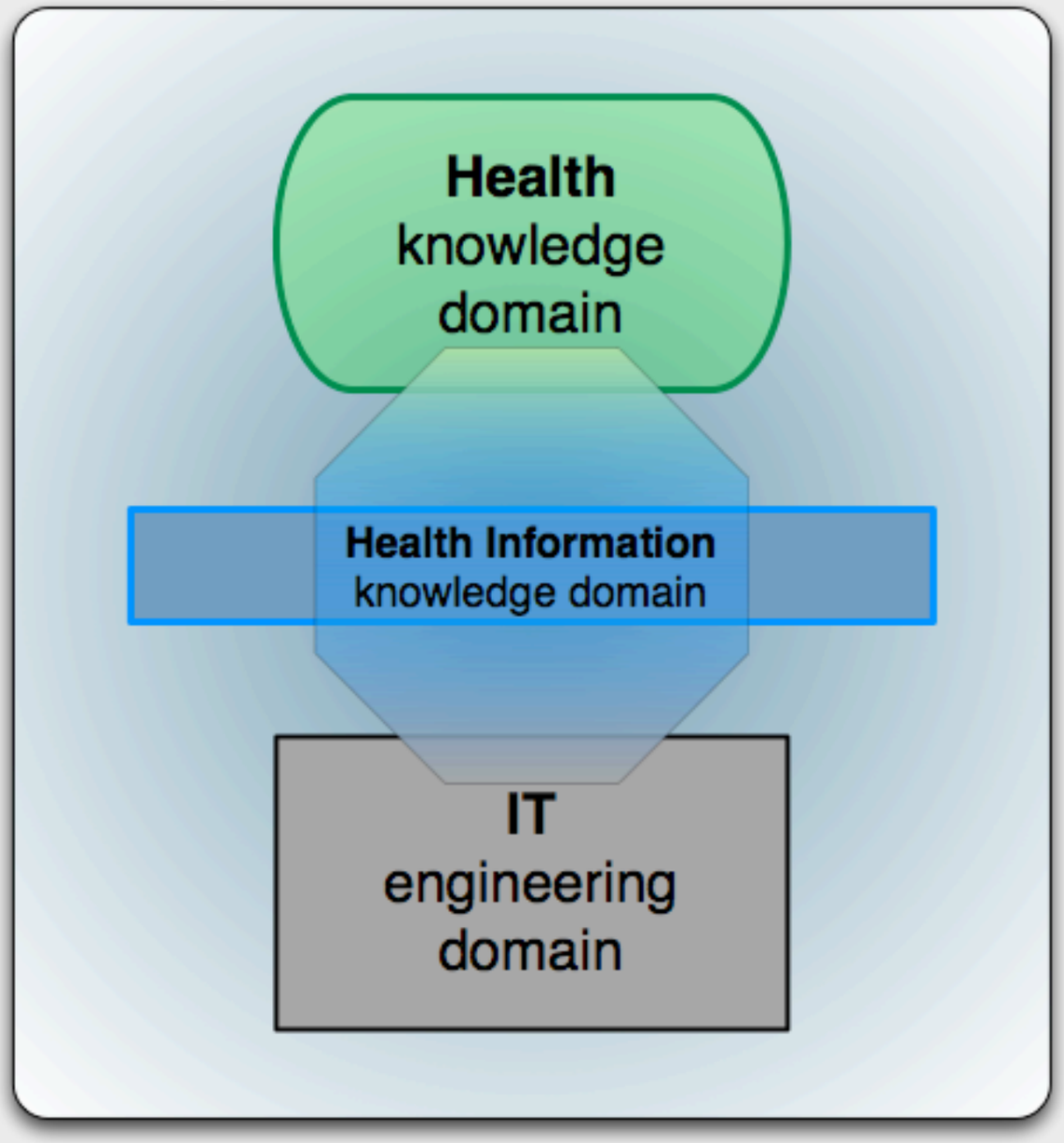
State-of-the-Art EHR-systems that are based on EN13606 behave differently.
They only define what has to be Documented, Exchanged, Archived and Re-Used.

They do NOT standardise Workflow or the way information is exchanged.
They define define Engineering and Technology choices.

They ceate EHR-systems that facilitate healthcare maximally.

EN13606 Basics Paradigm: Two-Level-Model

ERS
Electronic Record Services BV



Coding systems
Archetypes
Templates
Rules

EN13606-2

Tools

EN13606-1

Software
Tools
Services

© copyright ERS 2009

Friday, 15 October 2010

The Two Level Model Paradigm inaction.

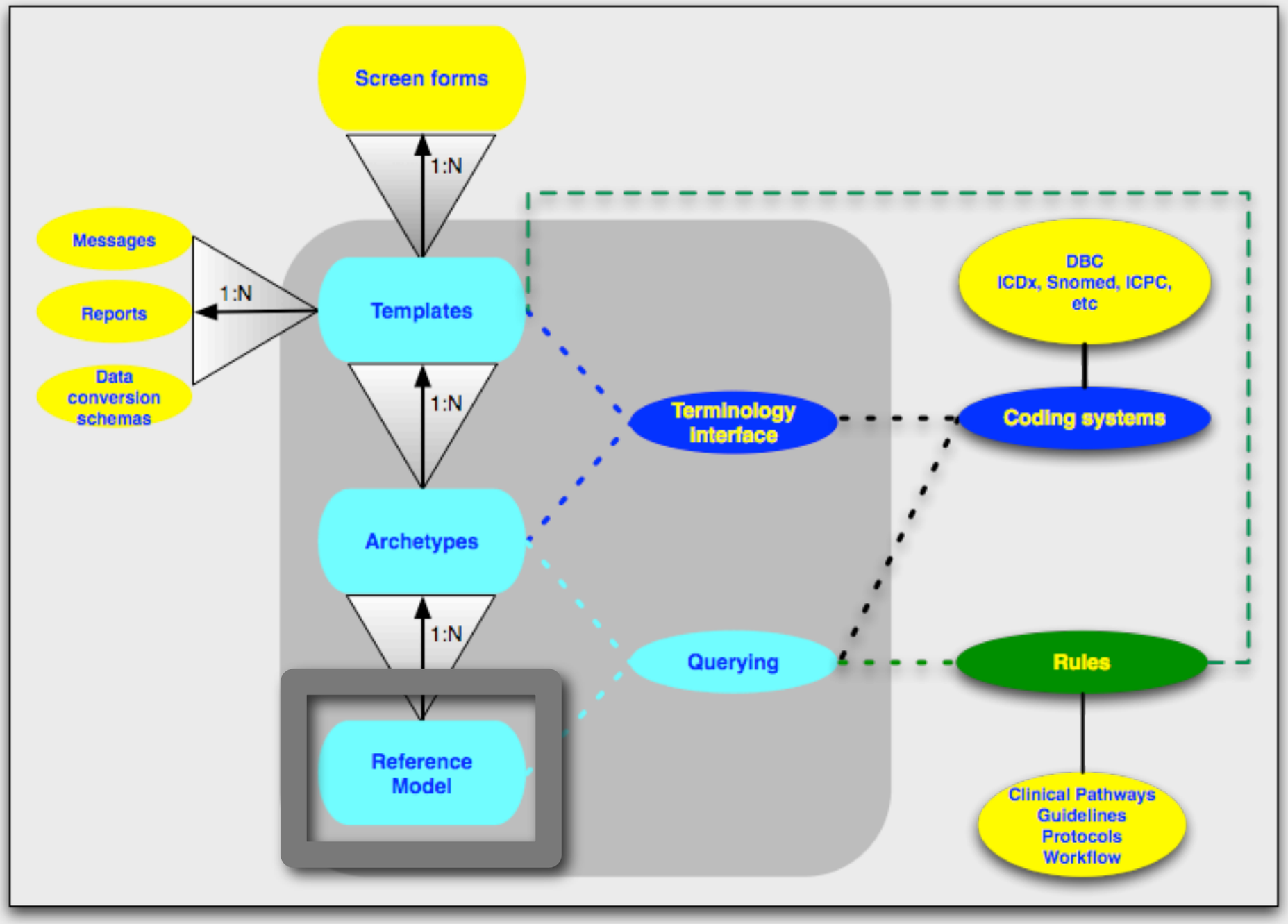
Model 1: EN13606-1 defines any Documenting Record and is very generic and stable.
Model 2: EN13606-2 is stable as well and allows the production of a Tool to build Archetypes.

Archetypes are expressed as constraints in Model 1.
Any Archetype and its associated data can be implemented in conforming systems immediately.

Healthcare needs to produce Archetypes.
The IT world deals with bits and bytes only.

EN13606
Basics
Archetypes/Templates

ERS
Electronic Record Services BV



© copyright ERS 2009

Friday, 15 October 2010

Based on Model 1 and 2 any archetype can be produced.
Each archetype defines what maximally can be documented about any topic.

Templates define the structure of the record and use any part of any archetype to express the (clinical) content.

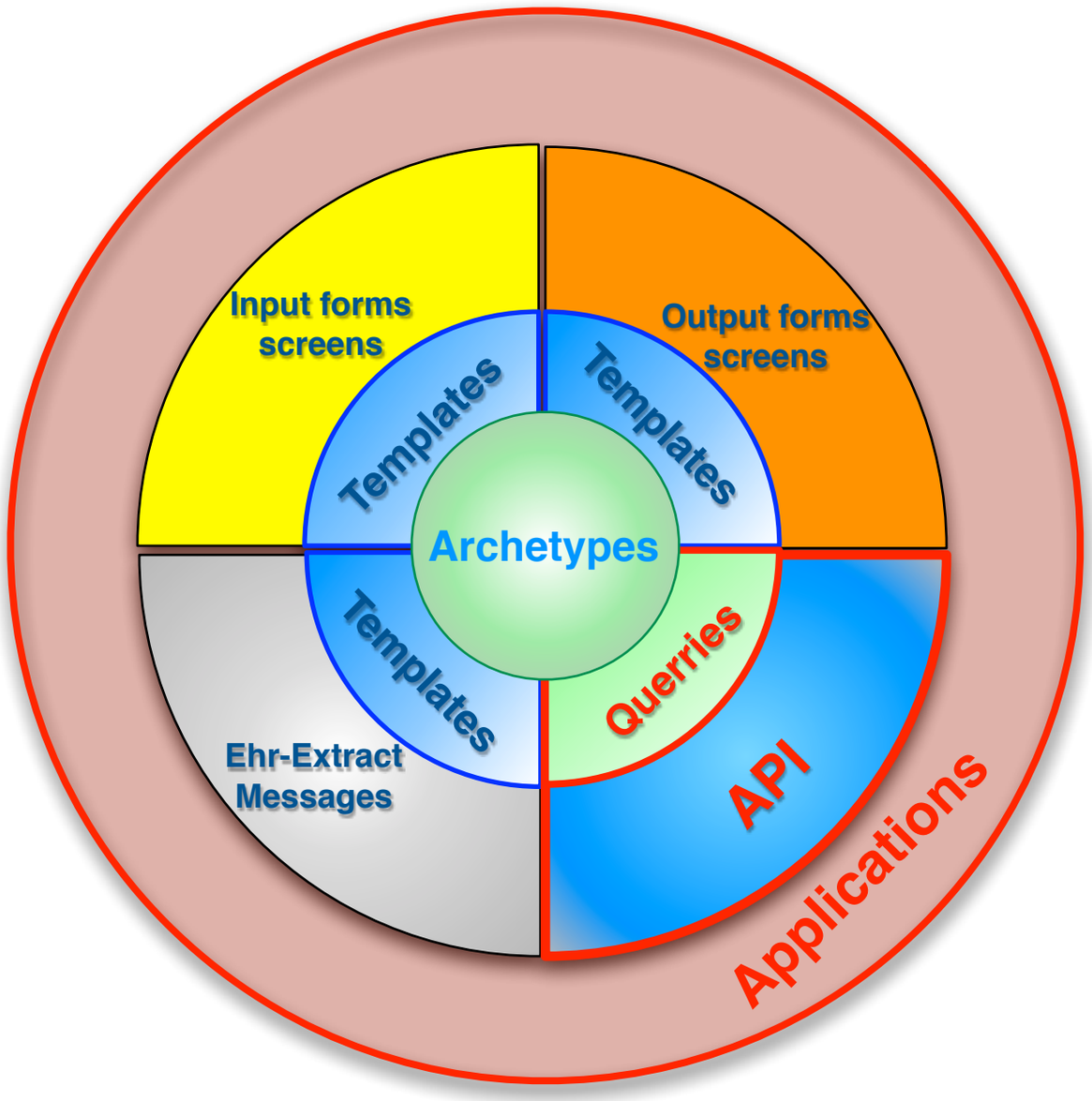
Each Template is the basis for any screen, report, message, etc.
A screen or message that is implemented immediately, not needing reprogramming IT-systems at all.

Archetypes and Templates use codes from coding systems and interact with Rules Engines and their defined business rules.

EN13606 Basics Archetypes/Templates

ERS

Electronic Record Services BV



Applications Services

PAS
MPI
Pacs
RIS
e-Prescription
Clinical Paths
Work flow
Case management
Data Mining
Reporting
Billing
...

© copyright ERS 2010

Friday, 15 October 2010

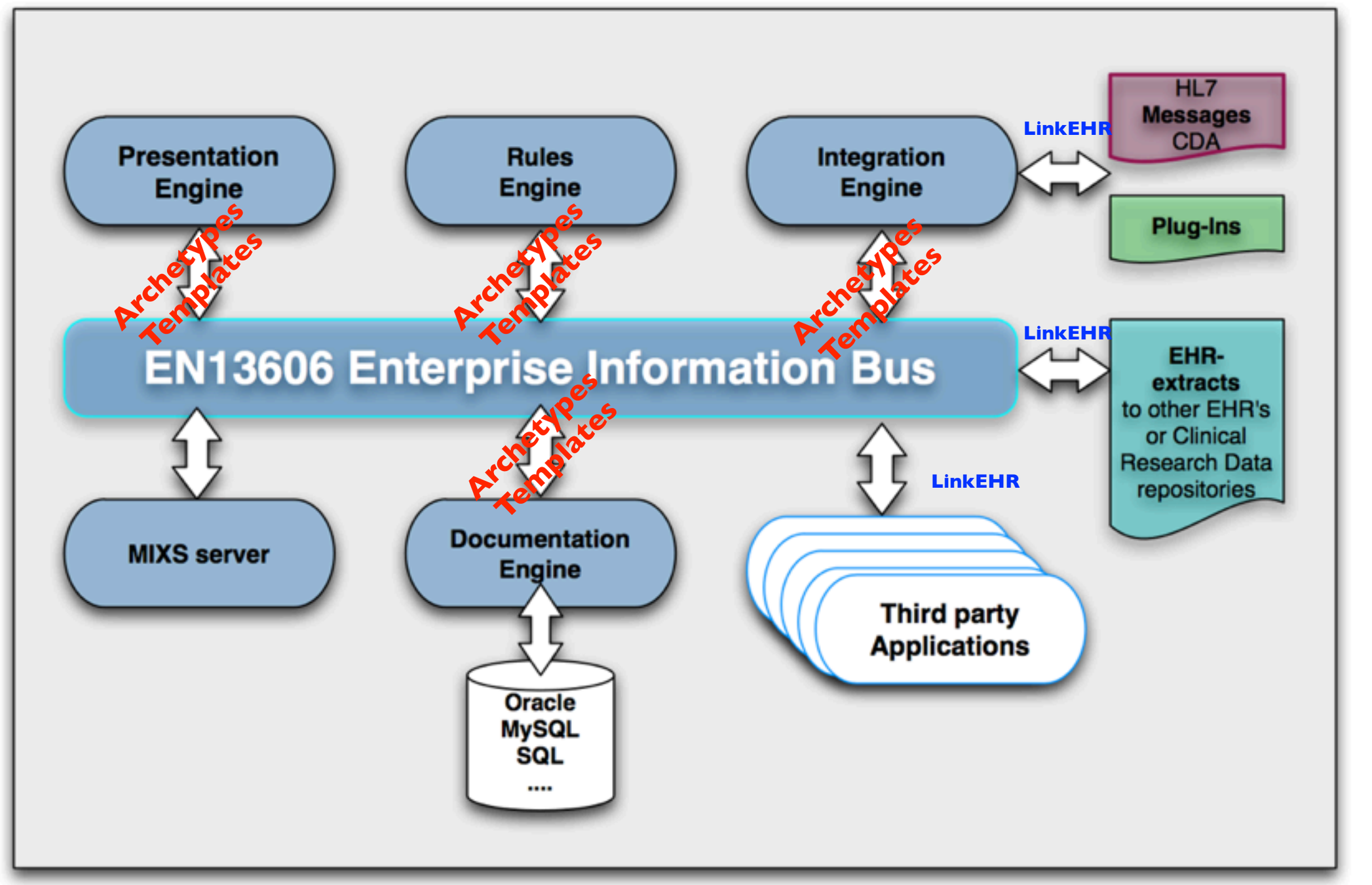
IT-systems based on EN13606 use Archetypes in Templates and use it for querying.
Templates are constructs with a structure in which pre-defined and shared archetypes are used to generate input/output screens, forms, documents, messages, etc.

Templates are defined in a local context and can be changed any time, any place.

What is needed is one centrally owned and maintained library of standard archetypes.
Each healthcare speciality will be responsible for its library of archetypes.
Their Archetype LIbrary with all its bindings to codes from coding systems will express the INFORMATION needs of their domain.
The eHealth Infrastructure must have this organised.

EN13606
Basics
IC-EHR Architecture

ERS
Electronic Record Services BV



Friday, 15 October 2010

When and if EHR-systems are based on the EN13606
- they can use EN13606 based Archetypes/Templates.

- All Generic Engines for Presentation, executing business rules and Integration deal with normalised (standardised) data and Information.

- Archetypes and Templates play an important role.

Message based paradigm

versus

Archetype based paradigm

	Message based EHR-systems	Archetype based EHR-systems
Production of message	1-3 years	Minutes
IHE process Programming	1-2 years 1-2 years	nil nil
Roll Out	1 year	nil
Total	YEARS	**Minutes/Days**

Friday, 15 October 2010

Why use the EN13606 in present day one-off IT-systems?

When the EN13606 is used for the exchange function only. There are already striking differences that will influence the discussions on eHealth Infrastructure and the EHR-architecture.

The time it takes to produce and implement new Message specifications or make changes to the database in RED

And the same in State-of-the-Art EHR-systems based on the Information Bus (EN13606)

The differences are exciting and staggering.

HL7
Virginia Lorenzi (2009)

How long did/does it take?

- Interface Engine preparation
  - about 18 man-months
- Proprietary to/from HL7
  - 3 to 7 man-months.
- HL7 to HL7
  - 1 to 3 man-months
- Estimates include
  - time for design, development, testing, production planning, and production move.
  - time for communication.

ERS©

Exchange HL7		DCM	EN13606 Exchange			EN13606 EHR-system
Message to exchange between proprietary databases **NOT conformant to ISO18308**	Scope		**EHR Extract** Reference Model describing documentation of: Structure of a document, archiving, digital signatures patient mandate, semantic links **Conformant to ISO18308**	Scope	Reference Model En13606-1	EHR-System Reference Model describing documentation of: Structure of a document, archiving, digital signatures patient mandate, semantic links **Conformant tom ISO 18308**
			Model describing how to make constraints on EN13606-1		EN13606-2	Model describing how to make constraints on EN13606-1
Not specified			Patient Mandate for complete record or any part of it		EN13606-4	Patient Mandate
		DCM	Describing what gets documented about: Information components/concepts			Describing what gets documented about: Information components/ concepts
			EN13606 representation of DCM		Archetype	Definition of how a topic is stored in a conformant database
Message Reference Information Model to produce statements	RIM					
Model describing a knowledge domain	DMIM		Describing the information needs in a domain for exchange		Archetype Library	Domain Information that can be stored in a database
Model describing according to the scope of the specific messages	RMIM / CDA / (Templates)		Model describing local context the exchange: structure domain content		Template	Description of the structure and content used in a local context for a report, screen
Standard Message Technical respresentation	XML-Schema		Defines the content of the exchange	EHR-Extract	EHR-Extract/ Archetype/Template	Defines the content of the record
Describing model/tech spec of messages with all degrees of freedom removed	IHE profile		Not necessary because of EN13606			Not necessary because of EN13606-1
IT-vendors adapt software in a region/ country leading to database conversions	Implementation		Immediate implementation of the extract without re-programming need. No database conversions are needed	Implementation	Implementation	Immediate implementation of the extract without re-programming need. No database conversions are needed
Install with all users in a region in a country	Roll-out		Immediate automatic implementation of the extract and its describing archetypes/template	Roll-out	Roll-out	I Immediate automatic implementation of the extract and its describing archetypes/template
Not possible	Local adaptability		Possible	Local adaptability	Local adaptability	Possible

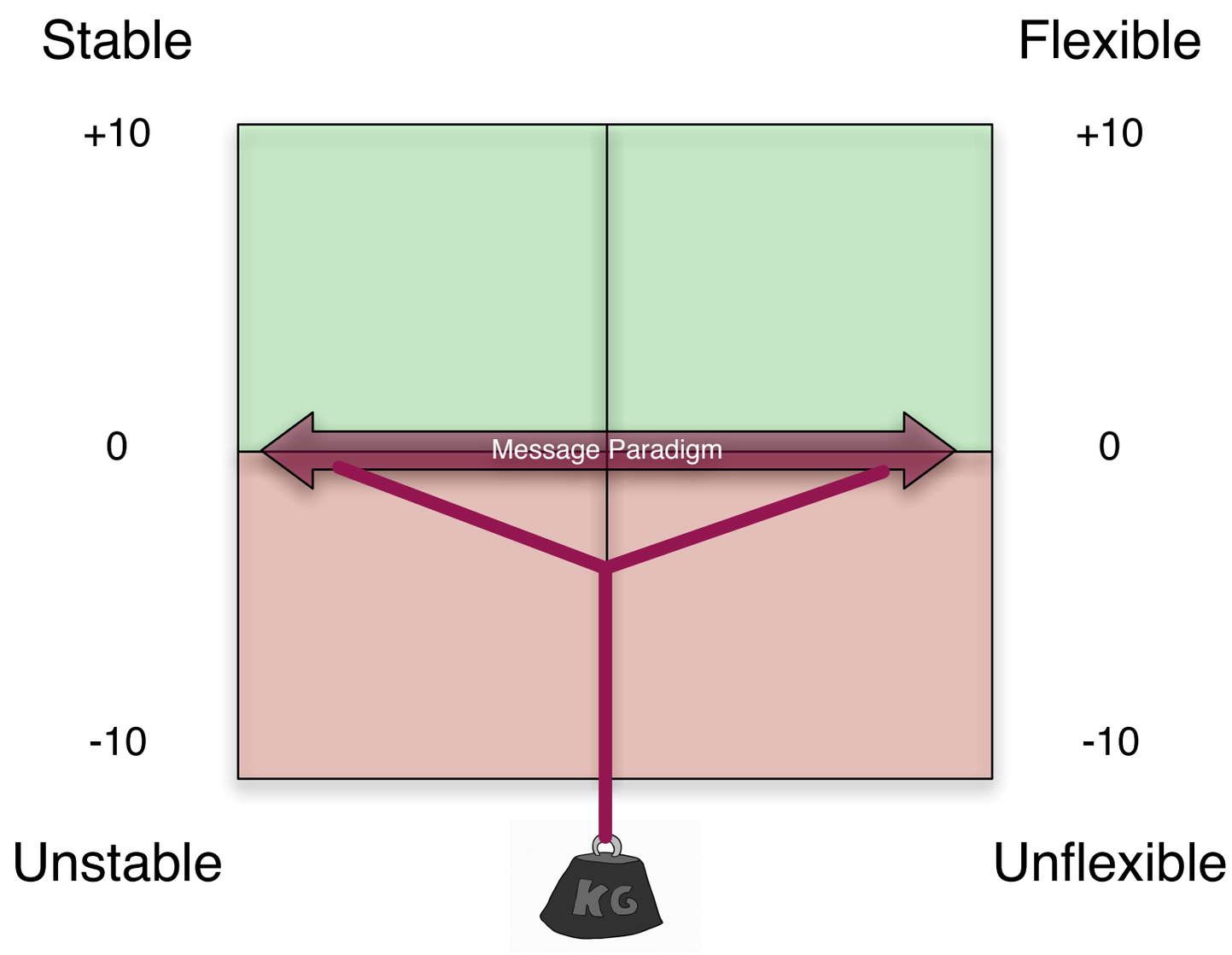
Friday, 15 October 2010

I tried to reflect the similarities and differences between HL7 artifacts and those of CEN/ISO EN13606

Message based paradigm

versus

Archetype based paradigm



Friday, 15 October 2010

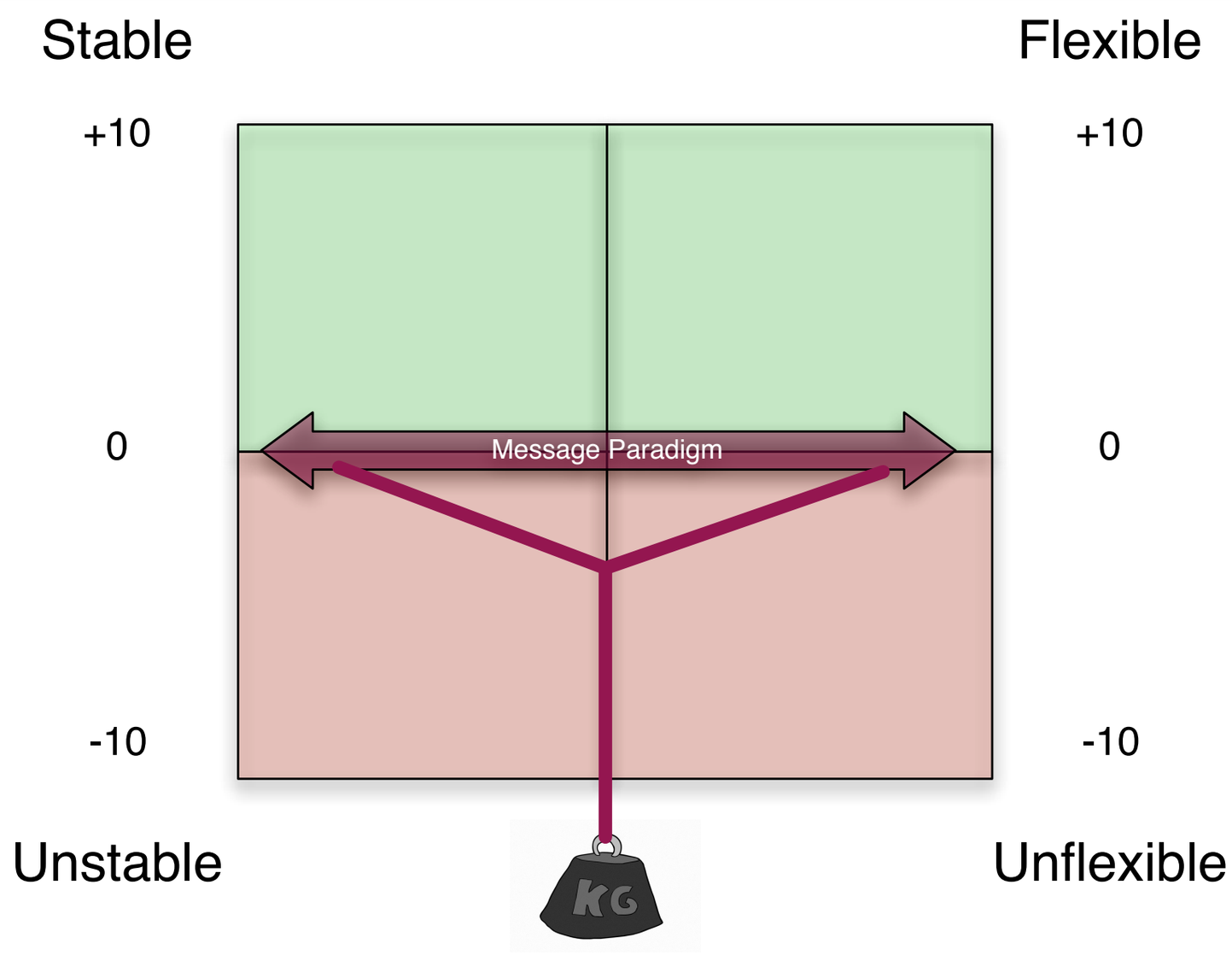
One model Message Paradigm

A general optimal situation is created.
Because of the resources (Time and money) needed it will always be suboptimal and very static

Message based paradigm

versus

Archetype based paradigm



Friday, 15 October 2010

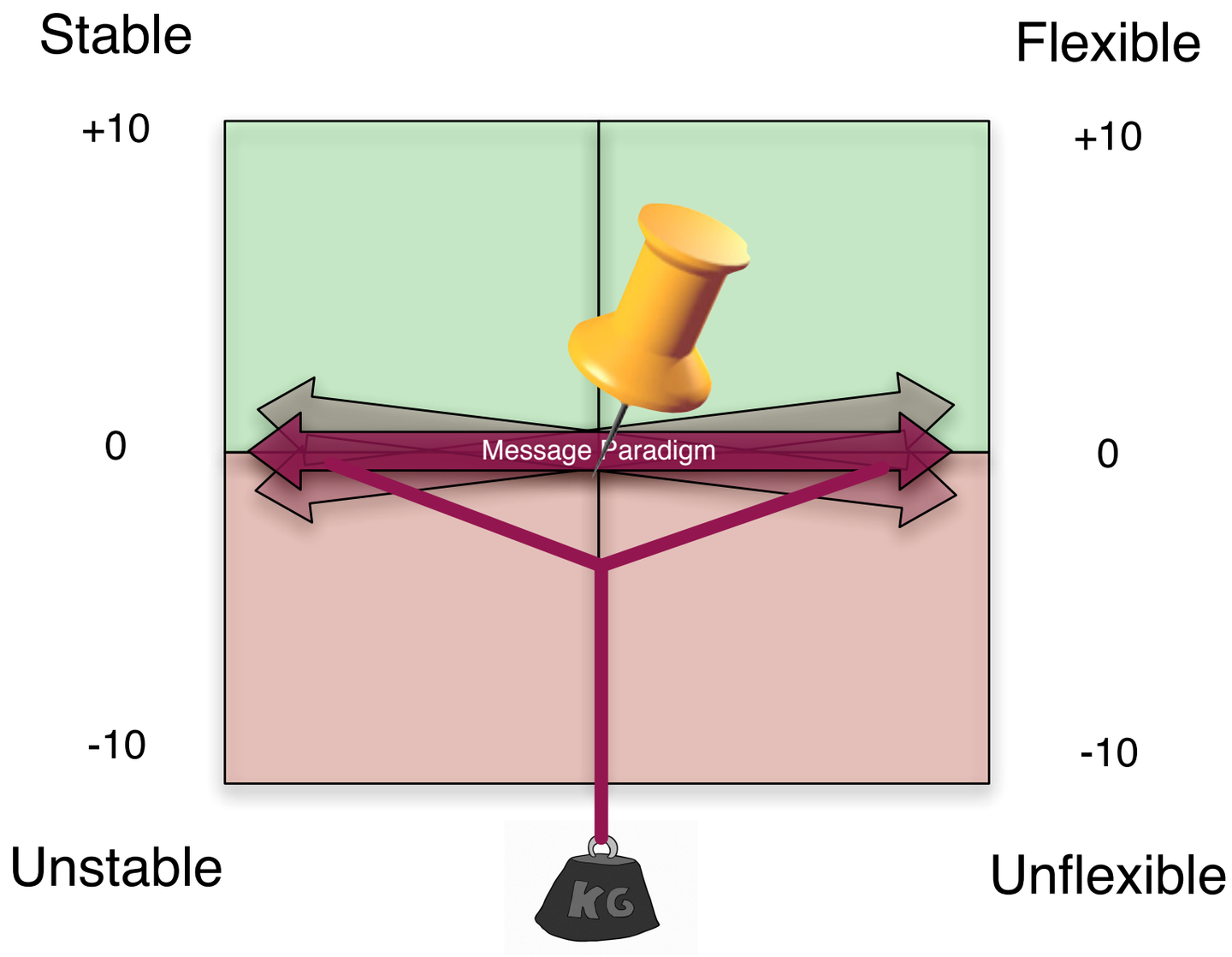
One model Message Paradigm

A general optimal situation is created.
Because of the resources (Time and money) needed it will always be suboptimal and very static

Message based paradigm

versus

Archetype based paradigm



Friday, 15 October 2010

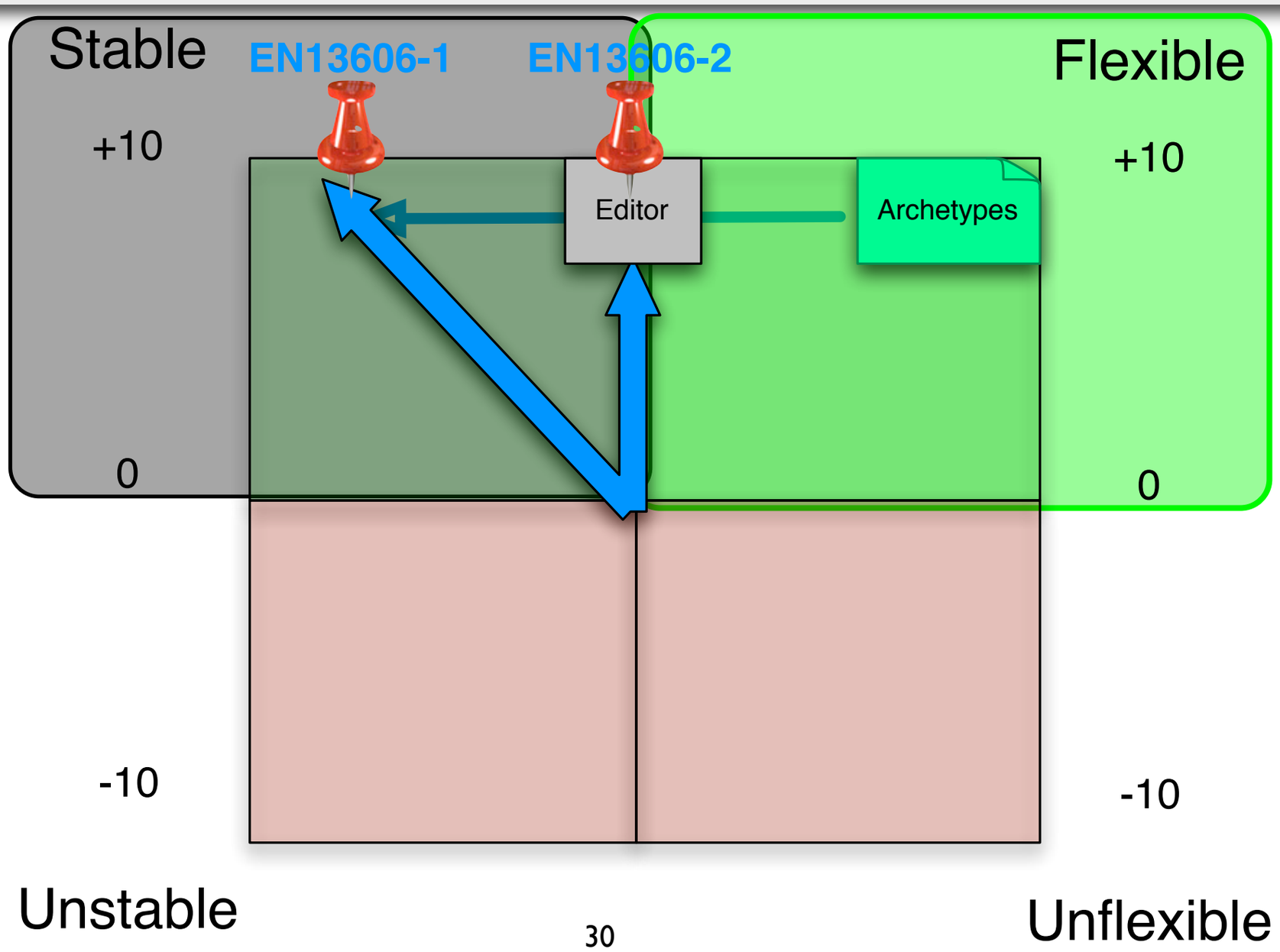
One model Message Paradigm

A general optimal situation is created.
Because of the resources (Time and money) needed it will always be suboptimal and very static.
Only very small variations are possible. Always the suboptimum will be reached.

Message based paradigm

versus

Archetype based paradigm



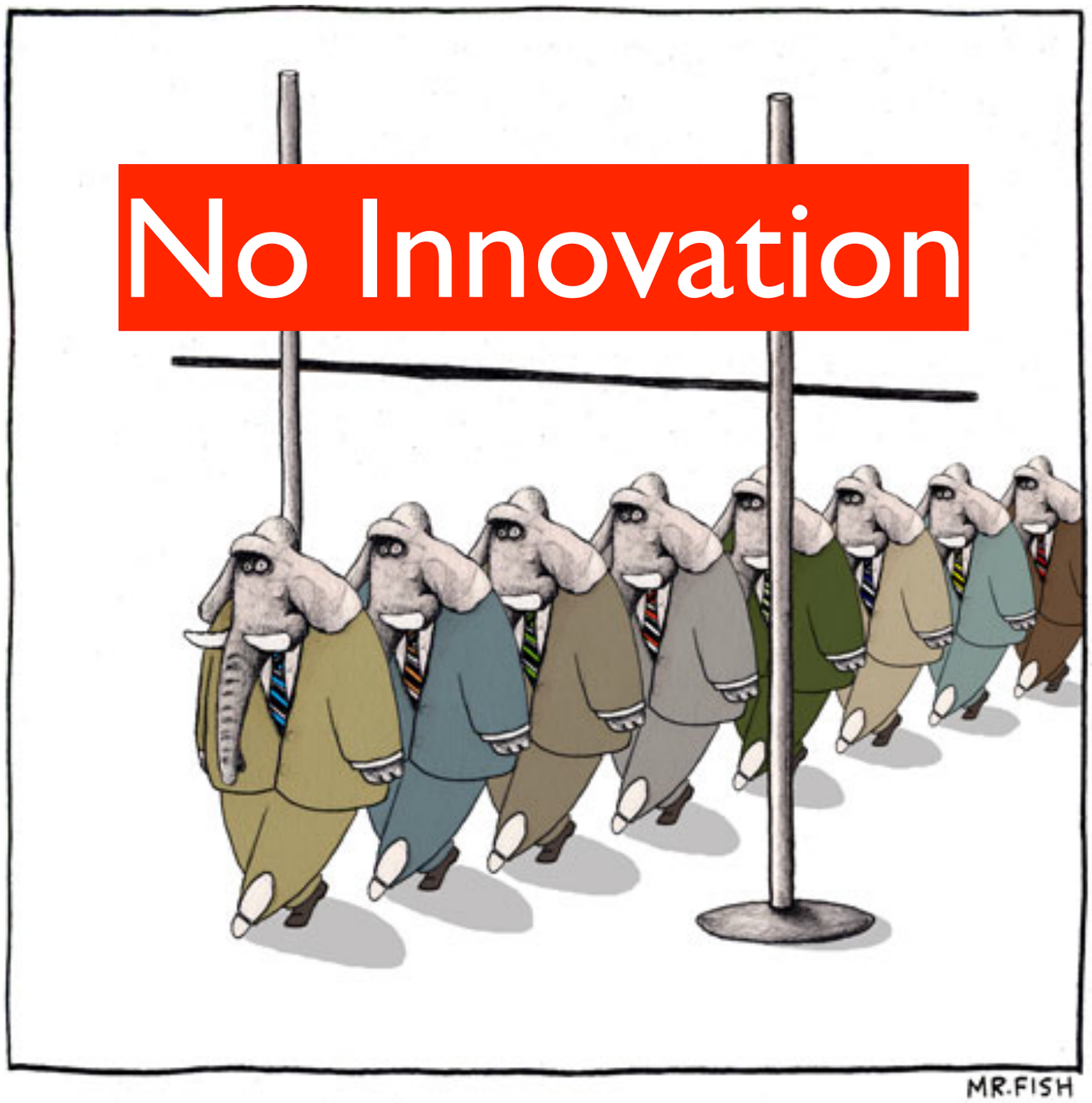
Friday, 15 October 2010

Two Level Model Paragdigm

Stable and flexible at the same time.
How?
Model 1 nails down the EHR-system with a Documentation/ArchivingModel
Model 2 allows healthcare to define extremely flexibly anything they want to document,
as constraints on the first model.

The IT-sector will be responsible for the Stable part.
Healthcare for the Flexible part.
A complete separation of concerns.

Message standards: Edifact, HL7, IHE



Friday, 15 October 2010

When in a country a set of messages is implemented by the IT-industry this set is based on one use case.
All IT-systems, Healthcare organisations and healthcare providers will treat the diabetic patient is exactly the same way.

It takes too many resources (time and money) to produce, profile and test the messages.
Small scale, local, experiments treating patients differently
and organise the exchange differently
or exchange new different things,
will NOT be possible.

The Messaging Paradigm stops INNOVATION

What is an EHR?

Slide kindly provided by ***Søren Vingtoft***

Friday, 15 October 2010

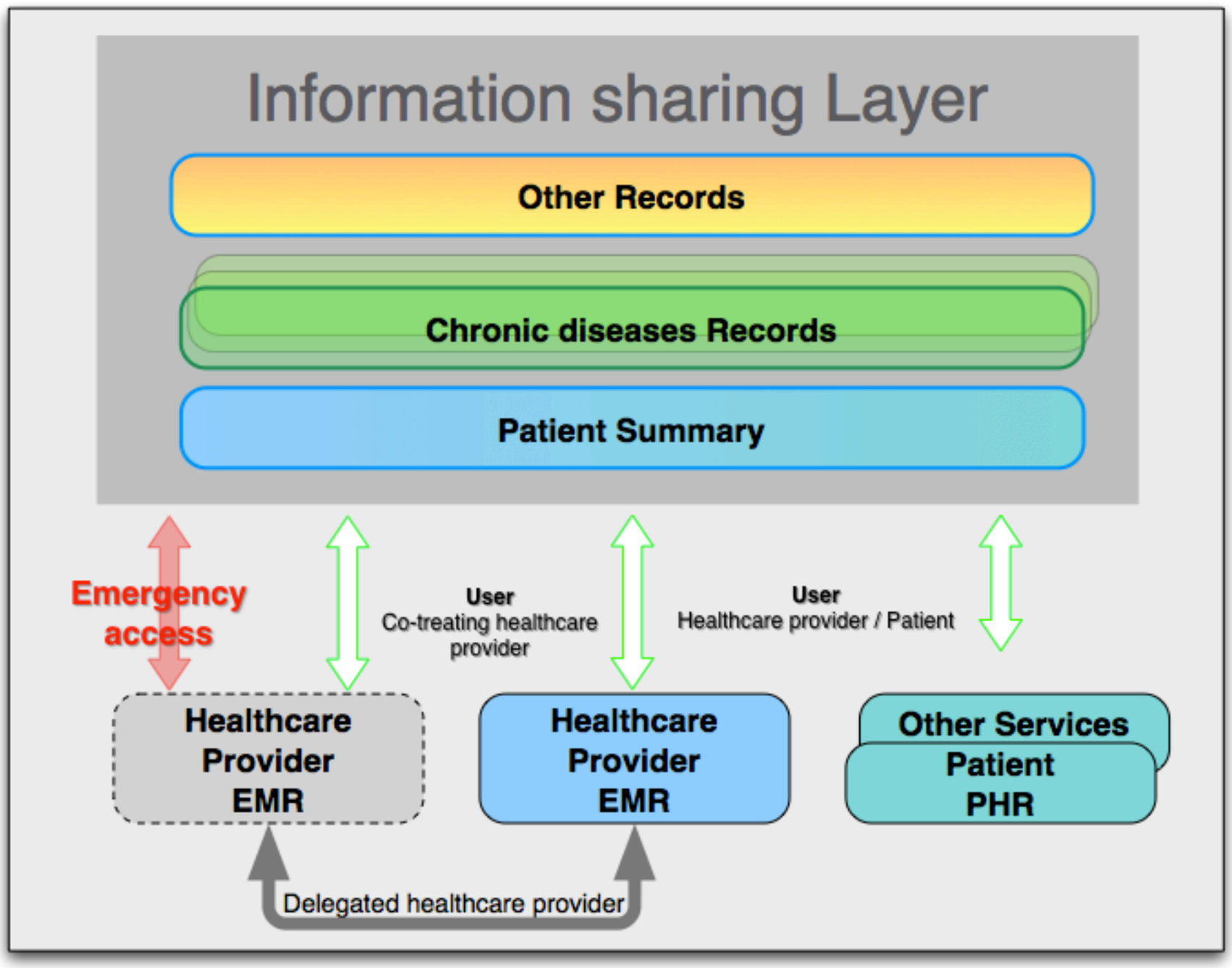
There are many ideas of what an EHR is.
I will not discuss reasons why an EHR is essential in this day and age.

I will discuss what to my mind IS the EHR.

© copyright ERS 2010

What is the EHR?
eHealth Infrastructure?

ERS
Electronic Record Services BV



© copyright ERS 2010

Friday, 15 October 2010

In Essence the EHR is ALL what you see in this picture.
It is a high level model I use to think about an eHealth Infrastructure and the EHR.

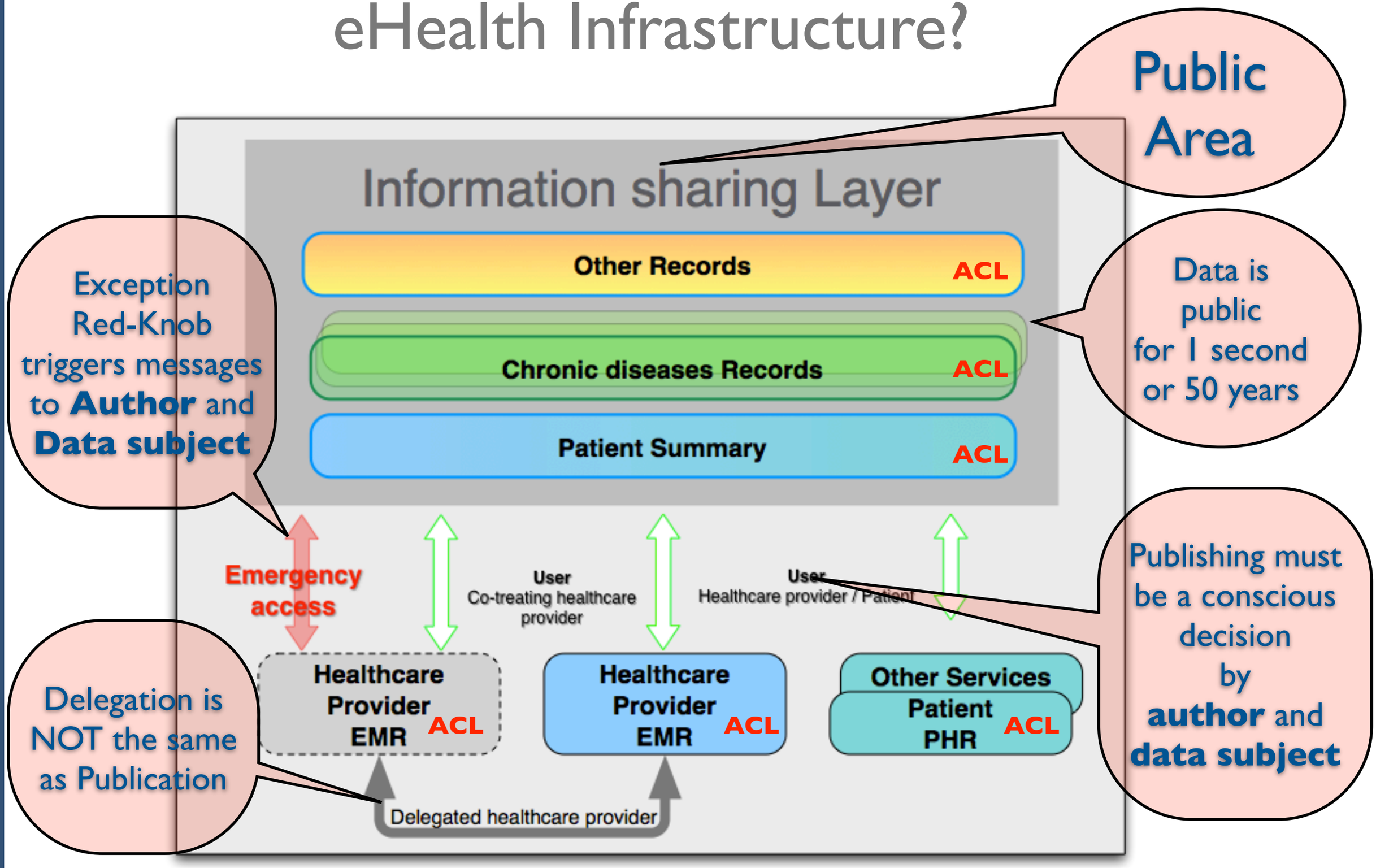
The prime function of the EHR is to document the treatment given to a patient by a healthcare provider
(Sometimes patients treat themselves and are healthcare provider, also)

Some experiences indicate that any solution that does not fit this picture leads to avoidable discussions and problems in the acceptance.

1- the eHealth Infrastructure (and EHR) is about DOCUMENTATION of the care delivered. The author is central. IT must facilitate and document the provision of healthcare.
In the context of the EHR it is NOT the patient that is central!
It is the documentation and archiving of the care delivered.
2- Not only the HCP is author. The patient and its surrounding carers have a need to document.
3- Each author is responsible for what he documents.
4- It is the author (Together with the patient) that decide what will be published in an Information Sharing Layer. They control the Access Control LIst.
5 -E.g. discharge letters will be published for short period of time. The patient summary and the chronic care record will be there permanently. Each artifact needs an accountable person as
5- They can add any other to the ACL as a conscious decision they need to take accountability for.
6- Delegation must not be confused with data in the Information sharing Layer.
7- Seldomly one will need immediate access and has to invoke the Red Button procedure, leading to immediate alerting all authors AND the patient.

What is the EHR?
eHealth Infrastructure?

ERS
Electronic Record Services BV



© copyright ERS 2010

Friday, 15 October 2010

In Essence the EHR is ALL what you see in this picture.
It is a high level model I use to think about an eHealth Infrastructure and the EHR.

The prime function of the EHR is to document the treatment given to a patient by a healthcare provider
(Sometimes patients treat themselves and are healthcare provider, also)

Some experiences indicate that any solution that does not fit this picture leads to avoidable discussions and problems in the acceptance.

1- the eHealth Infrastructure (and EHR) is about DOCUMENTATION of the care delivered. The author is central. IT must facilitate and document the provision of healthcare.
In the context of the EHR it is NOT the patient that is central!
It is the documentation and archiving of the care delivered.
2- Not only the HCP is author. The patient and its surrounding carers have a need to document.
3- Each author is responsible for what he documents.
4- It is the author (Together with the patient) that decide what will be published in an Information Sharing Layer. They control the Access Control LIst.
5 -E.g. discharge letters will be published for short period of time. The patient summary and the chronic care record will be there permanently. Each artifact needs an accountable person as
5- They can add any other to the ACL as a conscious decision they need to take accountability for.
6- Delegation must not be confused with data in the Information sharing Layer.
7- Seldomly one will need immediate access and has to invoke the Red Button procedure, leading to immediate alerting all authors AND the patient.

-4-

What is missing?

a semantic interoperability

supporting **infrastructure**

© copyright ERS 2010

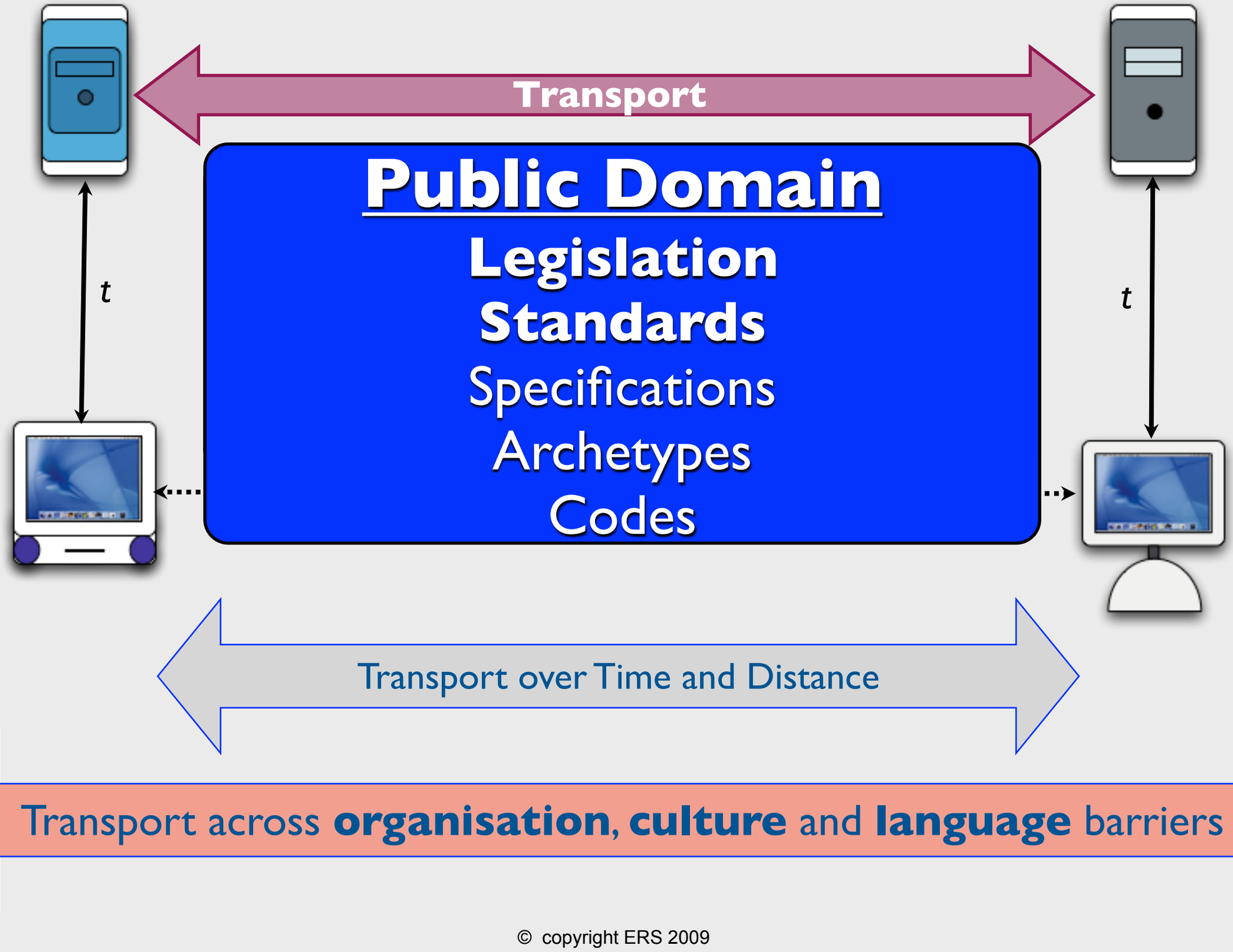
ERS

Electronic Record Services BV

1. **Legislation**
2. **the Semantic Stack as a (European) Service**
   a shared quality assured library of:
   - Archetypes, Templates
   - Terminologies/Codes and
   - Ontologies
3. **Quality Assurance**
4. **Shared IPR and Licenses**
5. **Accountable organisation(s)**

ERS
Electronic Record Services BV

What is needed



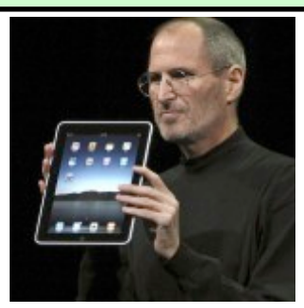
Transport over Time and Distance

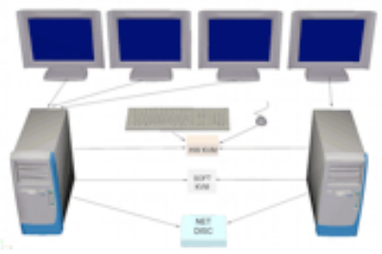
Transport across **organisation**, **culture** and **language** barriers

© copyright ERS 2009

R&D - Innovation
Digital Agenda

Effect on society	-	**Innovation**
Infrastructure	-	Infrastructure
R&D - New products	One-off	Commodity





EMR

EHR

ERS

Electronic Record Services BV

Digital Agenda

Infrastructure
Infostructure

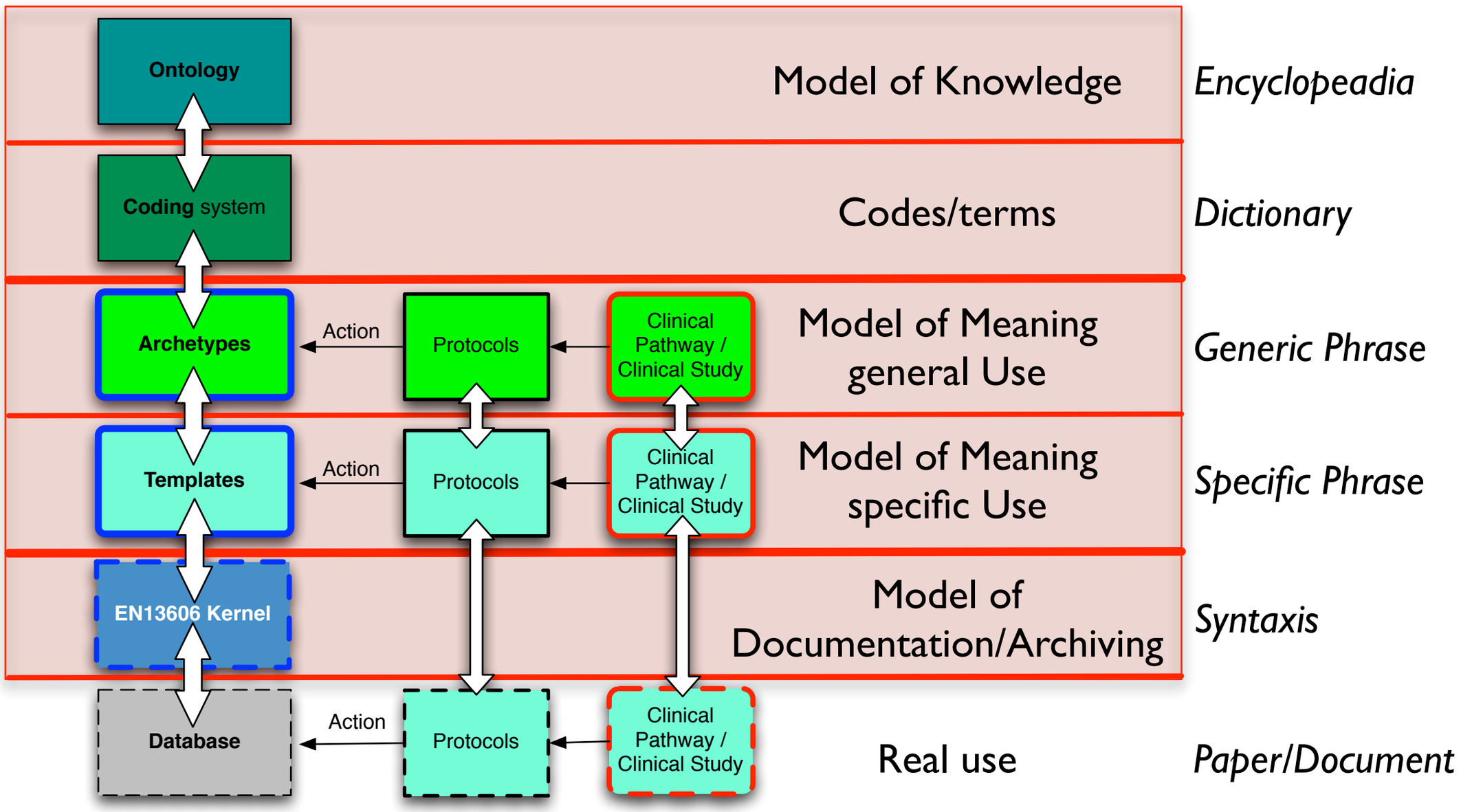
Legislation
Standards

© copyright ERS 2010

What is needed
Semantic Interoperability Stack

ERS
Electronic Record Services BV

DCM



© copyright ERS 2010

Friday, 15 October 2010

Semantic stack.
This is an idealised picture of what is needed for real semantic interoperability.

We have to deal with:
a- Model of Documentation/Archiving (Syntaxis)
b- Codes/terms (Dictionary)
c- Model of Knowledge (Encyclopedia) to allow systems to reason about the data and information in the future and build correct coding systems.
d- Models of Meaning in general and in specific local contexts.

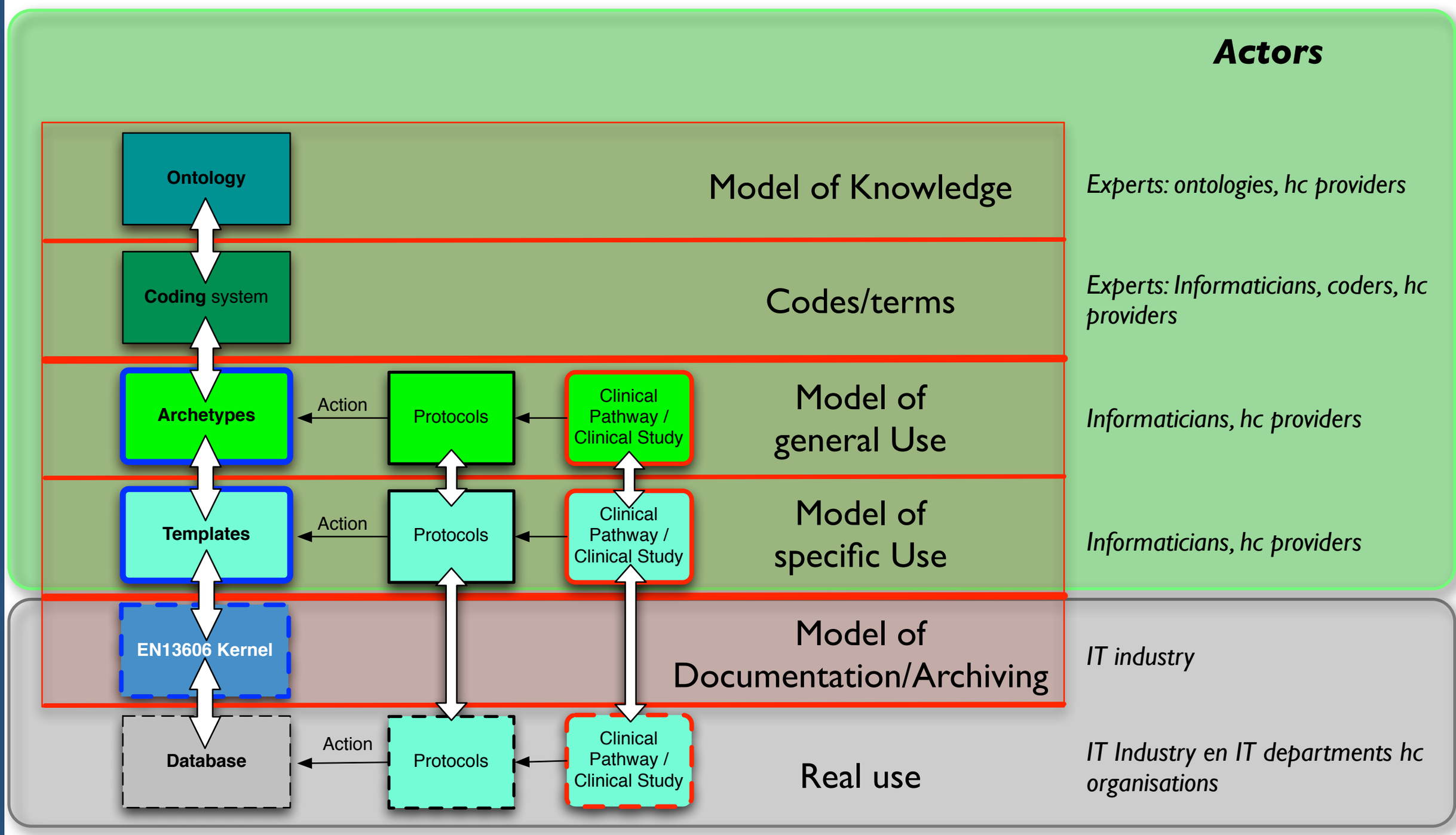
Archetypes/templates are needed because without it is is possible to construct correct but meaning less sentences:
- the Moon drank the mountain
Or express the opposite of what it states literally
- Once upon a time ...

Archetypes and Templates are produced on the basis of local agreements.
And can not be considered Universals like Codes or elements of the Ontology.

It must be possible to express that locally in a specific context a Blood Pressure of 120 mm/Hg is abnormal because it is a new born baby.
Archetypes and Templates define what is at this moment and in that context considered the interpretation of ‘normal’.

What is needed

ERS
Electronic Record Services BV



© copyright ERS 2010

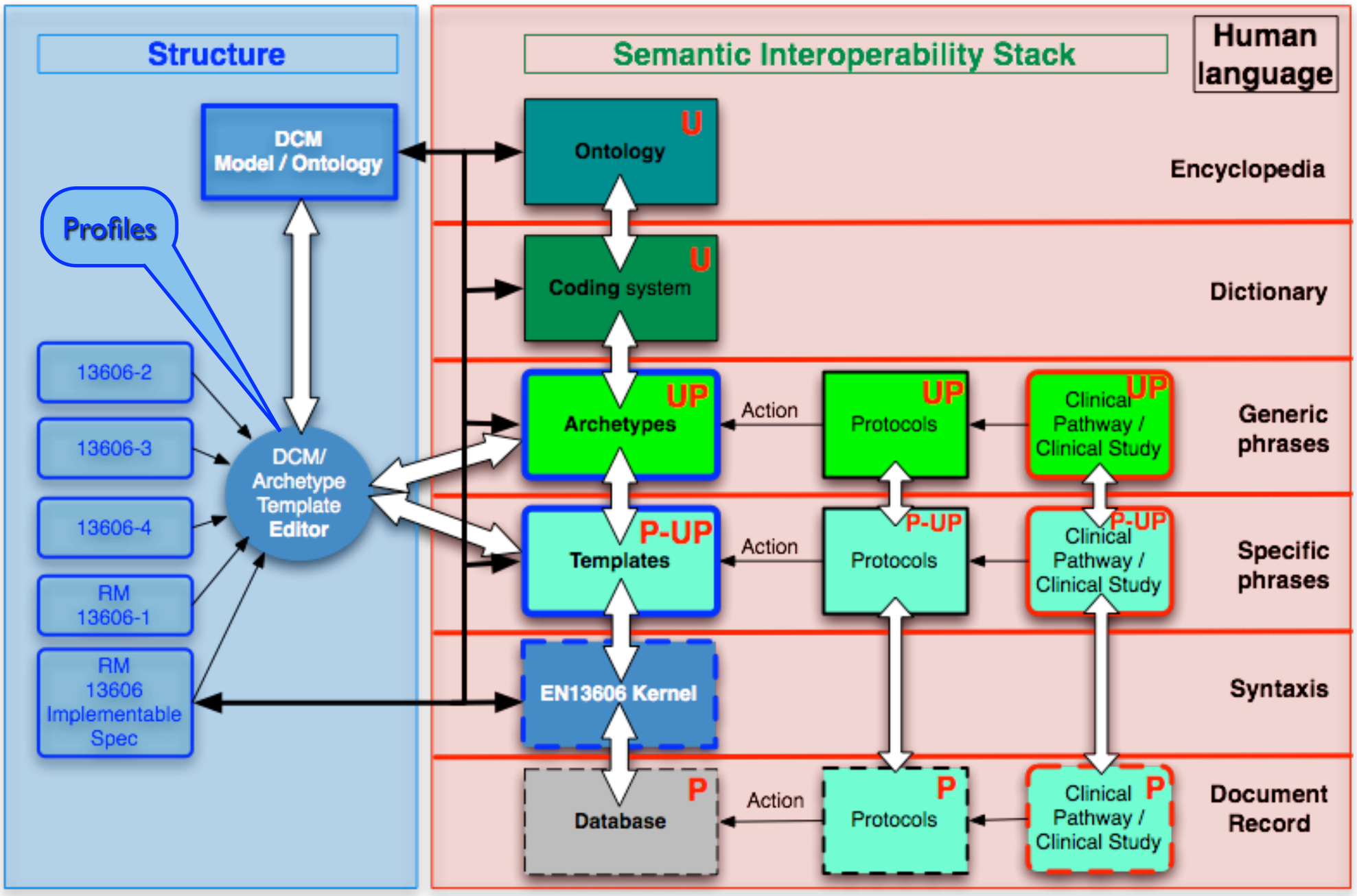
Friday, 15 October 2010

The Healthcare domain will be responsible for the GREEN parts.
The IT-industry will be responsible aand active in the GREY domain.

IT-systems will be able to deal with all archetypes/templates the Healthcare Domain produces.
IT-vendors no longer are responsible for the data/information content.

ERS
Electronic Record Services BV

Concept
Semantic Interoperability Stack



© copyright ERS 2010

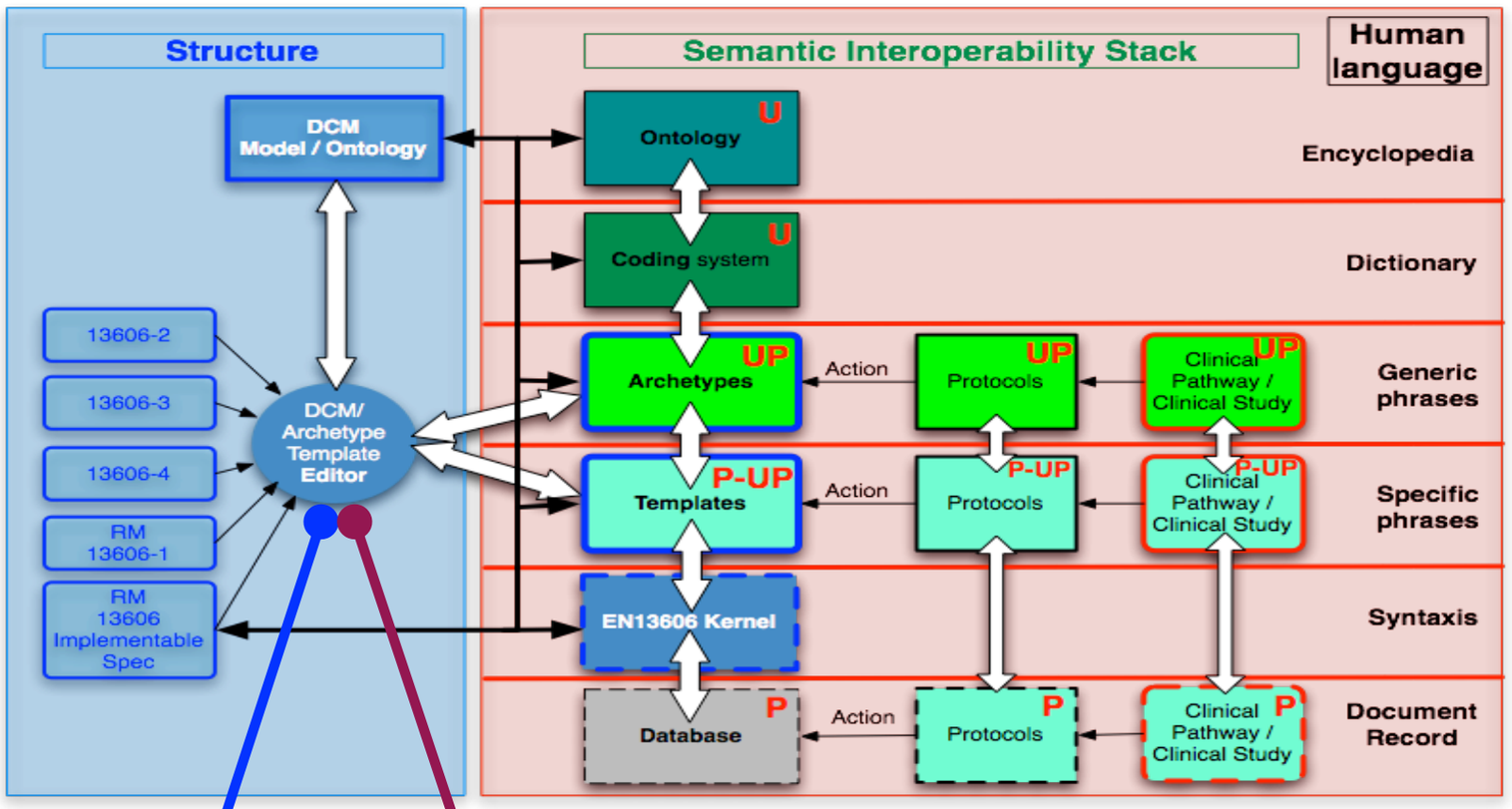
Friday, 15 October 2010

The future of Semantic Interoperability

For Semantic Interoperability now and in the future it will be essential to have an Ontology define health knowledge.
The Ontology must drive the DCM Tooling but also the Coding systems used.

ERS
Electronic Record Services BV

Concept
Semantic Interoperability Stack



Archetype
EN13606

Template
HL7 v3

© copyright ERS 2010

Friday, 15 October 2010

Detailed Clinical Models (DCM's) will define the health content.
Based on a general DCM Model profiles for recurring Documentation Patterns and Semantic Patterns the health related content is generated.
Based on the common Patterns it must be possible to generate constraints on any Reference Model.
In the context of EN13606 this must be the EN13606-1.

ERS
Electronic Record Services BV

EN13606 Consortium/Association

© copyright ERS 2010

EN13606 Consortium-Association

ERS
Electronic Record Services BV

www.EN13606.org

© copyright ERS 2010

EN13606 Consortium-Association

ERS
Electronic Record Services BV

UK

Sweden

Spain

Slovakia

Australia

Germany

Norway

Ireland

USA

Netherlands

Brazil

New Zealand

Serbia

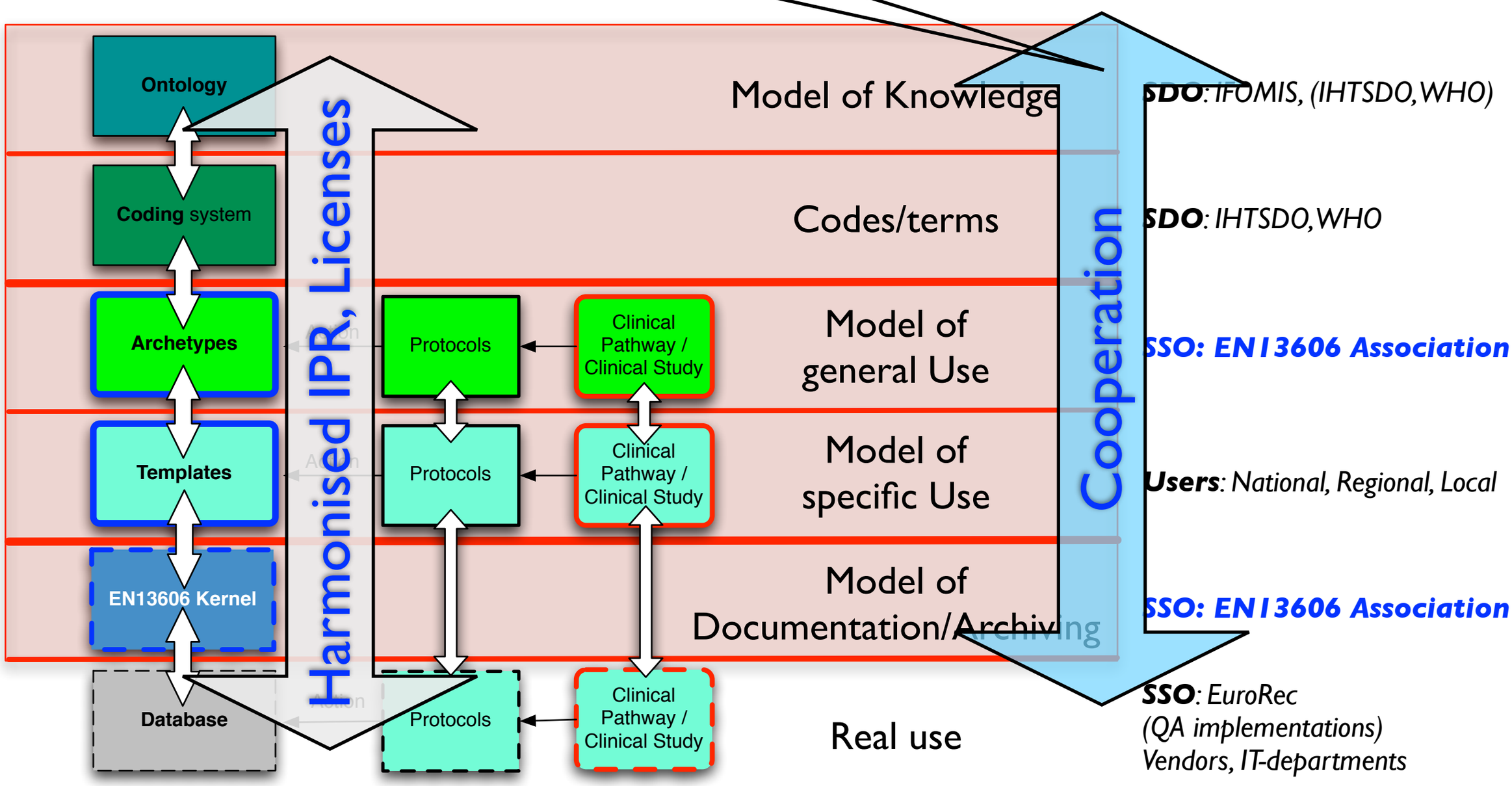
USA

Singapore

What is needed

ERS
Electronic Record Services BV

Consequences for
- Standardisation
- Funding



Actors

***SDO**: IFOMIS, (IHTSDO,WHO)*

***SDO**: IHTSDO,WHO*

SSO: EN13606 Association

***Users**: National, Regional, Local*

SSO: EN13606 Association

***SSO**: EuroRec*
(QA implementations)
Vendors, IT-departments

© copyright ERS 2010

Friday, 15 October 2010

The Healthcare domain will be responsible for the RED parts= the Semantic Interoperability Stack.
The IT-industry will be responsible and active in the bits and bytes domain.

IT-systems will be able to deal with all archetypes/templates the Healthcare Domain produces.
IT-vendors no linger are responsible for the data/information content.

ERS
Electronic Record Services BV

SDO's and EN13606 Consortium

Proposal: IPR, Licensing and the EN13606 Consortium

1. The EN13606 Consortium is founded to own, produce, maintain and publish artefacts derived from the **Open Standards CEN/ISO EN13606** and needed for the implementation of the Two Level Modelling paradigm.
2. Authors of original works -to their discretion- can hand over IP Rights to the EN13606 Consortium.
3. The EN13606 Consortium publishes artefacts, with an IP owned by others or itself, that pertains to the ***human readable parts***, only.
4. The Licensing policy that will be used by the EN13606 Consortium for all artefacts owned, produced, maintained and published will be the **Creative Commons license: CC-BY-SA**.
5. The EN13606 Consortium needs a legal entity that can hold IP Rights and execute the Licensing policy and be able to enter into agreements with SDO's and SSO's.
6. The EN13606 Consortium will establish an **Association** as the legal Public entity.

© copyright ERS 2010

ERS

Electronic Record Services BV

Europe

Digital Agenda

FP7

© copyright ERS 2010

European Digital Agenda

ERS
Electronic Record Services BV

Communication: A Digital Agenda for Europe

1. Lack of investment in networks: ...
2. **Fragmented digital markets**: Europe is still a patchwork of national online markets even though the problems are fixable.
3. Lack of skills: ...
4. **Fragmented answers to societal challenges**: Europe misses out on much of the potential of ICT because it does not give common answers to challenges facing society (such as the ageing population, rising health costs, climate change).
5. Rising cybercrime and low trust:...
6. Insufficient research and innovation efforts: ...
7. **Lack of interoperability**: Europe does not yet reap the maximum benefit from interoperability. Weaknesses in standard-setting, public procurement and coordination prevent digital services and devices used by Europeans from working together as well as they should.

© copyright ERS 2010

European Digital Agenda

ERS
Electronic Record Services BV

Communication:
A Digital Agenda for Europe

ACTIONS

The Commission will work with Member States competent authorities and all interested stakeholders to:

- **Key Action 13**: Undertake **pilot actions** to equip Europeans with **secure online access to their medical health data** by 2015 and to achieve by 2020 widespread deployment of telemedicine services;
- **Key Action 14**: Propose a **recommendation** defining a **minimum common set of patient data** for interoperability of patient records to be accessed or exchanged electronically across Member States by 2012;
- **Other actions**:
  - **Foster EU-wide standards, interoperability testing and certification of eHealth systems** by 2015 through stakeholder dialogue;
  - Reinforce the AmbientAssisted Living (AAL) Joint Programme to allow older people and persons with disabilities to live independently and be active

© copyright ERS 2010

European Commission

ERS
Electronic Record Services BV

Recommendation of the Commission (July 2, 2008):
On on cross-border interoperability of Electronic Health Record systems

Announcement COM(2004) 356 (April 30, 2004) of the Commisssion to the Council:
e-Health - making healthcare better for European citizens: An action plan for a European e-Health Area

Announcement COM(2008) 689 (November 4, 2008) of the Commissie to the European Parliament, The Council:
On telemedicine for the benefit of patients, healthcare systems and society

© copyright ERS 2010

ERS

Electronic Record Services BV

Europe FP7

A Network of Excellence on semantic interoperability and European Health Infostructure

- The aim is to **engage leaders** and **organisations**, including professional organisations, national competence centres, industrial associations and standards development organisations to **define** and **implement** a **research agenda** on the **semantic interoperability** of health information systems and particularly electronic health records.
- **European and international organisations** in the domains of **medical terminology, record architecture**, **medical logic** and **workflow** are expected to participate.
- The work will also include **set up of** the **governance** of a **European virtual organisation for multilingual, multicultural adaptation of international classifications and terminology** and propose means for the **sustainability** and **governance** of **health information info-structure**.

© copyright ERS 2010

ERS

Electronic Record Services BV

Semantic Interoperability Stack

INFORMATION

DOCUMENTATION

Archiving

ERS

Electronic Record Services BV

END