

# Semantic interoperability and general advice

**Nigel Strang**  
**Unit ICT for Health**  
**DG Information Society and Media**  
**European Commission**



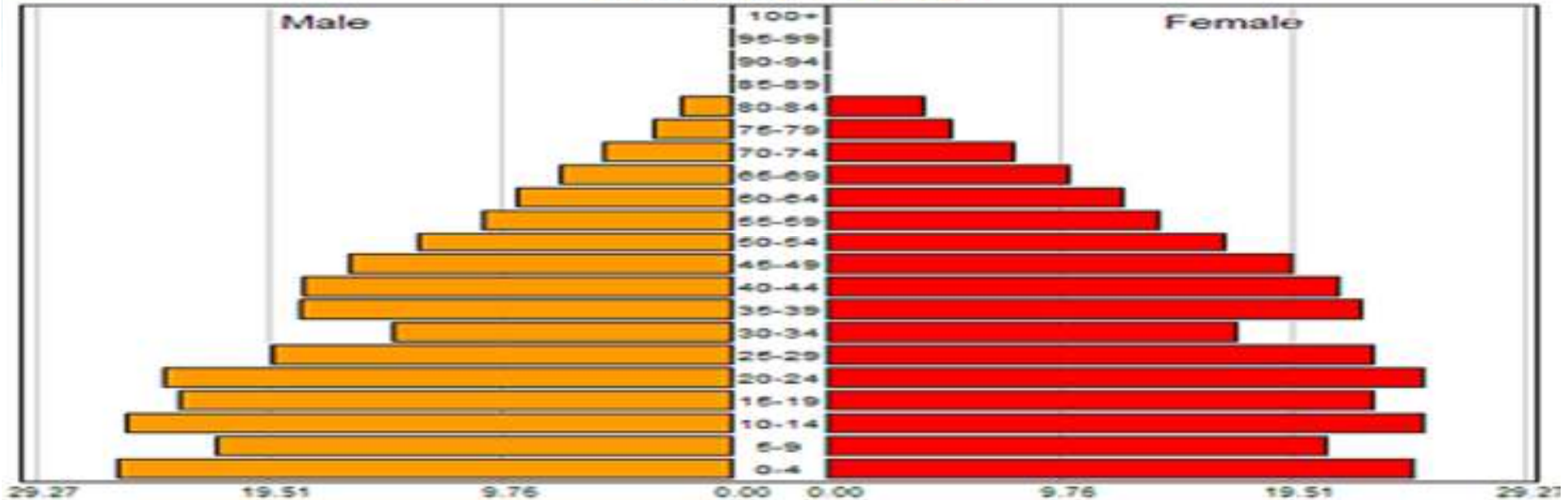
# European Union

- 27 Member States
- *501M inhabitants*
- *GDP 2009 \$16.5 trillion*  
*(Per capita \$33,000)*
- *Everything driven by the member states*



# Good News ! But can we rise to the challenge

## EUROPE: 1950



### Proportion: Elderly (Age 60+)



### Proportion: Working-age Population (Age 20-59)



### Proportion: Children (Age 0-19)



United Nations Population Division, World Population Prospects, 2004  
Revision (Medium Variant, Shared Scaling)



# Why Europe? My mate Pete Medical Tourism: <http://www.oecd.org/dataoecd/51/11/48723982.pdf>

51 years old - Tobacco addict  
Diabetes (ID Type II) since 2002  
Diagnosed 2005  
Insulin pump – controlled  
A little money  
Moriarty  
NHS

**Mobility**

**Establishment**

*Ah Sicily, the beautiful sea*

*Warm weather*

*A healthy happy life for*

*Moriarty*

**Single market**

**QALY**  
**Cost of care**

Long term health insurance (this can probably be solved)  
Getting the 'right' insulin – more difficult  
Continue to work with London based specialist in the context of a team mostly based in Italy  
Using ICT to manage information and communicate

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# What do we mean by semantic interoperability – what is the problem we are trying to solve

Hospital

Professional bodies

Referentials

Home care

General practionners

Partial and variable communication.

Fragmented care.

Patient lock in

Therapists

Multiple,

non communicating,

partial information systems

Nurses

Insurers

Payers

Radiologists

Specialists

Labs

Pharmacies



	GP	Hospital	Home / Nursing	Para- medical	Dental
Suppliers	240	262	87	73	60
Applications	290	320	91	87	61
Applications/Supplier	1,2083	1,2214	1,0460	1,1918	1,0167
International Applications	26	102	8	11	9
Intern./National Applicat.	8,97%	31,88%	8,79%	12,64%	14,75%
Countries Reported	22	24	17	14	15
Average Applic. / Country	13,18	13,33	5,35	6,21	4,07
Average Supplier/Country	10,91	10,92	5,12	5,21	4,00
Average Internat. Applic.	1,18	4,25	0,47	0,79	0,60

Table 2 Totals for the different overviewed EHR markets



# What do we mean by semantic interoperability – what's in the health 'record'

## Encounters

Clinical exam  
Observations  
Hypotheses  
Constants

Orders/  
prescriptions  
Plans

## Diagnosis

Lab results  
Images  
Identities

Some of this should be easy to communicate between heterogeneous systems  
But not all of it is

Signed authenticated official documents

ICT is now being usefully used in medical practice to record and communicate information efficiently  
But not by everybody

## Medication

Prescription  
Dispensation  
Administration

## Observations

Patient  
HCP

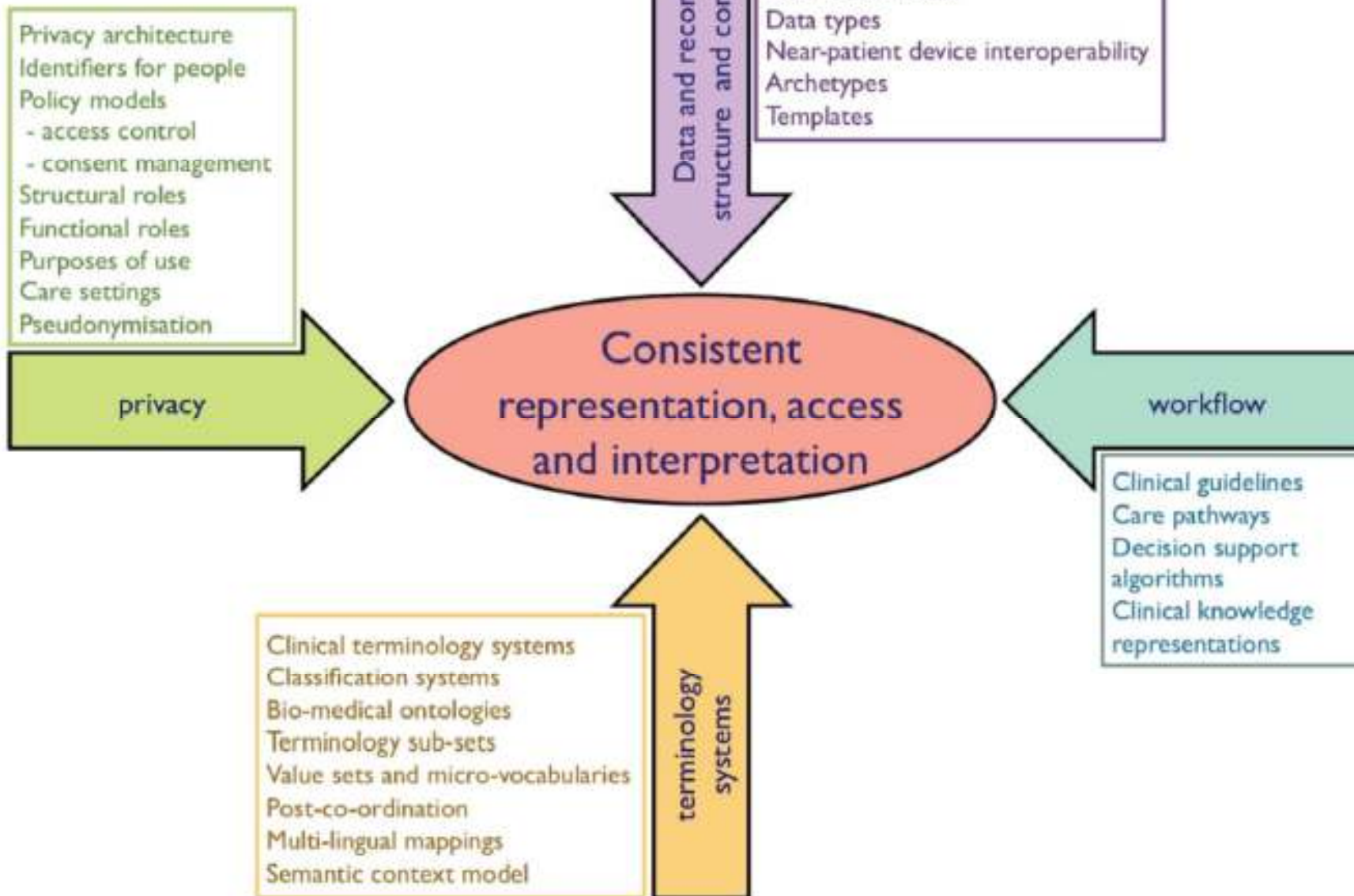
## Events

Death  
Comorbidity

An EHR is not a record, it's a plan with substantiating documentation that records the execution of that plan

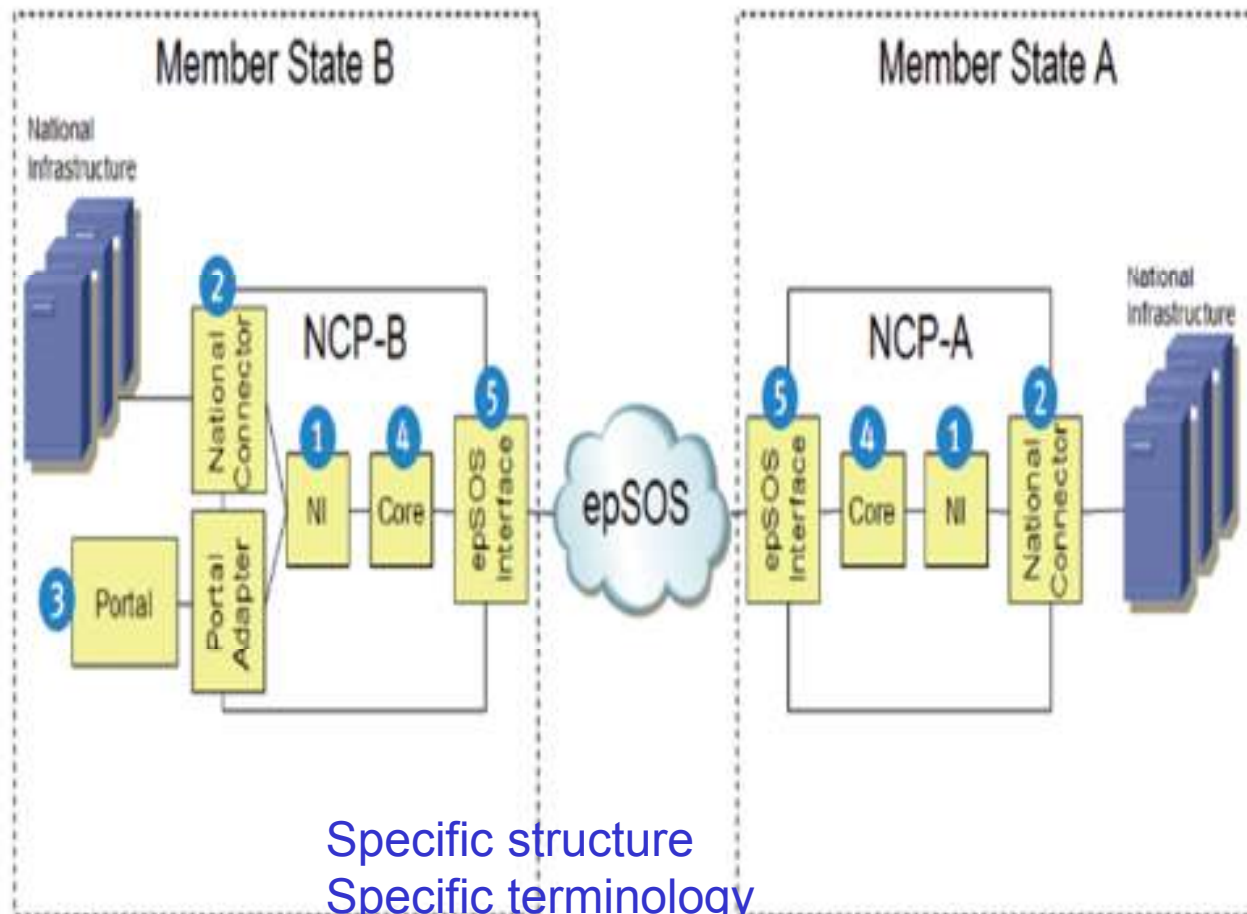


## Semantic resources, artefacts, rules





# EPSOS in brief

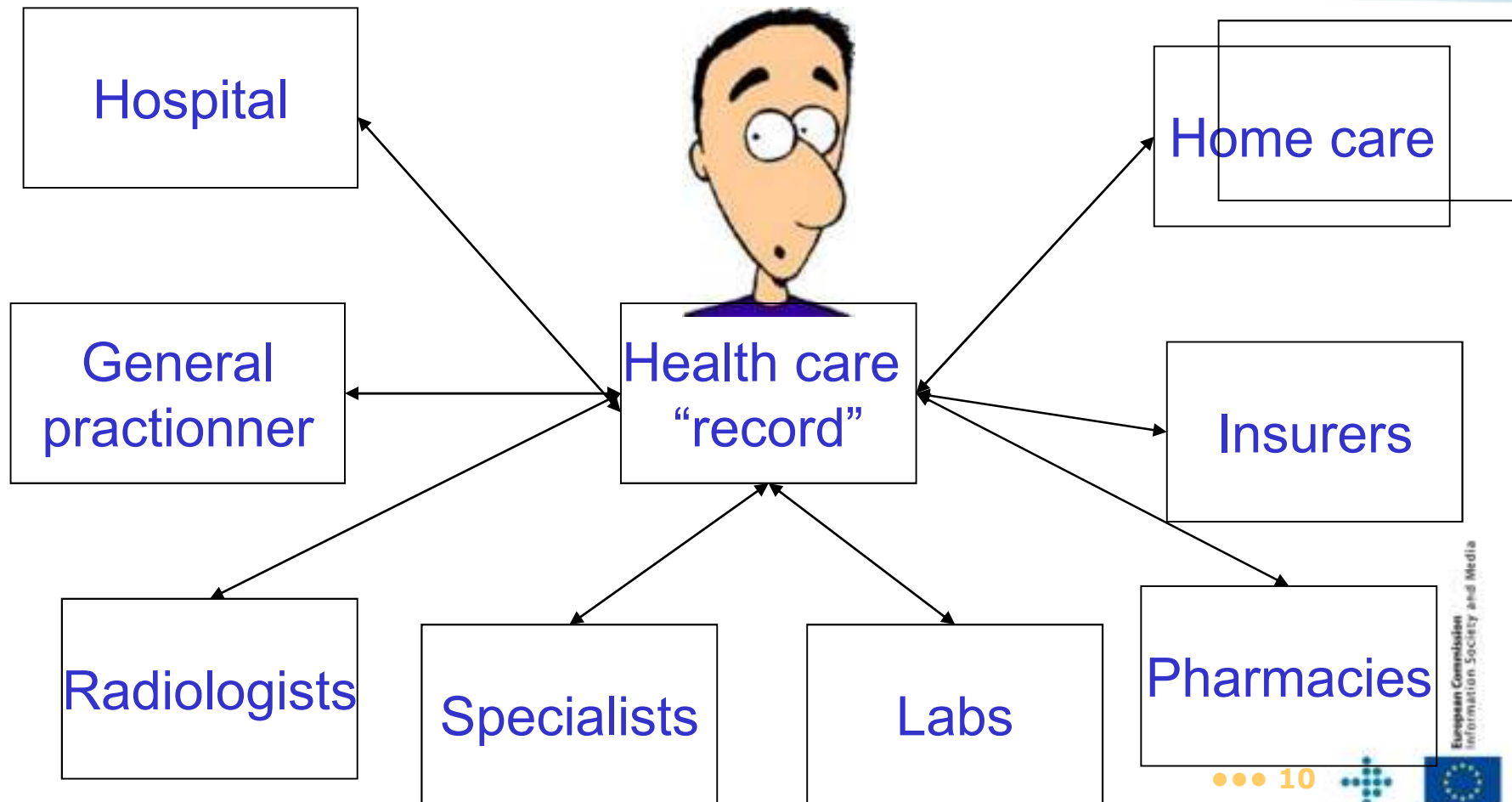


The building blocks are:

- 1 The National Interface
- 2 The National Connector
- 3 The Portal & Portal Adapter
- 4 The Core Elements
- 5 The epSOS Interface

Specific structure  
Specific terminology  
V Special extra architecture  
Health system centred  
Requires patient and clinician ID

# An architecture for (semantic) interoperability – Objective 5.3 Call 7



## A few patient requirements

- Finding the best doctor for me (is that Health 2.0)
- Understanding what my condition means to my life
- Getting support , but being protected from the horror bias
- Help in following the ever more complex care plan
- Medication compliance monitoring
- Organising all that information
- Having ubiquitous officially recognised access to the official authorising documents
- Help in interpreting results
- Access to ongoing clinical research – protocols for me – what is best treatment now?
- Understanding and predicting how 'I' react to my treatment
- Being mobile but getting continuous care
- Immediate access (as fast as paper or film)
- Recognition that self monitoring is accurate and reliable
- Managing payment and reimbursement



# The tower of Babel - Infostructure

## Terminologies (content)

ICD 9 &10

Snomed

Loinc

A plethora of specialised terminologies

## Standards (structures)

HL7 CDA (level 1 – 3)

TC 13606

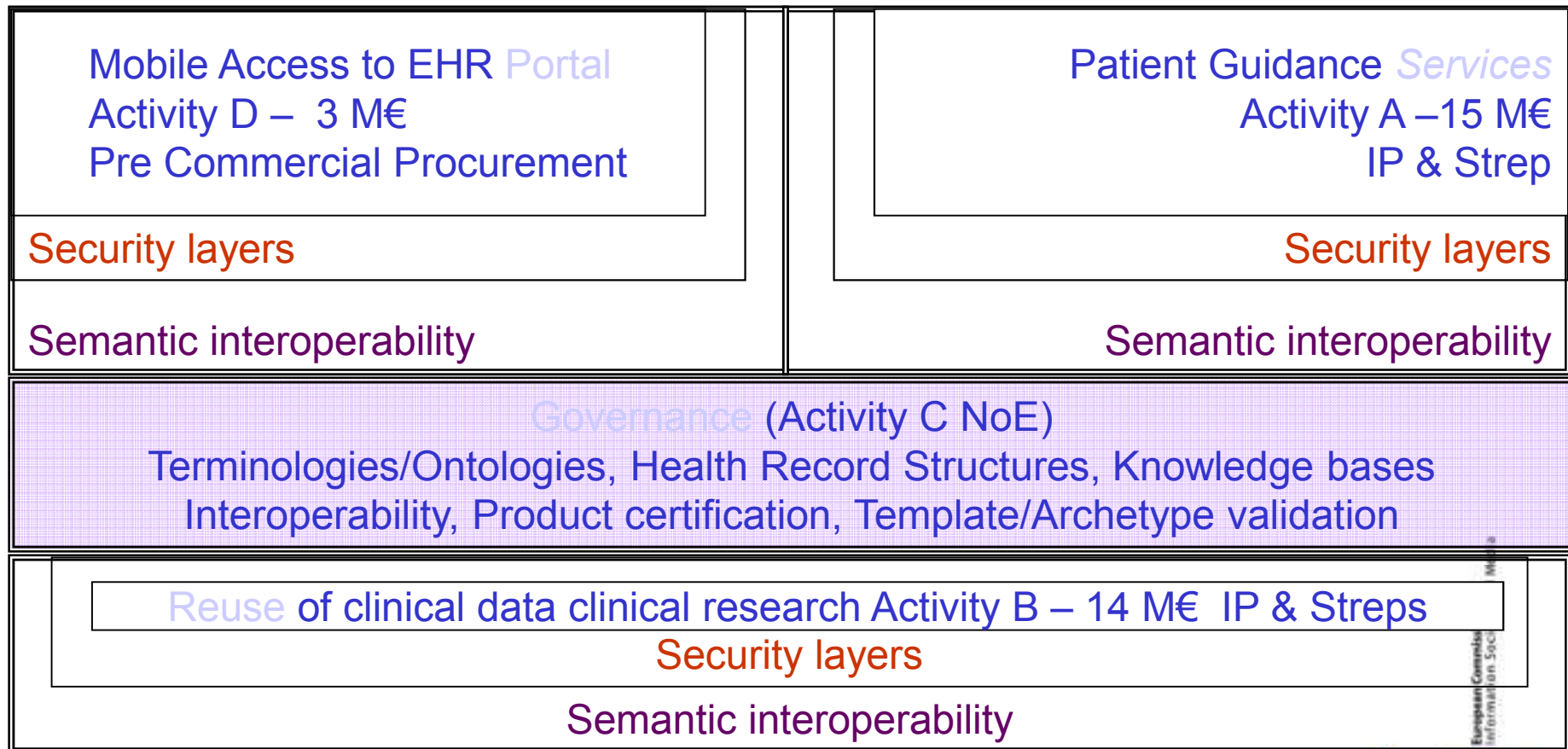
Open EHR

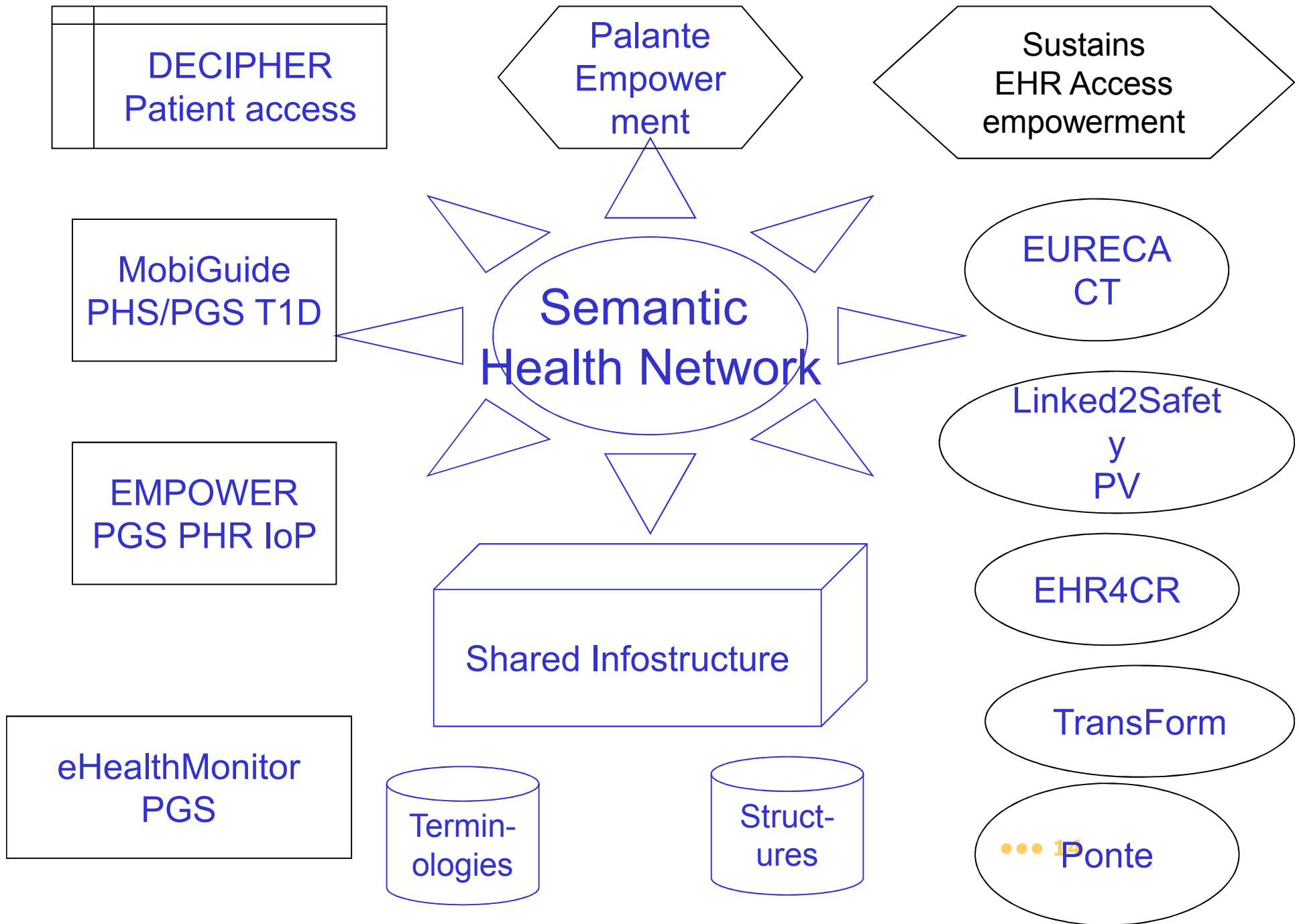
Hundreds of non standards



# FP7 ICT Objective 5.3

## An overview (What we were looking for)





## And now for something completely different

- **FP7 - VPH**
  - Call 9 open Jan 18 – 17 April 2012
  - <http://ec.europa.eu/research/participants/portal/page/cooperation?callIdentifier=FP7-ICT-2011-9>
  - Call 10 & 11 - 2013 –
    - being defined
- **CIP**
  - Call 6
  - [http://ec.europa.eu/information\\_society/activities/ict\\_psp/index\\_en.htm](http://ec.europa.eu/information_society/activities/ict_psp/index_en.htm)



# HORIZON 2020

**The EU Framework Programme For  
Research And Innovation  
(2014-2020)**



HORIZON 2020





## Simplification: summary

- **Single set of** simpler and more coherent participation **rules**.
- New **balance between trust and control**.
- Moving from several **funding rates** for different beneficiaries and activities to just two.
- Replacing the four methods to calculate overhead or "indirect costs" with a **single flat rate**.
- Major simplification under the **forthcoming financial regulation**
- **Successful applicants to get working more quickly**: reduction of average time to grant by 100 days (current average of around 350 days under FP7)

## A word of caution

European research is not to be  
undertaken lightly ---



Thanks

Dipak Kalra: Chime (UCL)

Georges de Moor : Eurorec (Uo Ghent)

Thomas Beale (Ocean informatics)



# To find more on ICT for Health activities / eHealth?

- **Policy and Research:** <http://ec.europa.eu/ehealth>
- **Regular eHealth news:**
  - [http://ec.europa.eu/information\\_society/newsroom/cf/menu.cfm](http://ec.europa.eu/information_society/newsroom/cf/menu.cfm)
  - twitter: @eHealthInfso, facebook: eHealth Infso
- **eHealth conference:** <http://ec.europa.eu/ehealthweek>, [www.ehealthweek.org](http://www.ehealthweek.org)  
*Programme, Satellite meetings, Exhibition, Networking, Social events, etc*  
Twitter, facebook: @eu\_eHealthweek

## **Contact:**

Nigel Strang  
DG Information Society and Media, Unit "ICT for Health"  
[nigel.strang@ec.europa.eu](mailto:nigel.strang@ec.europa.eu)

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