Harmonising eHealth

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Content

This presentation will discuss how standards organizations are working to harmonise and understand the key differentiators when addressing healthcare issues.

Why co-ordinate?

It is now recognised that no one expert constituency has the monopoly of solutions –
so major standards organisations are making a significant effort to harmonise and co-ordinate –
to enable better informed choices by specifiers and implementers.

Rationale

Much effort is being put into the use of IT to reshape healthcare sector:

- harmonising health records across the EU;
- working on plans to determine and combat the threat of global epidemics;
- providing better value for money healthcare globally;
- integrating processes in the push to reduce medical errors.

Outline

eHealth

Health sector characteristics

Health standards organisations

Moves toward co-ordination

- Case study

Lessons for the future

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eHealth – what is it?

World Health Organisation (WHO) definition[1]:

the cost-effective and secure use of information and communications technologies in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research.

[1] http://www.who.int/gb/ebwha/pdf_files/WHA58/WHA58_28-en.pdf

eHealth – are we sure?

Claudia Pagliari, et al -
What Is eHealth (4): A Scoping Exercise to Map the Field [2]:
Review a multiplicity of definitions … and favour those originally offered by Eng[3] and Eysenbach[4] early in the emergence of the field.

[2] http://www.jmir.org/2005/1/e9/
[3] Eng T. The e-Health Landscape – a terrain map of emerging information and communication technologies in health and health care. In: Princeton NJ: The Robert Wood Johnson Foundation; 2001
[4] Eysenbach G. What is e-health?
J Med Internet Res. 2001 Jun 18;3(2) :e20.

eHealth - lesson learned?

There are as many ways of understanding eHealth as there are standards to address the confusion!

Yet we strive for interoperability (definition?) …

… and this is just the start

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Health - Lessons learned

Although there is:

- near total commonality of human anatomy and physiology;
- broad agreement within cultures about how to deal with different pathological conditions;
- some similarity in the ways we deliver healthcare -

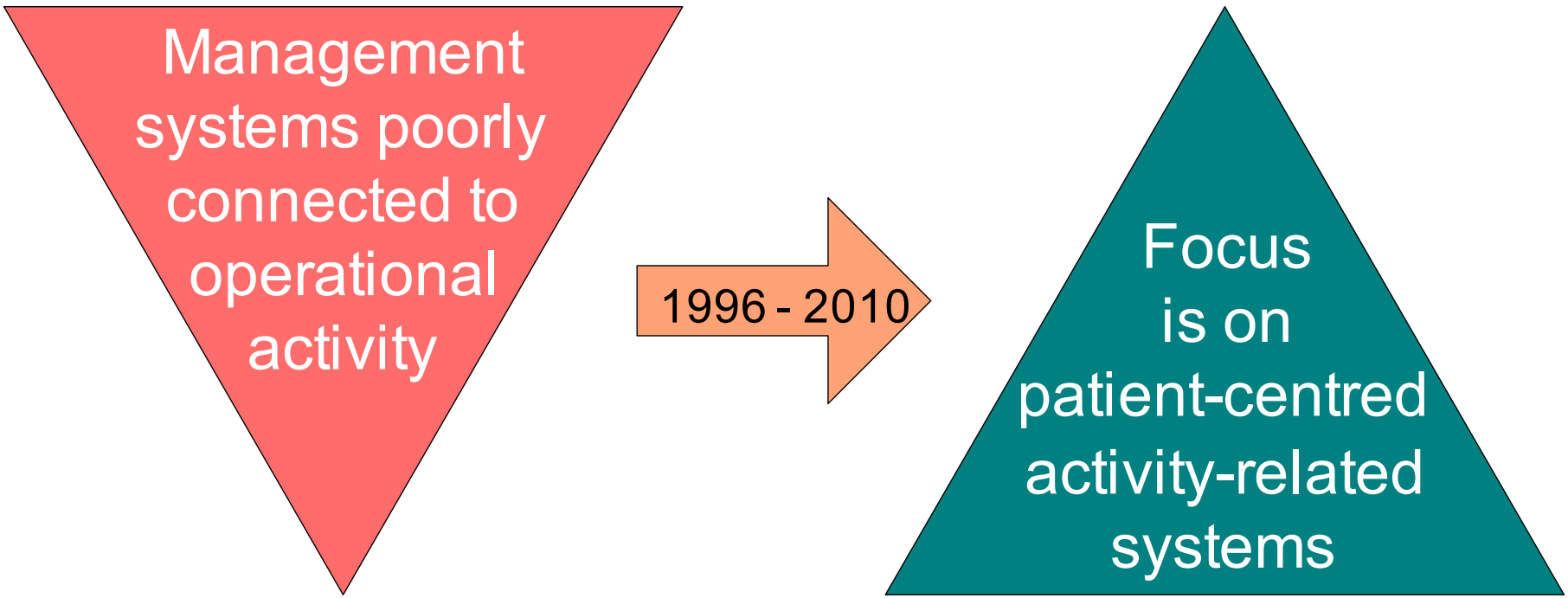
Health - Lessons learned

… there is huge variation in how we can describe and communicate the art of health care.

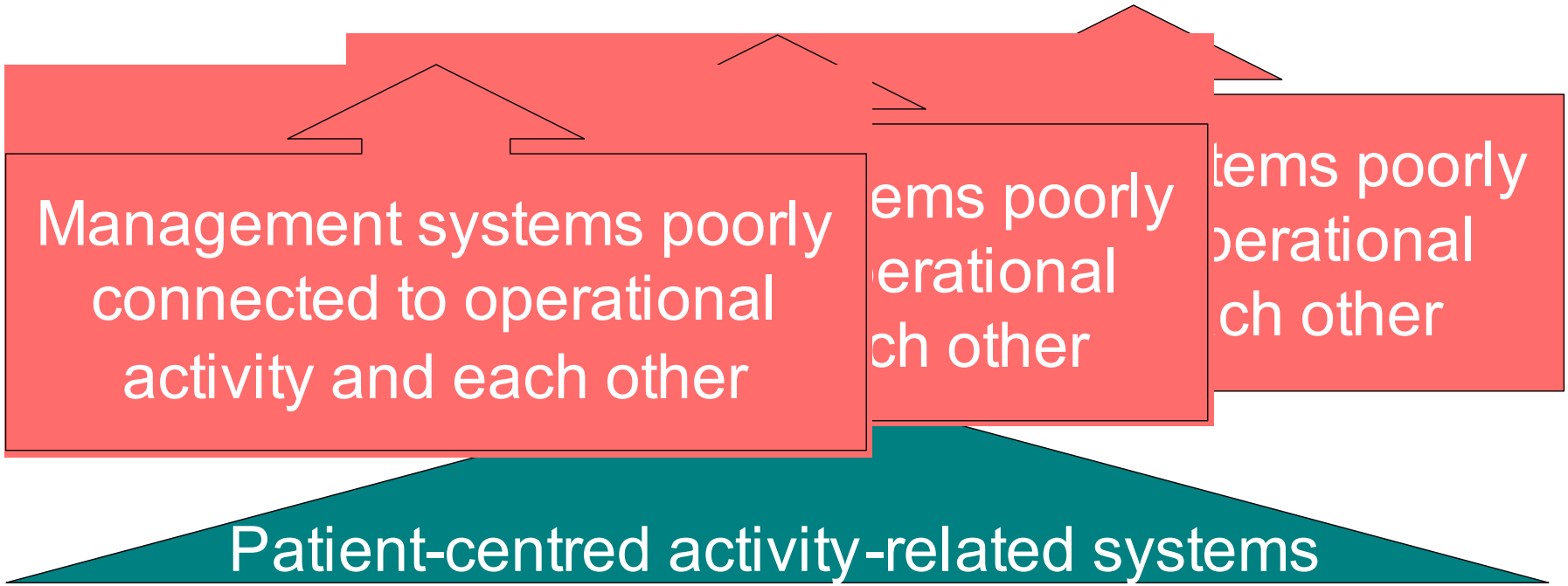
Health – other variations

- Cultural differences are significant – e.g. eastern v. western medicine, roles of medical v, non-medical staff, etc.
- Politico-social differences – socialist/community v. capitalist/individual, rich v. poor, …
- Medico-political cultures are different – co-operative, dictatorial, deferential, enabling, controlling …

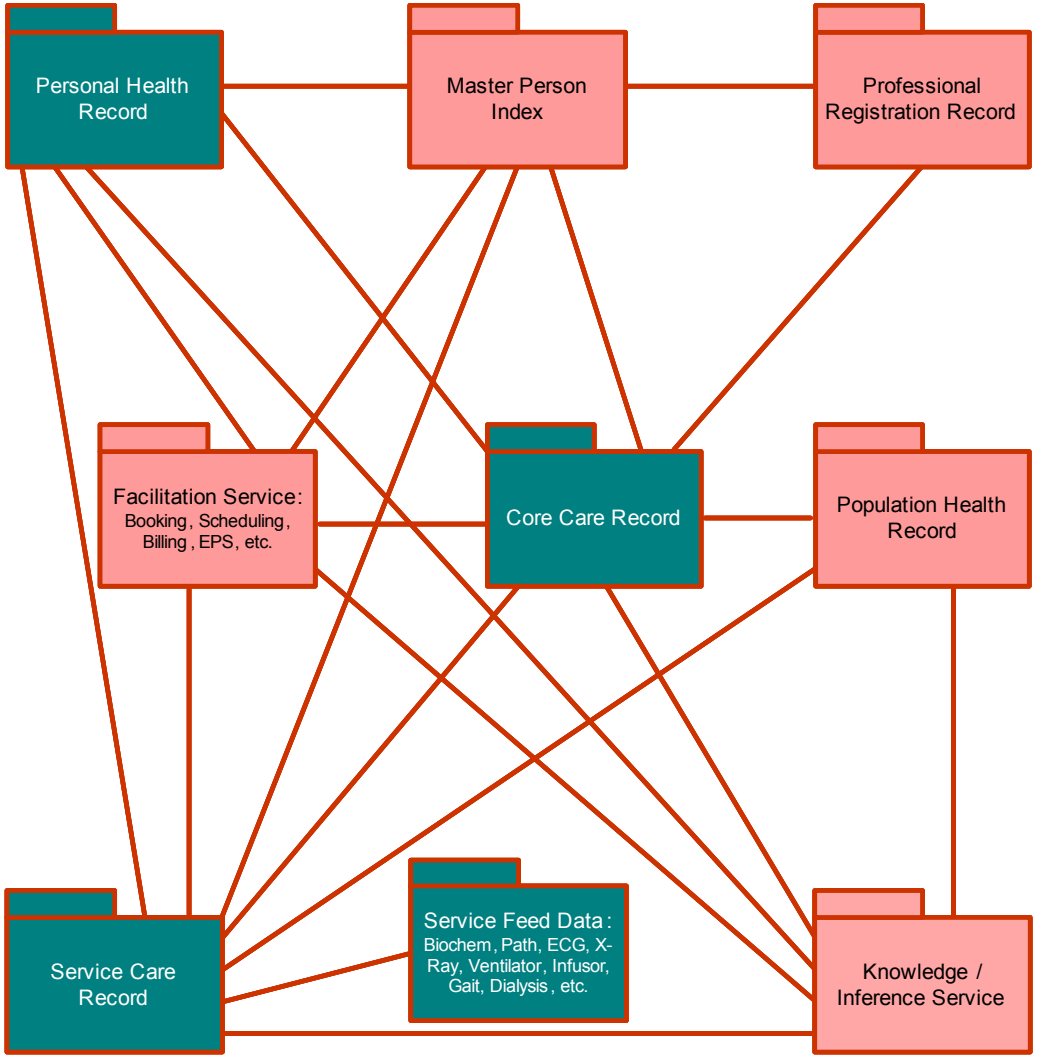
eHealth - Changing the paradigm



eHealth - Challenging the shift

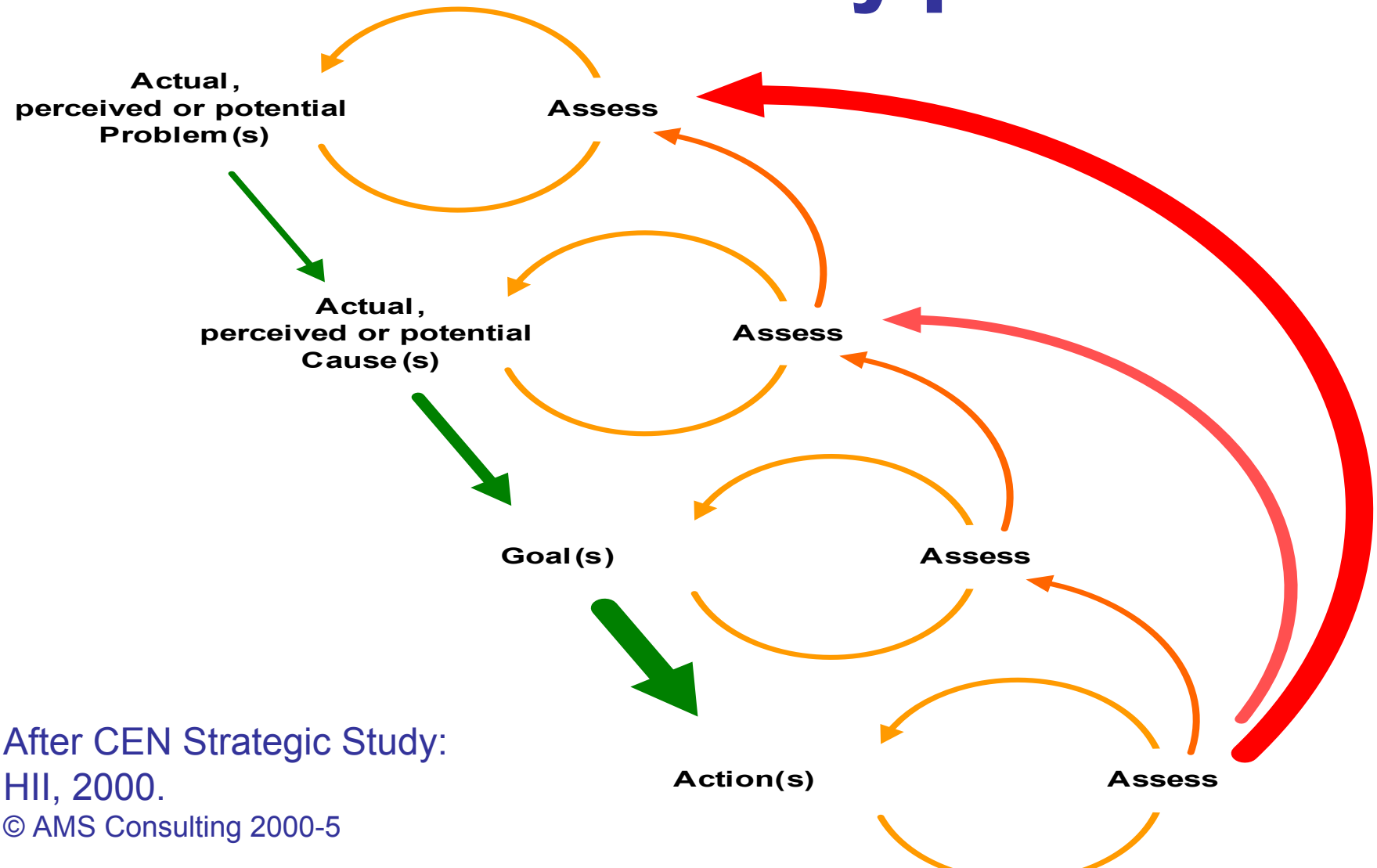


Health information infrastructure



Generic health information infrastructure
- after CEN Strategic Study: HII, 2000;
in ISO TR 20514 term
the Extended EHR.

Health - care delivery process



After CEN Strategic Study: HII, 2000.

Expectations of eHealth

Much effort is being put into the use of information technologies to reshape healthcare sector:

- harmonising medical records across the EU;
- working on plans to determine and combat the threat of global epidemics;
- providing better value for money healthcare globally;
- integrating processes in the push to reduce medical errors.

Summary – in general

Healthcare is constrained by the cultural, political and medical expectations of its environment.
The healthcare process is not a deterministic one.
The health sector is fiercely conservative about working methods.
Health sector is innovative about controlled, i.e. not imposed, use of new technology.

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History

Consensus standards for health IT probably date back to ASTM in the USA.
Major impetus came with the ISO OSI work – notably in IEEE with MEDIX and MIB.
The AIM programme in Europe spurred establishment of CEN TC251.
HL7 evolved out of ASTM and MEDIX.
SNOMED (USA) and UK Clinical Terms emerged at at the same time.

Significant international eHealth standards bodies

HL7: Mostly messaging.
V2, but v3 not yet in widespread use
http://www.hl7.org

CEN TC251: seminal work on modelling and EHR http://www.centc251.org

ISO TC215: internationalisation forum for national SDOs
http://isotc.iso.ch/livelink/livelink?func=ll&objId=529137&objAction=browse&sort=name

Significant international eHealth standards bodies

ASTM: some (notably for labs) in widespread use

http://www.astm.org

CLSI: (formerly NCCLS) laboratory device comms - in significant use

http://www.clsi.org

IEEE1073: (formerly MIB) medical device comms - in significant undeclared use

http://www.ieee1073.org

Significant international eHealth consortia

DICOM: medical imaging, etc.
http://medical.nema.org

SNOMED: terminology and its (NHS) antecedents in widespread (mostly English language) use
http://www.hl7.org

OASIS: metadata, business objects, 'documents', genomics ...
http://www.oasis-open.org

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Co-ordination

Why?

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to enable better informed choices by specifiers and implementers.

Co-ordination

Why?

The range of options for standards confuses specifiers and users.

There is a sector expectation that eHealth standards will, of themselves, and without further research, enable interoperability.

This raises a fundamental question!

Co-ordination

How?

Should standards bodies actively seek to achieve a harmonised portfolio?

Or should they simply let a thousand flowers bloom - and leave the market to chose some sort of mix and match set to achieve interoperability?

Answers on a postcard …

Co-ordination

What we have is a mix of approaches – so the warning "proceed with care" applies.

a. Informal high level co-ordination,
   e.g. through eHSCG or ISO HI Summit;
b. Informal detailed co-ordination,
   e.g. DICOM, HL7 and IEEE1073 through IHE;
c. Formal, high level co-ordination,
   e.g. ISO/TC215 Liaison for HL7 and DICOM;
d. Formal, detailed co-ordination,
   e.g. CEN/TC251, ISO/TC215 and IEEE1073.

Co-ordination – eHSCG

eHealth Standardization Coordination Group" (eHSCG) was proposed by the Workshop on "Standardization in e-Health" (Geneva, 23-25 May 2003).

The overall objective is to promote stronger co-ordination amongst the key players in the e-Health Standardisation area.

Co-ordination – eHSCG

Invitation to join sent from ITU to:

- CEN/TC 251,
- DICOM,
- HL7,
- IEC/TC 62,
- IEEE/1073,
- ISO/TC 215,
- WHO.

All, except IEC, responded, nominated a representative and participate.

OASIS joined subsequently.

Co-ordination – eHSCG

The overall objective is to promote stronger co-ordination amongst the key players in the e-Health Standardisation area.

Core group consists of representatives of SDOs with explicit eHealth work items.

Observer group is open to non-SDO members, contact tsbsg16@ties.itu.int

Co-ordination – eHSCG

The eHSCG enables informal consultation and coordination on voluntary basis and its recommendations are purely advisory.

In particular they do not override any official and legal coordination procedures in place at national and international level.

http://www.who.int/ehscg/about/en/

Co-ordination – IHE

Integrating the Healthcare Enterprise

"IHE is an initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information.

IHE promotes the coordinated use of established standards such as DICOM and HL7 to address specific clinical needs in support of optimal patient care."

http://www.ihe.net/

Co-ordination – IHE

HL7 - DICOM Integration profiles:

- Scheduled Workflow
- Patient Information Reconciliation
- Consistent Presentation of Images
- Presentation of Grouped Procedures (PGP)
- Access to Radiology Information
- Key Image Note
- Simple Image and Numeric Report
- Post-Processing Workflow (PWF)
- Charge Posting
- Basic Security (SEC)

Co-ordination – ISO

Developers/publishers can introduce existing standards through three mechanisms:

- Fast track (from NSBs);
- Partner programme (from SDOs);
- Liaison (from consortia).

CEN TC251, HL7 and DICOM have respectively used these methods.

Co-ordination – ISO

The Fast Track and Liaison arrangements simply permit a completed National or CEN Standard, or a completed Consortium Specification, to be balloted within ISO.

No attempt at further detailed consensus forming at the ISO level – just a yes / no ballot.

Co-ordination – ISO

The Partner programme has the effect of formally engaging Partner SDO to jointly develop and publish joint-labelled standards.

There is, under the working methods we (ISO TC215, IEEE1073 and CEN TC251) developed, substantial detailed consensus forming at the ISO level.

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Co-operation Case study

- The EN ISO IEEE joint labelling of the 11073 series is the result of 10 years of informal co-operation between the respective IEEE and CEN groups.
- With the establishment of ISO/TC215 it was possible to formalise the already international nature of the work so the ISO IEEE Pilot (now Partner) Process was established.

Co-operation Case study

The EN ISO IEEE 11073 series of standards relates to:

Health informatics – Point-of-care medical device communication

It covers everything from simple digital thermometers and glucose monitors to complex intensive care and dialysis systems for use in all environments from ambulant and home to hospital.

Co-operation Case study

Formally –

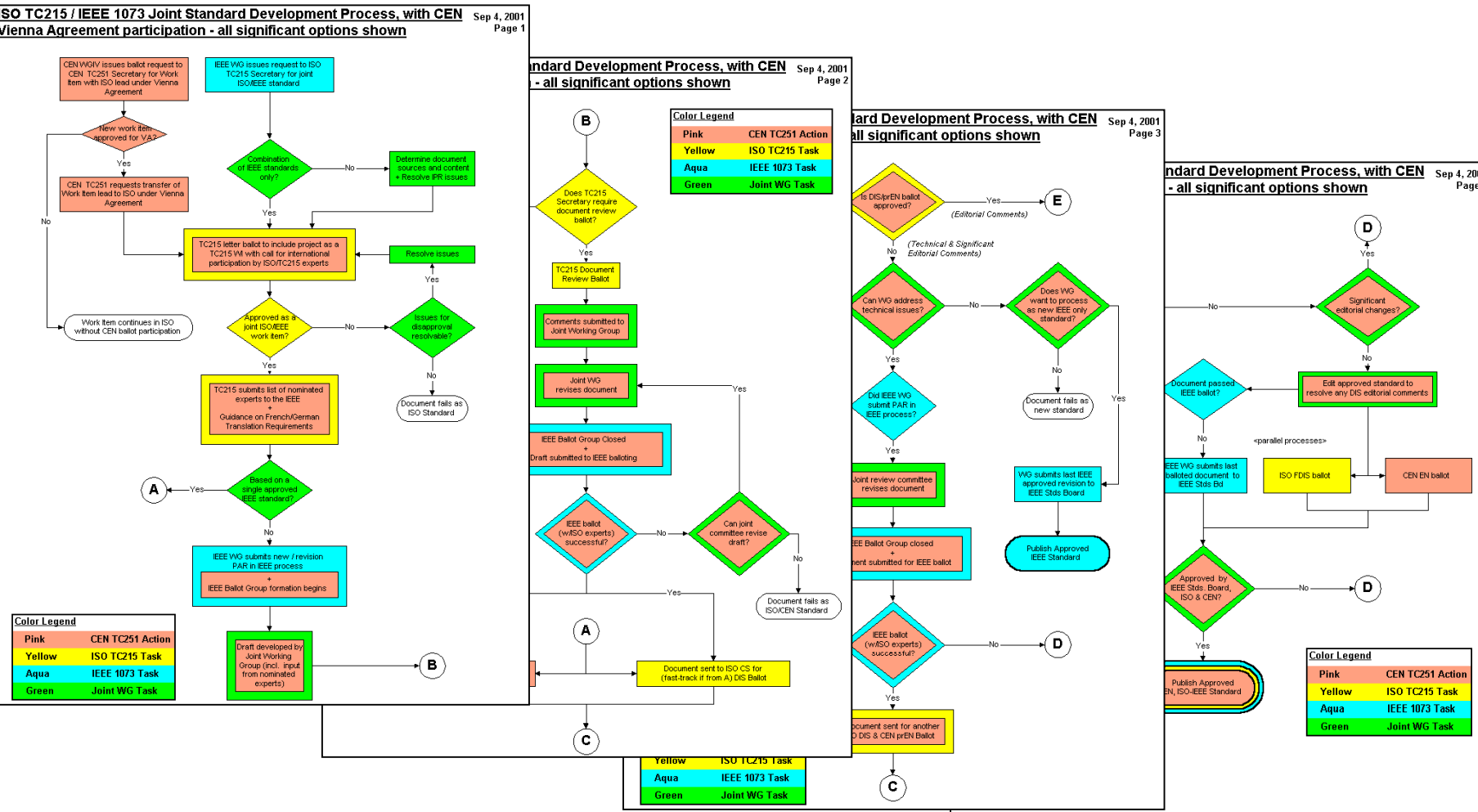
Initially the Partner SDO process focussed on the IPR and business issues of publication.

This was supplemented by participant input to produce an agreed way of working that ensures the following

Co-operation Case study

- IEEE takes formal lead in the ballot and publication process;
- Open scrutiny of evolving proposals by all CEN, ISO and IEEE experts – regardless of IEEE membership status;
- CEN adopts ISO edition by Vienna Agreement;
- All bodies have the right to produce complementary documents, and reject adoption of documents, in their ambit.

Co-operation Case study



Co-operation Case study

Benefits?

- A single, harmonised, set of full consensus standards applicable globally and with special status for public procurements in the EU.
- Multi-lingual support of content representation built in from (nearly) the beginning.

Co-operation Case study

Informally –

Have worked within the context of HL7 (which has provided opportunity to work with DICOM and CLSI) to ensure that the niche area of device communications can be integrated to the enterprise level of healthcare.

Co-operation Case study

11073 terms are now payload in HL7 messages both for clinical use, and for such things as regulatory reporting to the US FDA.

In the last month, that relationship has been formalised by establishment of an HL7 Devices Special Interest Group – and a related IHE SIG to produce profiles for Devices.

Co-operation Case study

Any gaps?

Yes – of course.

SNOMED was designed as a terminological system to describe pathology, then procedures, now medicine. This means that it addresses some areas, such as devices and related data, as fringe issues.

Co-operation Case study

The 11073 group is now, with international encouragement by anaesthetists and cardiologists, actively working on ways of harmonising SNOMED with x73, by seeking a clearly agreed join, or (less good) map, at the point where each runs out of scope or competence.

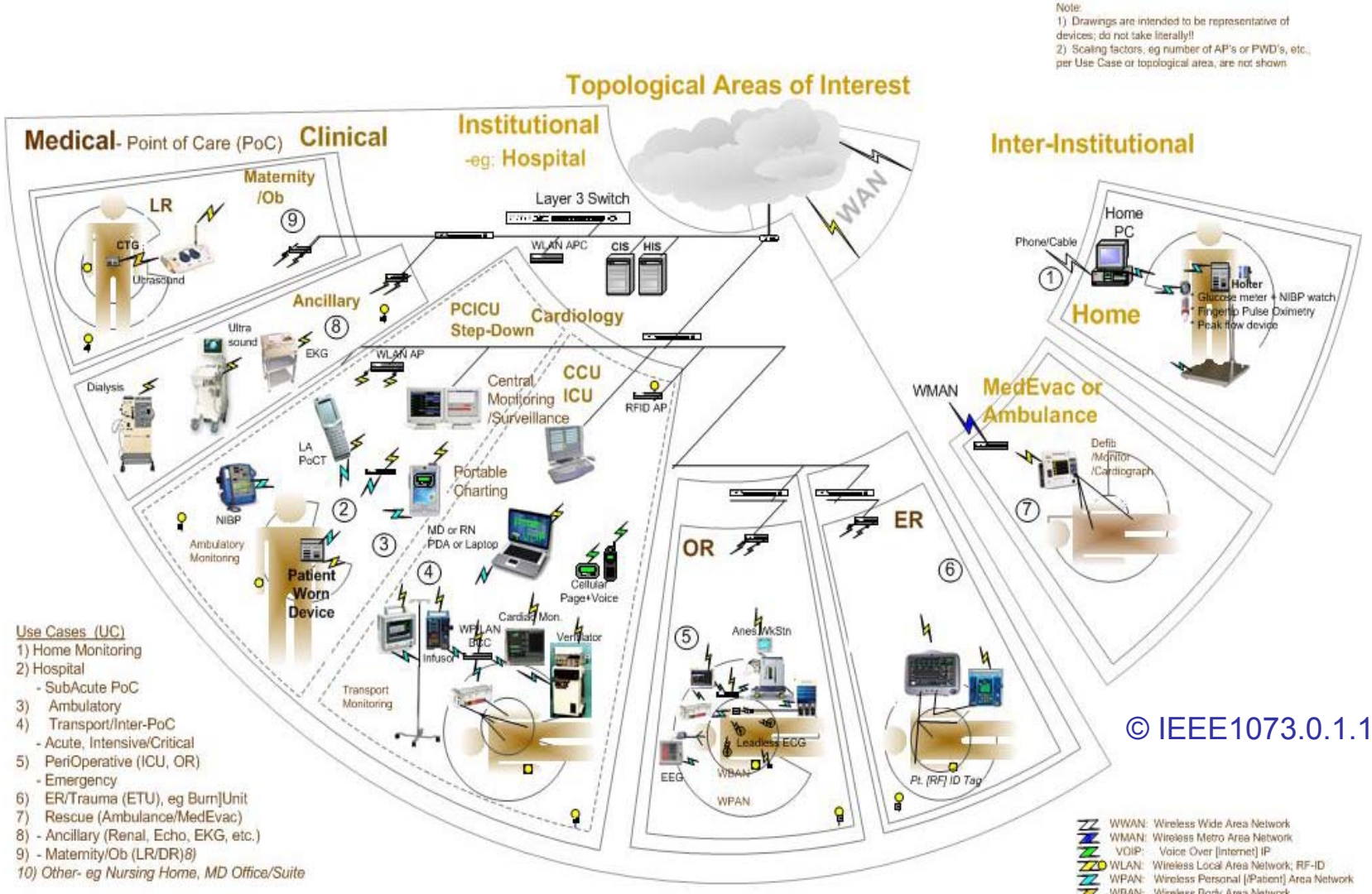
Co-operation Case study

At the other end of the OSI stack there is enormous enthusiasm for freeing patients from the tyranny of cables.

We are working through the issues on this but have some challenges.

The environmental space, and rules, are varied –

Co-operation Case study



Co-operation Case study

As an example –

Would you want an alert that you are suffering an adverse cardiac event to be regarded as subsidiary to your colleague telling his wife that he's stopping at the pub on his way home?

That's the way it is at present –

Voice Rules Data over IP.

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Lessons for the future?

1. Look around – and keep looking around!
2. Recognise strengths – and admit weaknesses that others address well.
3. Explore ways of working together to mutual benefit; if there's not a win-win then there'll be at least one loser.
4. Stay fired up! But be honest …

Oasis in eHealth?

Already involved – in HL7, ISO/TC215 ...

Take some time to learn about the eHealth space and begin to learn the detail about what the various existing standards bodies are doing in it.

Know where your strengths and interests are – and what you can both contribute, and adopt.

Co-operate first, harmonise second.

Thank you.
Questions?

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