



SmartPersonalHealth

Interoperability of connected Personal Health Systems (PHS) with the wider eHealth domain –
Promoting the smart delivery of health services

Support Action FP7-248419

Enabling Integrated Care *Procuring personal health systems*

Workshop Report

17 June 2010

ECH Campus Leadership Summit, Belfast



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1 Agenda

Enabling integrated care: Procuring personal health systems

An interactive training workshop for current and future procurers of interoperable personal health solutions

Thursday, 17 June 2010, 8:30 – 13:00, Europa Hotel Room Grand 2, 1st floor
Belfast, Northern Ireland

Hosted by:

Continua Health Alliance, IHE Europe, ETSI

and

European Connected Health Campus

in the framework of the SmartPersonalHealth project funded under European Commission's FP7

9.00-9.10 Welcome

9.10-9.45 Interoperability 101: an overview of interoperability issues for procurers

Bridget Moorman, Industry Advisory Board for the Renewing Health project
Q&A

9.45-10.45 Presentations

- **Procuring personal health solutions: Reflections on the NHS experience**
George Macginnis, NHS Connecting for Health, UK
- **Interoperability standards and the impact on procurement**
Charles Parisot, IHE Europe

10.45-11.00 Coffee break

11.00-11.45 Discussion with participants on challenges and successful approaches to hardware and equipment issues:

- Legacy equipment
- Existing contracts and vendor relationships
- Technical issues, standards / the role of interoperability
- Other

11.45-12.30 Discussion with participants on challenges and successful approaches to administrative issues:

- Legal issues (regulatory, competition law)
- Administration (multivendor environment)
- Integration of PHS with other eHealth systems and services
- Other

12.30-13.00 Report from breakouts, lunch

13.00 Closing

2 Goals and objectives

2.1 Introduction to SmartPersonalHealth and the workshop on procurement

Considering that we have been struggling for more than 40 years to mainstream eHealth solutions – which denote all applications of ICT towards supporting and interconnecting health service processes and health system actors, both at the local level and remotely –, then the diffusion achieved so far globally is more than meagre. A key barrier has been and continues to be interoperability, the ability of systems to exchange, share and integrate seamlessly patient and other information, and professionals to communicate electronically in the same parlance equally understood by all, even across language barriers.

The overall benefits of eHealth solutions can only be realised if all stakeholders involved fully understand and support this fundamental importance of interoperability of eHealth infrastructures and applications. Awareness and understanding are key initial steps towards requiring and implementing such concepts when establishing national, regional or individual solutions and applications. These are the key considerations driving the SmartPersonalHealth activities. This Support Action promotes interoperability among Personal Health Systems (PHS) and between eHealth systems – in the landscape of continuous care, across multilingual and multi-cultural environments in Europe.

Key activities include three thematically focused regional stakeholder workshops, one central pan-European PHS Interoperability Conference, and further promotion, networking and dialogue. Finally, a concise report on key outcomes from all promotional activities and stakeholder dialogues will be compiled, highlighting the current status, concerns, barriers and incentives to accelerate the development and adoption of interoperable PHS systems. Further recommendations for interoperability promotion will be proposed to the European Commission, national governments, stakeholder groups and industry.

The SmartPersonalHealth Workshop entitled *Enabling Integrated Care: Procuring Personal Health Systems* focussed thematically on procurement and took place Thursday, 17 June 2010, at the ECH Campus Leadership Summit in Belfast, Northern Ireland. The workshop gathered a number of experts and practitioners from the areas of personal health systems and procurement.

2.2 Conceptual background

This first section introduces the concepts of the European Commission co-funded support action Smart-PersonalHealth and the objectives of this workshop - the second in a series of events, with the aim to promote the interoperability among Personal Health Systems (PHS) and between PHS and other eHealth systems.

The goal of the *SmartPersonalHealth* initiative is to raise awareness of

1. the need for and benefits of interoperable eHealth systems, in particular personal health systems (PHS), and
2. the existence and scope of various European and international interoperability initiatives, guidelines and standards,
3. by engaging, educating and leveraging the competencies and roles of a multiplicity of stake-holders collectively (European SME's, systems integrators, eHealth industry at large; current and future potential procurers of PHS and other eHealth systems in the EU; health-care providers and patients)
4. to positively influence the deployment of interoperable PHS and other eHealth systems.

Initial concepts, like those presented here, will be discussed with stakeholder representatives and the outcomes of three workshops will feed into policy recommendations to be presented at a conference at the end of the project.

The workshop on procurement issues will provide an interactive training for buyers of personal health systems and will address key questions such as:

- What does interoperability of personal health systems mean? The workshop will walk through some simple interfaces and technical issues.
- Why should I care? Procurers through their buying decisions have power to direct what the market develops and offers for purchase.
- What can I do? Tenders might not mandate specific standards or protocols but they should make reference to them to ensure future interoperability is more easily attained.

Three speakers from regional authorities, healthcare providers and vendors shared their experience in buying solutions from a major public service, hospital and regional perspective and presented an overview of recent developments on standards and their impact on procurement. Issues like framework contracts, negotiated procedures, standards compliance, competition, EU Public Procurement Directives, but also practical approaches to technical – hardware and equipment issues such as legacy equipment, administrative issues – existing contracts and vendor relationships will be elaborated upon. Recommendations on what national and European regulators as well as industry can and should do to help advance integrated and personalised patient care will be included in the final outcome of the project.

2.3 Realising the benefits of eHealth – the need for interoperability

The ultimate goal of promoting interoperability in general, and here for personal health systems in particular, is to contribute to comprehensive, easy and collaborative access to and sharing of a patient's health data for all authorised health professionals, family carers and ultimately the patient itself. Thus they will gain managed access to essential health information about patients, subject to the patients' consent.

2.3.1 Personal Health Systems as integral part of eHealth

The European Commission co-funded project *PHS2020* has come to a consensual vision of future PHS during its work with various stakeholders. This implies a holistic health system view and is guided by a business value chain framework:

Personal Health Systems (PHS) assist in the seamless provision of quality controlled, and personalised health services to individuals regardless of location. They consist of:

- Ambient and/or body devices (wearable, portable or implantable), which acquire, monitor and communicate physiological parameters and other health related context data of an individual (e.g., vital body signs, biochemical markers, activity, emotional and social state, environment).
- Intelligent processing of the acquired information and coupling of it with expert biomedical knowledge to derive important new insights about an individual's health status.
- Active feedback based on such new insights, either from health professionals or directly from the system to the individuals, assisting in diagnosis, treatment, rehabilitation and social care as well as in disease prevention and lifestyle management.

Personal health systems can play a central role in ICT supported solutions for chronic disease management and integrated care. With the central component health monitoring devices, they form an integral part of telehealth. *Telehealth*, using ICT-enabled applications to provide services related to health and care at a distance, is an area of eHealth which can be expected to become a major component of future *integrated care information systems (ICIS)*. Policy makers around the globe have vested high expectations in telehealth for quite some time now. It has been expected that telehealth services will help European health systems to better cope with growing demands arising from an ageing population, increasing consumerism, and limited supply of funding.

In broad terms, *health system interoperability* is the ability, facilitated by ICT applications and systems,

- To exchange, understand and act on citizens/patients and other health-related information/knowledge
- Among organisationally, linguistically and/or culturally disparate health professionals, patients and other actors and organisations
- Within and across health system jurisdictions and administrations in a collaborative manner.

2.3.2 The ecosystem of connected health: seamless exchange of data

In a *generic scenario* we encounter two broad segments of interoperability:

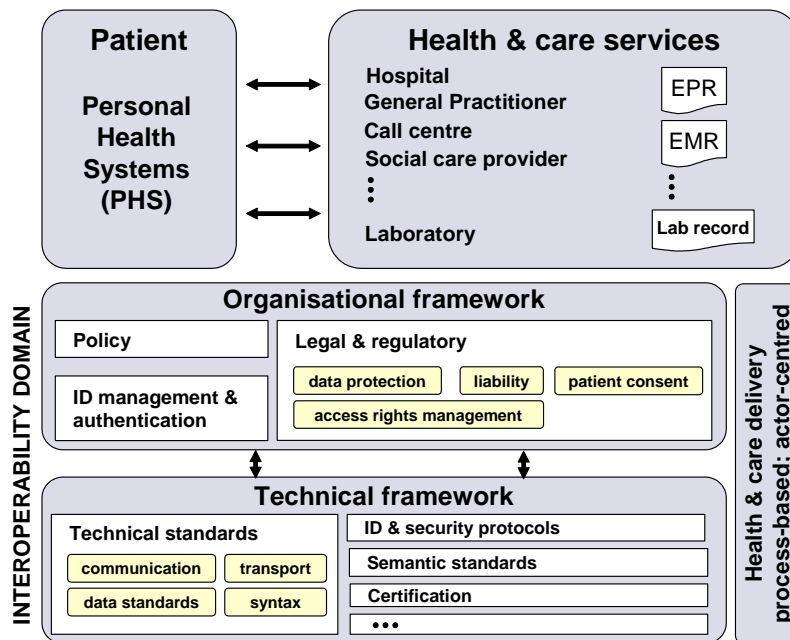
1. PHS devices to data hub
2. Data hub to health service provider system, e.g. EPR, EMR, a hospital information system (HIS) or a GP patient system.

As can be deduced from *Figure 1*, already this rather simple scenario introduces a vast number of specific interoperability issues which, depending on the maturity of

- the devices, hubs and provider information systems used
- the local, regional or national eHealth infrastructure components and services available

need an integrated approach by all concerned in order to become solved and maintained in a sustained manner for many years to come. It needs first of all awareness raising - what this initiative is all about - but next it needs agreement on the policies to be pursued, the measures to be taken, and funding and organisational structures like CONTINUA to become successful in the longer term.

Figure 1: Challenges of PHS interoperability



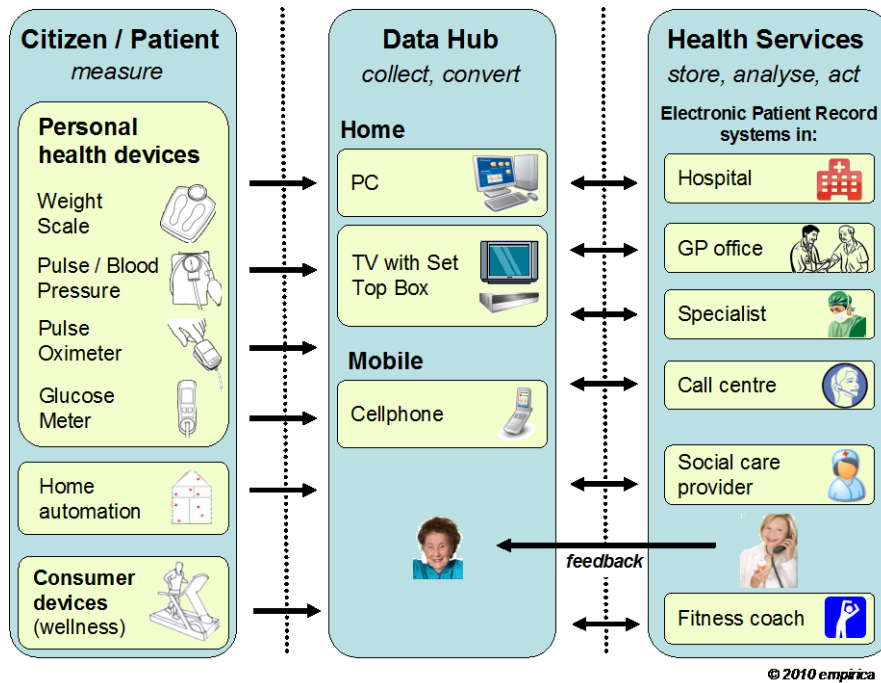
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As illustrated by *Figure 2*, and to reduce the overall complexity of interoperability issues, we differentiate only among *three major areas* of data measurement, collection, transfer and analysis:

1. Applying PHS devices for measurement of vital data and person activities
2. Collecting and converting these data via a data hub which may be in the home or mobile

3. Analysing the data provided and acting upon the results by health service providers

Figure 2: Examples for data exchange in PHS-based health and care services



When considering the major building blocks as illustrated in *Figure 1*, a wide variety of scenarios and combinations into concrete, more detailed use cases can be imagined. When introducing additional actors like the patient/person himself, informal carers, community nurses, case management, a specialised remote management organisation or a pharmacist, the integration and service process becomes more complex. And the respective concrete organisational and process structure will furthermore heavily depend on the peculiarities of the local, regional and national healthcare and social care systems. Therefore, to allow for an initial approach to key interoperability issues, we will abstract from these further details and focus at the generic level. As a good example of cooperation, we propose to consider measurement devices used in telehealth systems.

Interoperability between device and data hub: In order to support a wide range of diseases, it is necessary for such a telehealth system to work with a large variety of measurement devices, such as blood pressure monitors, weighing scales, glucose meters, pulse oximeters, ECG monitors, peak flow meters, etc. For each of these measurement device types there are a number of companies making them, but none of the companies manufactures all of these devices. So a telehealth system vendor will need to work with different suppliers to provide a complete set of measurement devices to its customers.

Today, each of these devices from each of these vendors communicates in a different way. Even if some devices use the same transport mechanism, such as Bluetooth, USB, Infrared or a serial cable, each of them will still use a different way of transmitting the data over that transport mechanism. It becomes clear very quickly that it is a daunting task for a telehealth system vendor to make its system work with all of these different devices from different vendors.

Interoperability between data hub and health service provider ICT application: A complementary need for cooperation emerges at the interface of the hub transferring personal telehealth data into electronic patient or medical records (EPR/EMR). Often the supplier of a telehealth system is not the supplier of the EPR or EMR system that is used to store, integrate, analyse and display health data about the patient. Since there were no proper standards in

place yet to transfer health data from a telehealth system into such a health service provider system, the telehealth vendor had to work with all major EPR or EMR system providers to develop custom interfaces for transferring this data. Again a huge amount of work that created a significant barrier for proper integration of telehealth data into other systems and thus limiting the potential health benefits and efficiency improvements that personal telehealth could offer.

2.3.3 Key challenges for healthcare professionals and ICT suppliers

Interoperable technologies will offer patients and their supporting carers/family timely, convenient access to personal health information and decision support and enable providers to track the patient's condition. *SmartPersonalHealth* is identifying key issues and challenges for physicians and all other care professionals and staff to make better informed decisions with the help of interoperable PHS and other eHealth systems. Special emphasis is placed on *healthcare provision needs* which can be supported by PHS devices and associated interoperability and integration into other health information systems, in order to improve patient care and reduce resource consumptions. *SmartPersonalHealth* is addressing interoperability issues that need to be solved to indeed achieve these objectives.

In terms of interoperability levels, the issues to tackle with clinicians span a wide range of organisational, legal and semantic challenges. At the *organisational level* for instance, the integration of PHS into clinical workflow implies also organising processes for reaction / acting on data and signals from PHS such as alerts in cases of, e.g., a decompensation of a patient or other emergencies. This means that detailed guidelines need to be prepared for action and follow up, protocols for physicians, nurses or other health professionals as well as call centres, patients and carers need to be designed and all actors involved must be well informed and trained.

The full integration of PHS into daily routine and the seamless exchange of patient data presume an underlying ICT infrastructure with regulated access, identity management (IDM), authentication, security, audit trail and further rules, i.e. a number of *technical issues* need to be solved. This will enable also consistent and transparent data collection and analysis for, e.g., outcome measurements which can eventually provide the basis for outcome oriented reimbursement. Furthermore, *semantic* issues need to be addressed in relation to a specific domain, for example telehealth and diabetes management, in languages to be understood both by professionals and by lay persons. Capabilities of integrated PHS-EHR solutions for providing decision support or data analysis for population health is another big challenge to address. Some specific interoperability challenges for telehealth ICT suppliers have been outlined in the previous section.

2.3.4 Challenges for procurers

Procurers have to consider requirements of and benefits for a wide range of stakeholders: patients, clinicians, administration, insurance companies and authorities. The needs of these stakeholders are complex and can differ significantly. As mentioned above, personal health systems can play a central role in ICT supported solutions for chronic disease management and integrated care. ICT technologies can offer patients and their carers timely, convenient access to personal health information and decision support and can enable providers to track the patient's condition. To do so, PHS have to be interoperable with other systems and fully integrated into services and daily routine in order to be accepted, largely adopted and deliver value to patients and health professionals. All this poses a variety of challenges and makes a procurement process very complex.

The workshop aimed at addressing these and various other challenges, identifying key issues and good practice in procurement as well as discussing recommendations for changing common procurement procedures.

3 Workshop presentations

The chair of the workshop, **Petra Wilson**, Chair of the EU Policy Group with the Continua Health Alliance and director in the Healthcare team of Cisco's Internet Business Solutions Group, welcomed the participants and introduced the objectives of the SmartPersonalHealth project and of procurement in particular, being the thematic focus of the workshop.

3.1 Interoperability 101: an overview of interoperability issues for procurers

The first speaker, **Bridget Moorman**, from the Industry Advisory Board for the *Renewing Health* project gave an introductory session on “Interoperability 101: an overview of interoperability issues for procurers”, in order to stress the training and orientation element behind the workshop. The overview of definitions and the relevance of interoperability was particularly addressed to procurers who might have limited familiarity with technical interoperability issues.

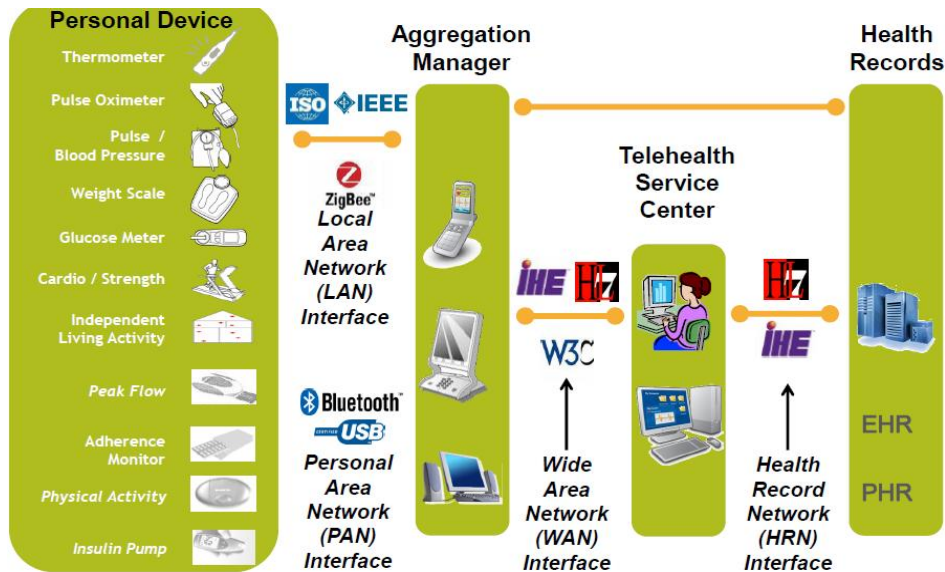
With the definition of interoperability being “the ability of a system or a product to work with other systems or products without special effort on the part of the customer”, there are two approaches to achieve such “working systems”:

- By adhering to published interface standards, and
- By making use of a “broker” of services that can convert one product's interface into another product's interface "on the fly".

What does interoperability mean for procurers? It is all about meeting the needs of your customers – patients, clinicians, administration, insurance companies, or governments. It also means to allow for ‘best of breed’ acquisition and ultimately, to drive market development towards *standards based interoperability*. Thereby, the goal is to drive down long-term costs, to lessen infrastructure replacement costs and allow for heterogeneous environments to inter-communicate. After outlining standards at interfaces, describing the major standards promulgation organisations, and providing extensive examples of various technology environments, concrete and practical recommendations can be made.

Procurers can play a key role to driving market development towards standards based interoperability by requesting that specific interoperability standards are recommended and preferred. Certification and assurance of interoperability in a heterogeneous environment (e.g., Continua Certification, IHE Conformance Statement) could be listed as requirement esp. when procuring for a large scale implementation. Relevant interoperability standards at different interfaces which could become part of the formal technical requirements of the procurement specifications are shown in the Figure below.

Figure 3: Relevant interface standards



For procurers, the language used in documentation and specification is central. For example, a typical phrasing is “*The following interoperability standards are recommended and preferred ...*”. Also, list requirement and standards desired in products by functional and network layer interface and OSI layer interface, for example “Personal Area/Local Area Network; Physical, Data, Network, Transport layers”, and demand certification and/or assurance of interoperability in heterogeneous environment (Continua Certification, IHE Conformance Statement).

For vendors and the industry at large, the recommendation is that if market is sparse, you still need to include interoperability language to send a message to market:

- Can become a discriminator in final field of products
- Sets tone and communicates an organization’s vision for desire of interoperability

It can further be used in marketing materials to customers – “We are interoperable based on standards”.

3.2 Procuring personal health solutions: Reflections on the NHS experience

George MacGinnis, from NHS Connecting for Health, Technology Office, UK, then presented on “Procuring personal health solutions: Reflections on the NHS experience”. Against the background of experiences from the UK Telecare Framework, the lessons learned are:

- Ease of use is welcomed – as evidenced by the value of orders
- Mainly proprietary technology was procured for, with no drive for standards
- Was there a barrier to innovation? Certainly, there was lacked flexibility to accommodate new offerings and limited scope for enhancements and added value services
- Cost of ownership unclear at point of sale.

In this sense, an aim for future procurements pertains to formal technical requirements. These:

- Offer buyers greater confidence in the services they are acquiring
- Provide a level playing field for bid evaluation
- And drive desired market behaviours (e.g. interoperability).

As a good practice guide, procurers should tailor their planned solutions to strategic factors such as the expected duration of the service, the estimated size of the patient base, the degree of integration (i.e. the number of services you will be sharing telehealth data with), future enhancements, and issues of privacy risk. The below table provides an overview about how procurement strategies could be designed.

Figure 4: Procurement strategies

Strategic factors	Strategy 1	Strategy 2	Strategy 3	Strategy 4	Strategy 5
What is the expected duration of the service?	1 -2 years	1 -2 years	2-3years	3-4 years	4+
What is the estimated size of the patient base?	Less than 500	500 to 1000	1000 to 5000	1000 to5000	More than 5000
How many services do you want to share Telehealth data with?	0	Not more than 1	2-3	3-5	5+

Requires operational workarounds

Flexible and scalable service.

The remaining issues are certainly about ongoing choice, matters of accreditation, how to mandate standards, and how to specify for future interoperability. Yet when specifying for future interoperability standards, how would a requirement be viewed by the market that, for example, reads like this:

Future Interoperability. Device interfaces are to be maintained to align with the most recent EN ISO 11073 Personal Health Device specialisation series of device standards and Continua Health Alliance guidelines within 24 months of the publication of an update (or equivalents).

As a conclusion, achieving an innovative market through effective procurement requires the following:

- Strategic thinking by buyers
- Valuing integration with clinical processes
- Commercial clarity on the use of standards
- Clear direction on regulation.

3.3 Interoperability standards and the impact on procurement

The third speaker, **Charles Parisot**, Manager for Interoperability Standards and Testing with GE Healthcare, member of the IHE-Europe Steering Committee and Co-Chair IHE IT Infrastructure Planning, discussed “Interoperability standards and the impact on procurement”.

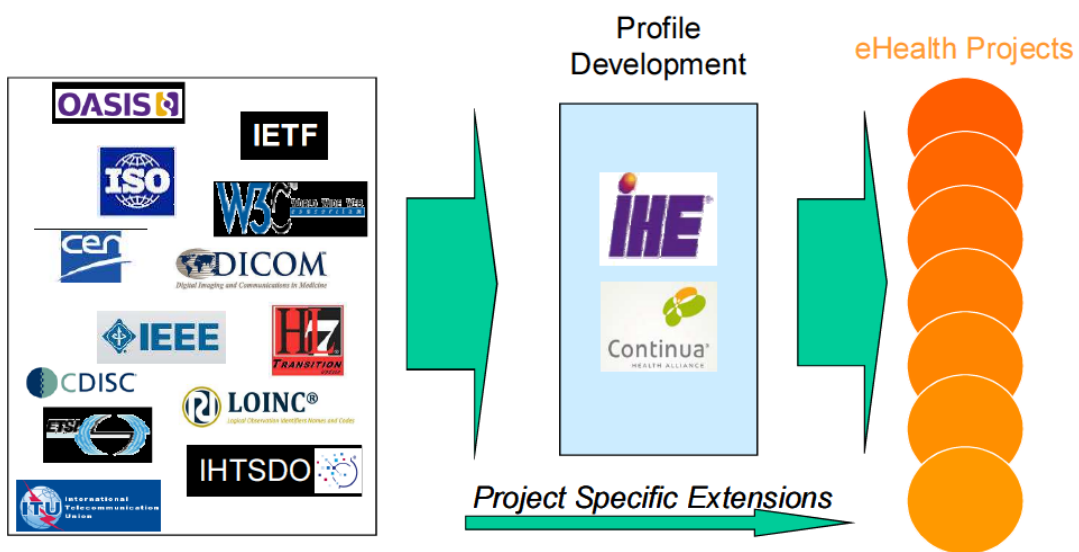
The initial objectives of the presentation already summarize some of the main issues and benefits of interoperability when procuring personal health systems:

- interoperability is hard and, when ignored, results in significant delays, costs and conflicts.

- However, the “good news” is that industry and users have by now “streamlined” standards for interoperability, for both personal and clinical medical device data.
- This is of great help, but needs some attention. Within this playing field, what means conformance testing?
- What does that means to procurers and vendors...?

In order to support interoperability beyond the harmonization of base standards development profiles or guides for their implementation need to be developed. Profiling organisation like IHE and Continua are the key players here for successful implementation in specific eHealth projects. Further, project specific extensions are necessary, as depicted in the below figure.

Figure 5: Interoperability: from a problem to a solution



Procurers need to distinguish between personal devices connectivity and clinical devices connectivity. For both, Continua and IHE have developed required specifications and profiles, as shown in the two figures below.

Figure 6: Personal Devices Connectivity Procurement

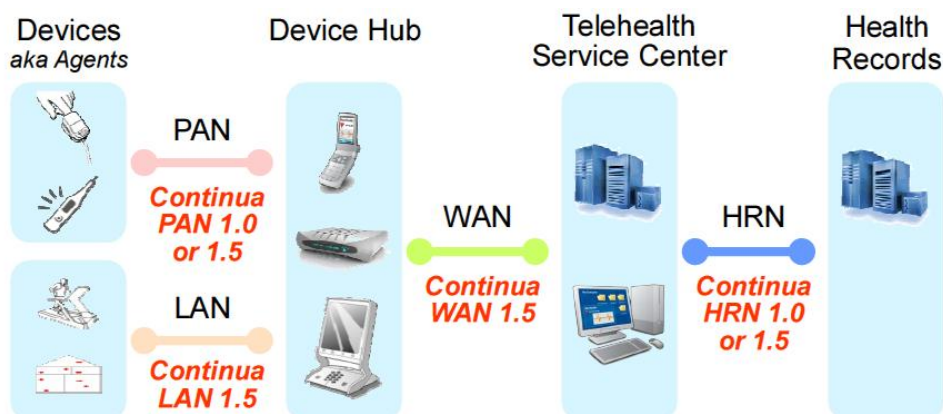
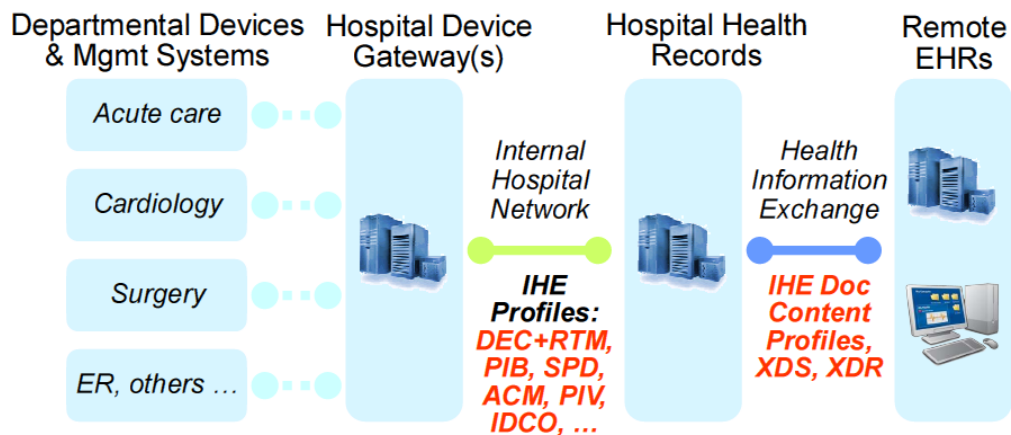


Figure 7: Clinical Devices Connectivity Procurement



In sum, for each systems procured, you will need to:

1. As a first step, specify the Profile/Actors to be supported (saves pages of detailed specs)
2. Acquire the IHE Integration Statement (which declares the Profile/Actors that are supported)
3. Demand a voluntary declaration that the Actor/Profile implemented was tested at a Connectathon
4. Place contractual commitments to fix non-compliance to required IHE Profile Specifications

Concluding remarks can be summarised as follows:

- If you need to interface *personal devices to your EHR or Care Coordination System*, use the Continua Implementation Guidelines.
- If you need to interface *clinical devices to your EHR*, use the IHE Patient Care Device Profiles.
- If you need to *share personal device monitoring data between EHRs, PHRs and Care Coordination Systems*, use IHE XDS/XDR/XDM, and, for clinical document content, XPHR/PHM.

Related to the above, conformance testing, is important to ensure that eHealth standards are complete and robust, thereby ready for plug and play. It requires a testing infrastructure that supports effective industry consensus standards development processes.

4 Discussion

In two sessions, each conducted at two tables, the participants were asked to discuss about challenges and successful approaches to, respectively, hardware and equipment issues, and to administrative issues.

Hardware and equipment-related issues, for example, are:

- Legacy equipment
- Existing contracts and vendor relationships
- Technical issues, standards / the role of interoperability
- Other

Administrative issues were indicated by the following points:

- Legal issues (regulatory, competition law)
- Administration (multivendor environment)
- Integration of PHS with other eHealth systems and services
- Other

Summary of the discussion table 1:

Awareness on interoperability and understanding of interoperability can be divergent among different professional categories within the same hospital. Reference was made to the difference between IT experts, medical devices specialists and doctors that oft speak different languages.

Linked to this problem is also the need for improving matching of expectations between suppliers and procurers. It was recommended that an education process is developed from the developers/suppliers for the procurers to help them understand available solutions and how they can match their needs. It was stressed that procurers often do not feel comfortable when writing detailed specifications because they feel than locked in with that solution and that the liability for the purchase is then fully left on their side.

The concept of pre-commercial procurement was seen as a possible solution to improve dialogue and collaboration for the development of tailored solutions.

Further it was felt by procurers that there is still not enough maturity in standards for PHS and this does not help them making their choice. Some suggested that the EU should help in providing guidance and recommendations.

The EC felt that such guidance could come in the field of procurement and that a study to map out best practices in procurement could help. Some examples were made to introduce the concept of “equivalence” in procurement relations. The procurement in Hospital San Pau in Barcelona from Philips was mentioned and a related contract of 20 years duration, according to which the company is engaged to provide developments of the technology. Also a case was mentioned whereby a benchmarking exercise was associated to the contract aiming at introducing a review on the basis of available technologies / standards on the market and the engagement of suppliers to provide best available technology. It was commented that this practices however would only be sustainable for medium to large suppliers, while smaller innovative companies would be cut off the process.

A recommendation was further to “keeping it simple for procurers”. Others agreed that getting an understanding of standards and technologies available could be a very complex issue. It was commented that the job that Continua and IHE are doing is going in the right direction, however

the technologies available for PHS are still young and it will still require some time for it to consolidate. It was also felt that is important to give the opportunity to personalise products according to procurer's needs.

Further remarks made can be briefly summarised with the following:

- There is not enough maturity in the standards. Standards need to be more stable for adoption by procurers.
- Legacy of the systems is a major issue; legacy systems don't communicate in the hospitals.
- As we must rely upon standards, people need to be made more aware – need a European Guide and give some directions to procurers and vendors.
- Procurement and legal aspects: you end up taking responsibility of procurement – the risk of the system not working is a burden on the procurer and not necessarily the supplier.
- It is important to remember that I'm not prescribing the technology – it is about defining the functionality.

Recommendations for changing the common procurement procedures were put forward in the following way:

- Can the vendors do more than what they are already doing and help to define the procurement process, and educate customers that what they are asking for makes sense or not – vendors need to talk to procurers.
- Educate procurers that they need to look for interoperability – where does a standard need to be in place so that the procurer can trust/feel secure that when they specify something, it will meet the need.
- Need educational process in tandem with procurement tender process: improve dialogue supplier and procurers regarding expectations; use pre-commercial procurement process
- Keep it simple for the procurers – there too many standards – personalize it better to the procurers; the IHE profiles are a very good example here.
- More investment needs to be done in harmonization for global standards between EU and US. If standards are not approved by European standards body, it is legally often not sufficient, even not an ISO/OSI standard; the most salient example being how NHS had technical specifications stripped out of procurement documents for legal reasons.
- More support is needed to move towards de facto standards.

Summary of the discussion table 2

Regarding hardware/software and equipment issues, many of the topics were similar to the discussions at table 1, with the legacy of equipment ranking high as a problem when procuring for personal health systems. Other issues raised can be summarised by the following:

- The role of telecom and network operators should not be underestimated: telehealth/telecare traffic is not high volume, but it needs extreme reliability. Therefore a classification of services and an inventory of activities needed.
- Legacy equipment causes real problems because much of it ages very quickly. Even though mediators can bridge interfaces, a worry always is that the hospitals will not dispose easily of existing hospital equipments. Most institutions are small, local, and have limited planning capacity, additionally.

- Regarding market size, there could be big markets through successful interoperability, but in the “land of pilots”, there is no interoperability. Even when the market is growing, what is the tipping point?
- In a similar fashion, one could say that “interoperability is like diabetes: you get big and fat and then you need it”

Under the heading of legal and administrative issues, the participants touched upon the following points:

- Competition laws not relevant any more; you can sacrifice some interoperability to save cost and gain user friendliness
- Legal blockage for interoperability standards could be solved if exceptions could be made for healthcare and also by stressing the difference between *de facto* and *de jure* standards. The question was asked, if Continua and IHE profiles could be made *de jure* by endorsement/approval from ETSI?
- It was remarked that NHS does write future interoperability into contracts and that costs of compliance are passed on to the buyer.
- Cross border health directives will specify minimum data set, but this comes naturally without legal enforceability. It poses managerial and professional issues, but not technical issues.
- Among the recommendations were that financial flows need to be regulated for roaming and virtual services and that the patients rights directive (country of origin) and directive on mutual recognition of professional qualifications needs to take the virtual and telecare area into account, too.

5 Outlook

The SmartPersonalHealth Workshop entitled *Enabling Integrated Care: Procuring Personal Health Systems* identifying major challenges and issues relevant for procurement, and discussed potential policy measures to promoting interoperability of personal health systems.

Recommendations to policy makers will be proposed after detailed analysis of the entire series of SmartPersonalHealth workshops and consultations.

The Belfast Workshop underlined a need for further policy actions, in order to foster more effectively interoperability among personal health systems and with EHRs through procurement processes and strategies.

Main conclusions can be summarised as follows:

- Clear guidance is needed on the relevance and impact of standards and profiles on procurement specifications and procedure. This calls for EU level action to provide detailed guidelines and concrete recommendations to procurers .
- Similarly, a collection and publication of good practice cases would facilitate strategic planning in the direction of integrated care and, consequently, facilitate procurement planning.
- Further research on issues of interoperability and pre-commercial procurement, and eventually the juxtaposition of both areas is necessary.
- Closely related, consultations with the wider community, and guided exchange and networking are a central tool to extract and promote expertise and success factors.
- In particular, interviews with both private and public procurers can deliver background knowledge for inferring more concrete recommendations and adjust better tailored policy measures.
- There is a concrete need for concertation and exchange of results from similar workshops and projects.

Draft report prepared by Dr. Rainer Thiel, empirica
(based on WS presentations and participants' notes)

6 List of participants

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Alejandra **Guillen Arredondo**, Medtronic
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Ian **Hay**, Orange, Head of emerging
technologies International Standardisation

Adam **Hoare**, Red Embedded

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Chris **Johnson**, Cypak

Atul **Kumar Prarabdha**, NHS

Sakari **Lang**, Nokia, Director Compatibility
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George **MacGinnis**, NHS Connecting for
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Alessandra **Marino**, The Centre

Bridget **Moorman**, Industry Advisory Board for
the Renewing Health project

Alberto **Moreno**, Grupo de Innovación
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Brian **O'Connor**, Executive Chairman,
Corporate Direction Ltd.

Damien **O'Connor**, EHC

Charles **Parisot**, IHE

Vije **Rayput**, General practitioner England

Mário **Romão**, Intel

Michael **Strübin**, Continua Health Alliance

Michael **Taylor**, Project Manager Health and
Social Care Northern, Ireland

Rainer **Thiel**, Empirica

Petra **Wilson**, Cisco

7 Links to presentations

[Interoperability 101: an overview of interoperability issues for procurers](#)

Bridget Moorman, Industry Advisory Board for the Renewing Health project (pdf, 19 slides, 0.4MB)

<http://sph.continuaalliance.org/docs/SPHBFSMoorman.pdf>

[Procuring personal health solutions: Reflections on the NHS experience](#)

George Macginnis, NHS Connecting for Health, UK (pdf, 12 slides, 0.7MB)

<http://sph.continuaalliance.org/docs/SPHBFSMacGinnis.pdf>

[Interoperability standards and the impact on procurement](#)

Charles Parisot, IHE Europe (pdf, 35 slides, 1.6MB)

<http://sph.continuaalliance.org/docs/SPHBFSParisot.pdf>

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