

Continua Health Alliance and Associated Standards

Design and Developer Forum on Telemedicine Systems:
Issues, Design, Development and Standardization
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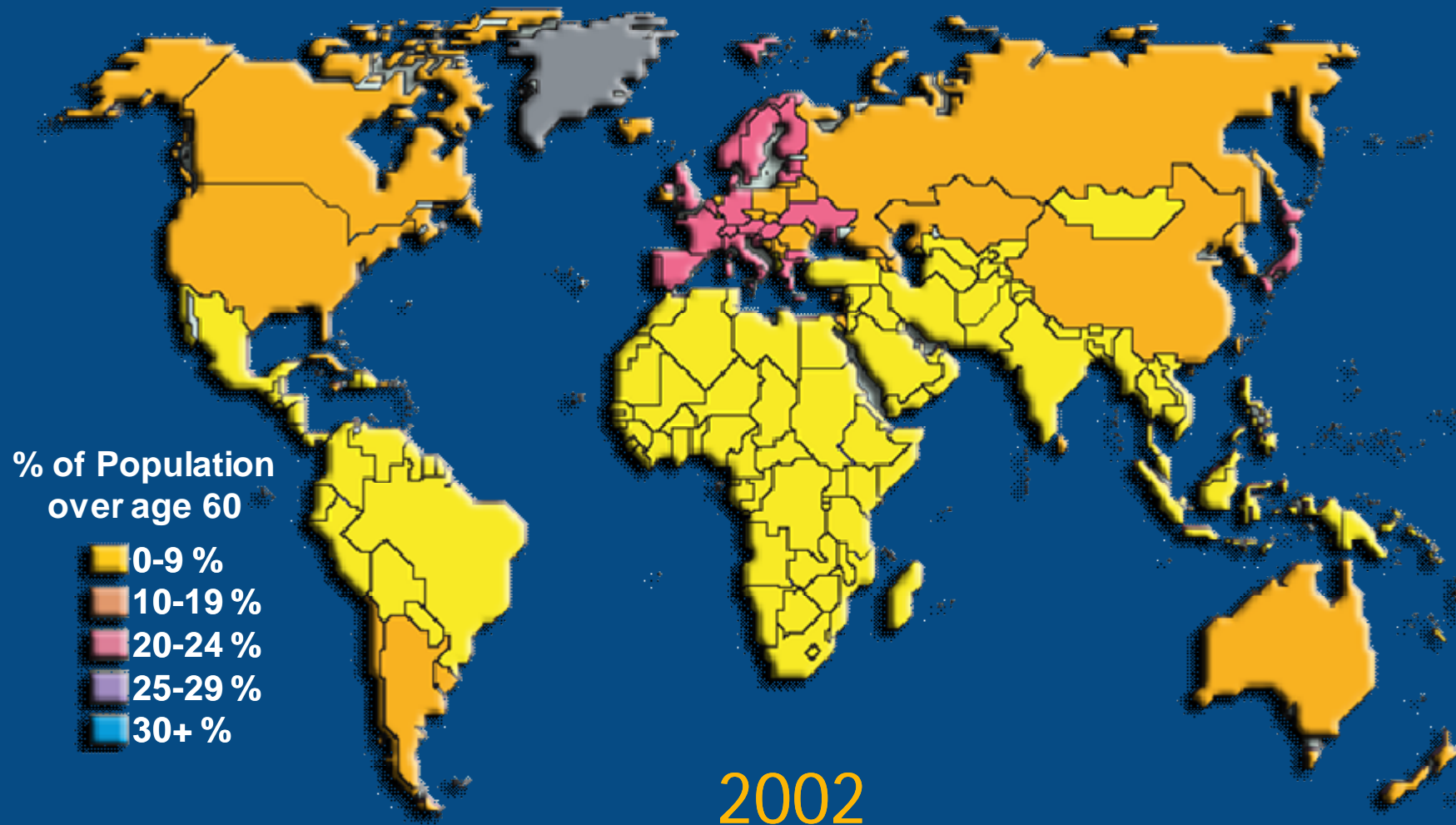
Agenda

- Motivation to Standardize Telemedicine
- Considerations when Standardizing
- Continua Health Alliance Introduction
- Standards Overview
 - Personal Area Network Interface
 - IEEE 11073 Personal Health Device Data
 - Bluetooth Health Device Profile
 - USB Personal Healthcare Device Class
 - Health Record Network Interface
 - Personal Healthcare Monitoring Report
- Conclusion

Personal Health Device Market Data

- 861M Chronic Disease patients, 50% co-morbidity (one or more additional diseases):
- 75-85% spent on chronic disease management
- 278M Healthy Independent Living (Worried Well)
- 15% US GDP growing to 25% (\$1.5T with 1/3 waste)
- UK invests \$4B to date on £12B forecast for National Health System redesign
- 262M elders – planet is aging

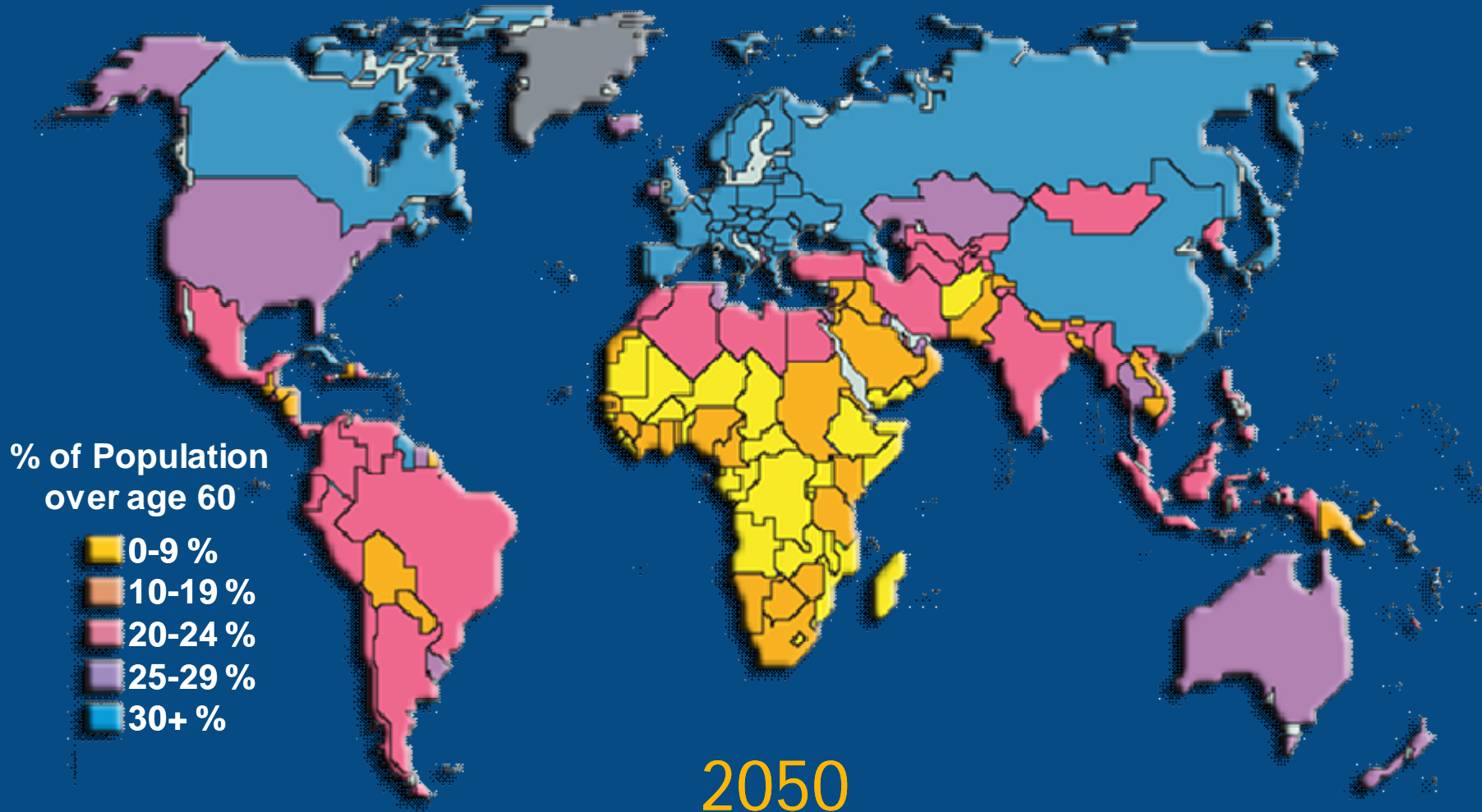
Driving the Need: Population over age 60 now



Digital Health Group **Over Age 60, World Wide Average is 10%**



Driving the Need: Population over age 60 future

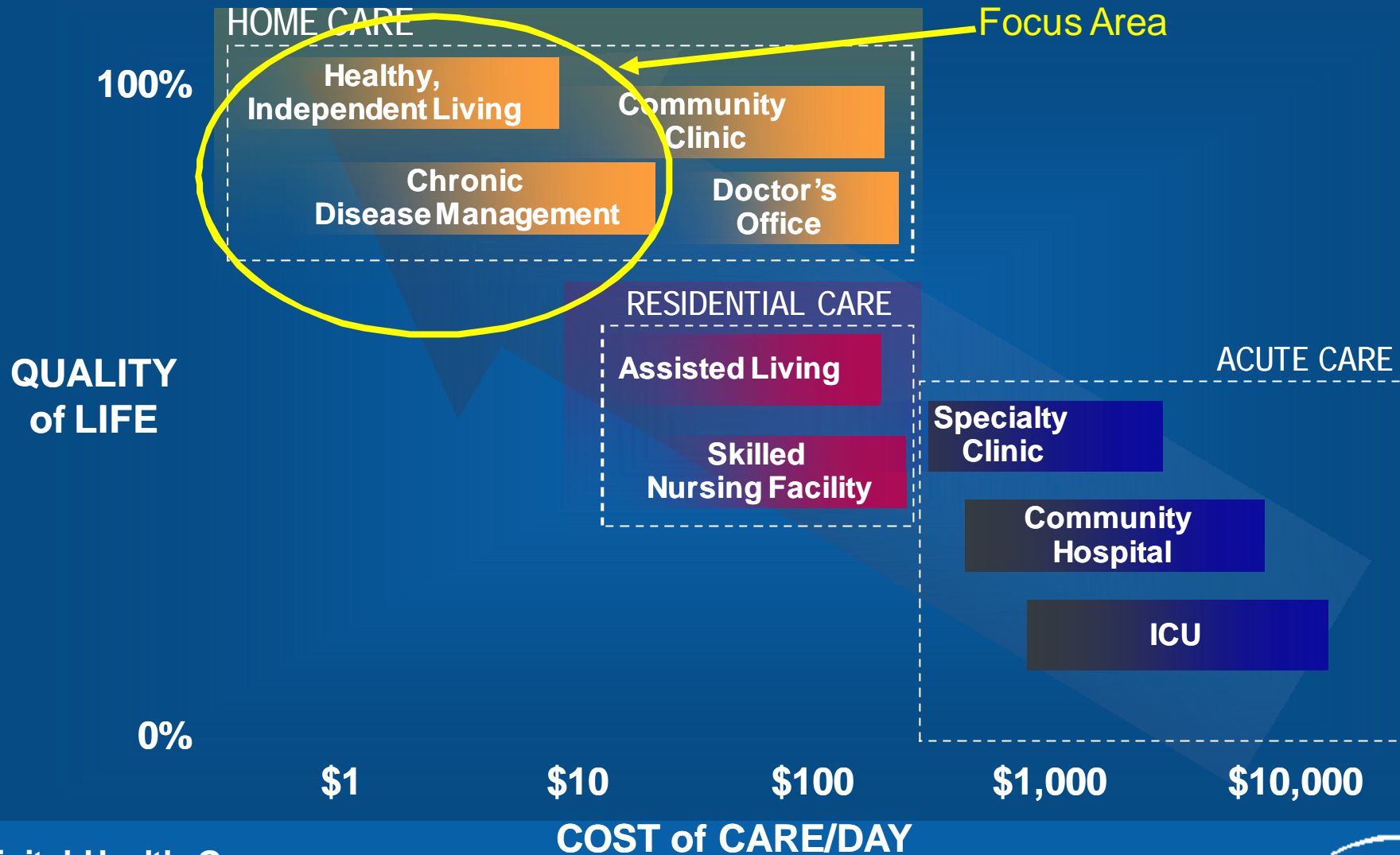


Digital Health Group **Over Age 60, World Wide Average is 21%**

Source: United Nations "Population Aging 2002"



Motivation to Standardize Telemedicine



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Considerations when Standardizing

- Recruiting companies with similar interests
- Collecting/agreeing on use cases
- Defining an architecture for seamless data flow
- Surveying for existing solutions
- Building consensus around a solution
- Writing the standard
 - Determining whether to phase-in the solution
- Implementing / testing the viability of the standard
- Testing that a solution interoperates
- Certifying a product

Non-technical Considerations

- Encouraging adoption of the standards
- Reimbursement
- Policy and regulatory implications
- Harmonization with other organizations

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Continua
HEALTH ALLIANCE

Continua Health Alliance

“Our Mission is to establish an eco-system of interoperable personal health systems that empower people & organizations to better manage their health and wellness”



1) Disease Management (DM)

- Vital sign monitoring / remote patient monitoring (RPM), medication reminders and compliance, trend analysis and alerts, Email, chat, video, appointment scheduling, personal health records

2) Aging Independently (AI)

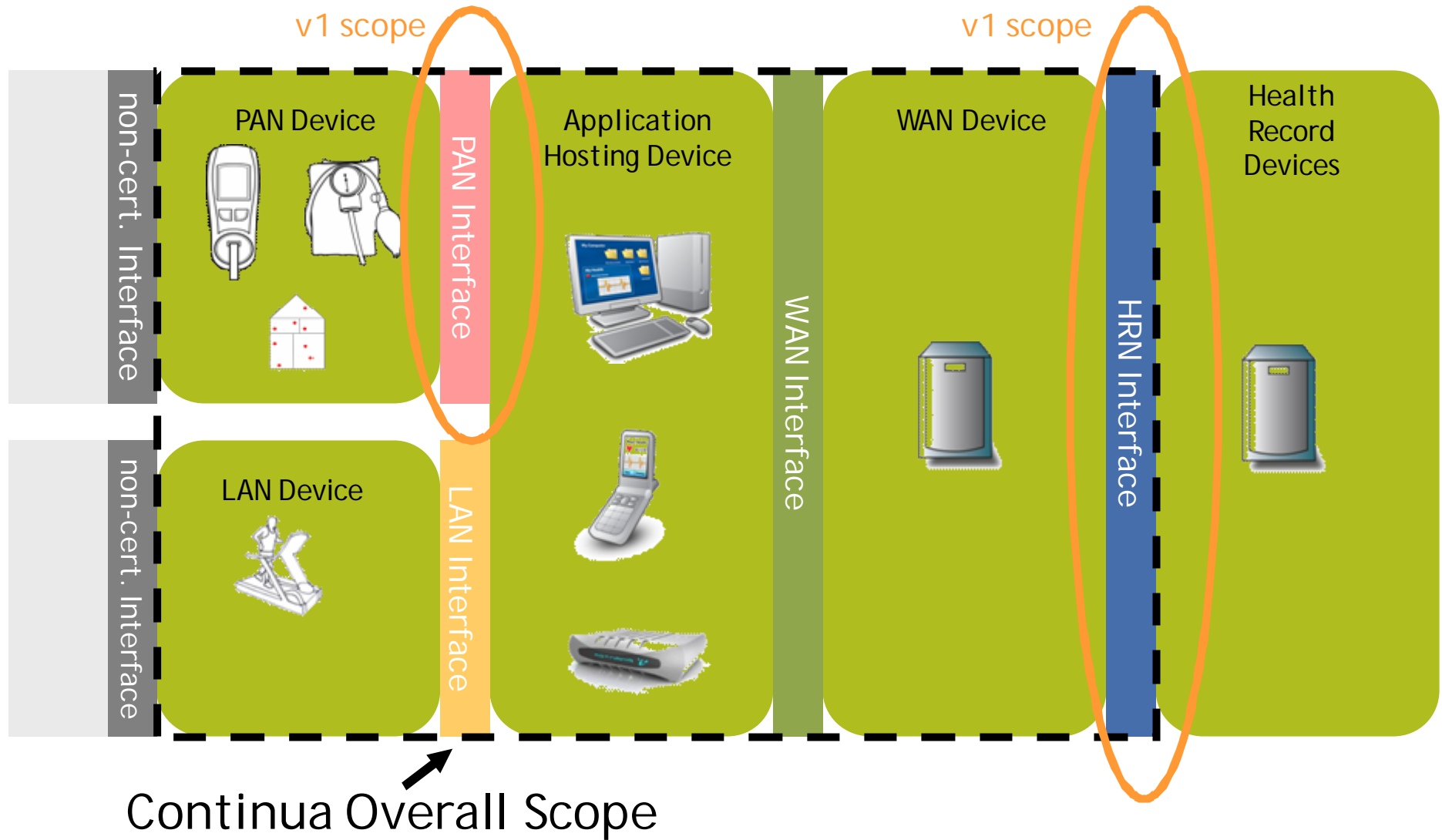
- Helping elderly age gracefully in their own home, basic context and activity monitoring. May include DM-like elements

3) Health & Fitness (HF)

- Weight loss, Fitness, “Worried Well” vital sign monitoring (e.g. Weight, Blood pressure, Glucose, Cholesterol, Activity level), Personal Health Records




Continua Ecosystem





- Describe the long term vision
 - Version 1 focuses on limited areas for success
- Select industry standards and specifications
- Reduce the number of options to increase interoperability


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Pulse Oximeter 

Blood Pressure / Pulse 

Weight Scale 

Glucose Meter 

Cardiovascular and Strength Fitness Monitor 

Independent Living Activity 

PAN Interface
Device Manager



- IEEE 11073-10404™ Pulse oximeter
- IEEE 11073-10407™ Blood pressure monitor
- IEEE 11073-10408™ Thermometer
- IEEE 11073-10415™ Weighing scale
- IEEE 11073-10417™ Glucose meter
- IEEE 11073-10441™ Cardiovascular Fitness Monitor
- IEEE 11073-10442™ Strength Fitness Equipment
- IEEE 11073-10471™ Independent Living Activity
- IEEE 11073-20601™ Optimized exchange protocol



Bluetooth Health
Device Profile Specification



USB Personal Healthcare
Device Class Specification

PC 

Personal Health System 

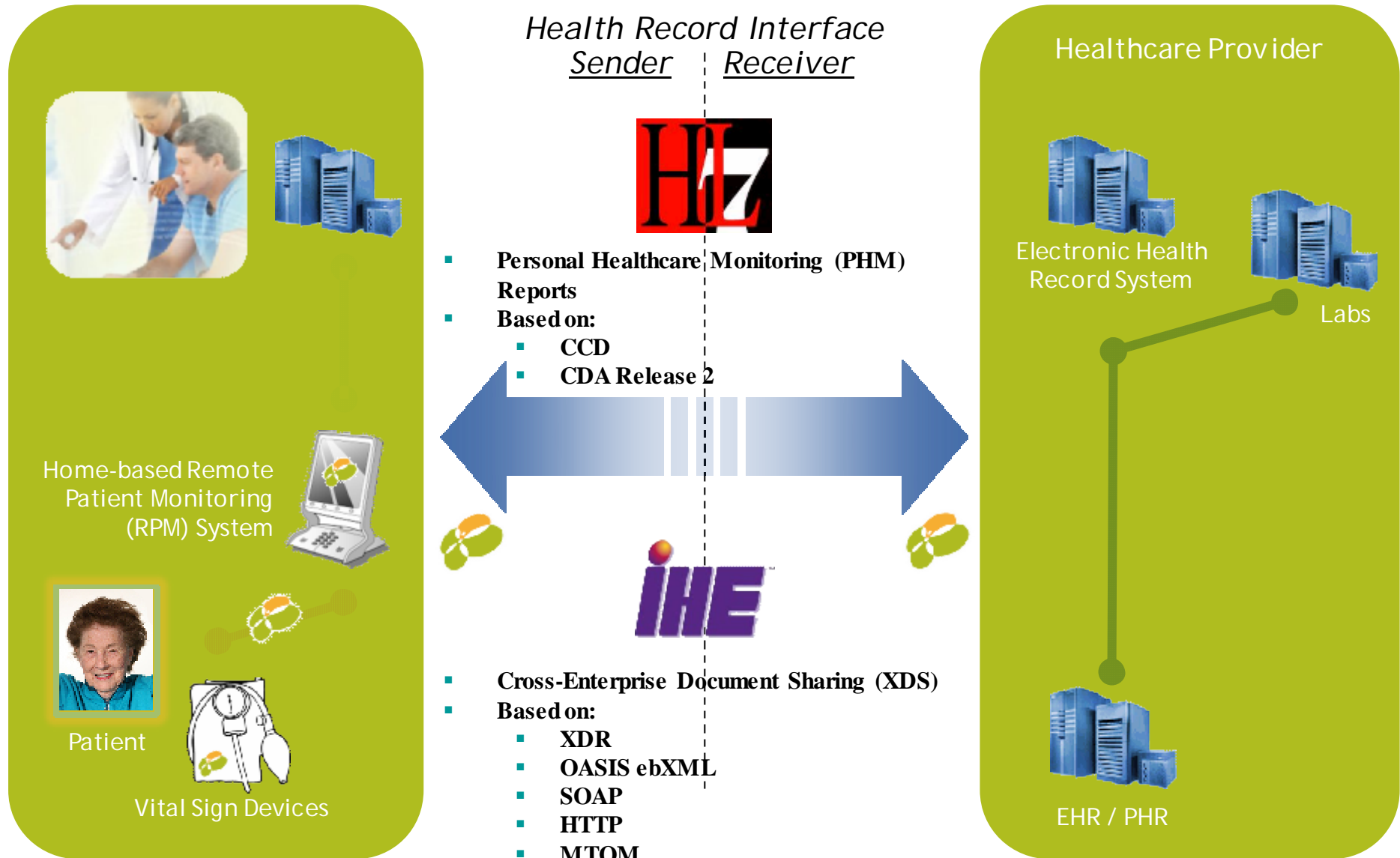
Cell Phone 

Set Top Box 

Aggregator 

Next Phase

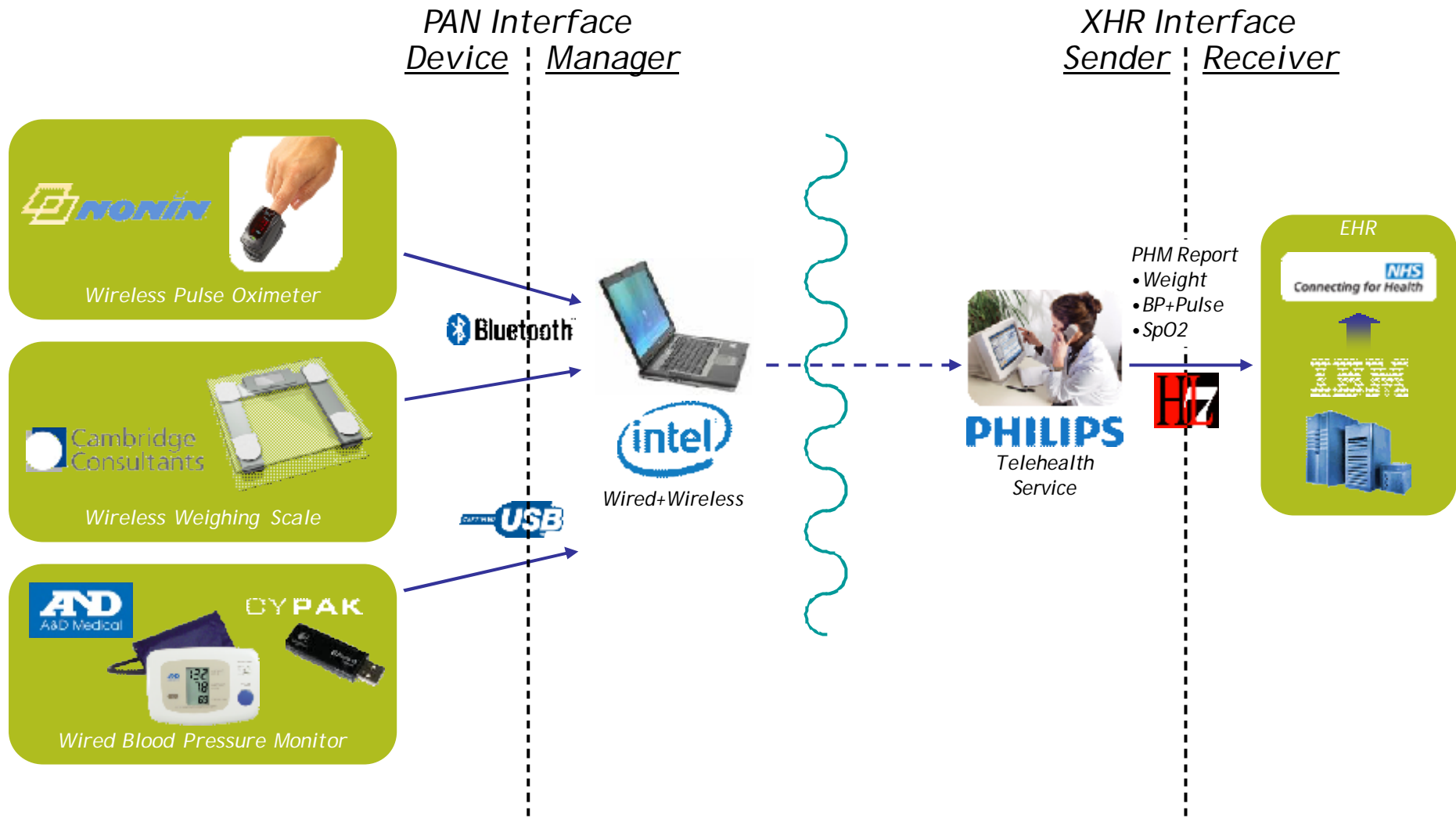
- IEEE Standards work
 - IEEE P11073-10406™ Basic 1-3 lead ECG
 - IEEE P11073-10418™ International normalized ratio (INR) monitor
 - IEEE P11073-10419™ Insulin pump
 - IEEE P11073-10420™ Body composition analyzer
 - IEEE P11073-10421™ Peak flow monitor
 - IEEE P11073-10443™ Physical activity monitor
 - IEEE P11073-10472™ Medication monitor
- Bluetooth work
 - Power reduction
- Continua work
 - Working through the next round of use cases

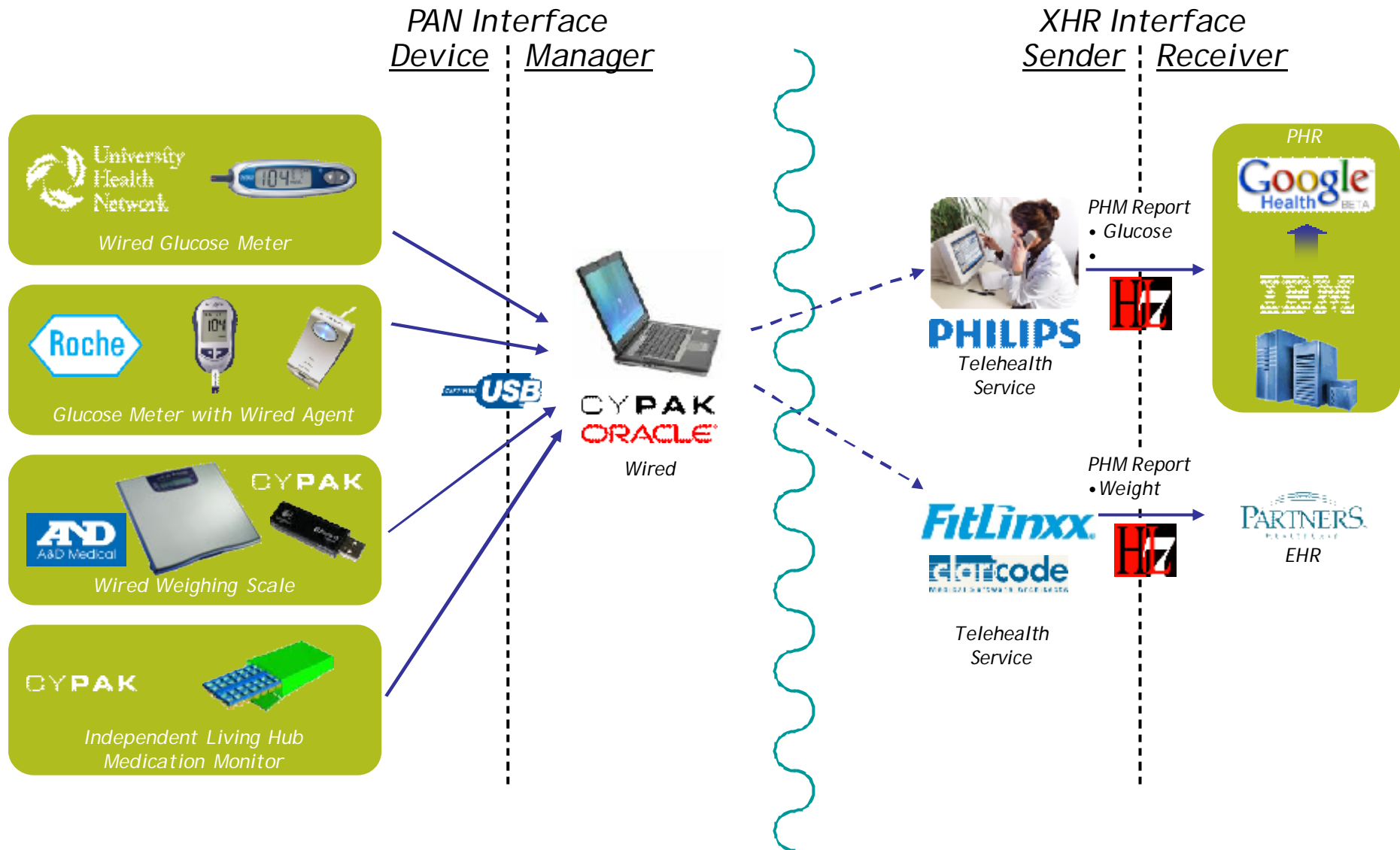


Plugfests

- There have been 10+ plugfests as the standards, specifications, and guidelines matured
- Tested the Continua Guidelines, IEEE standards, USB specification, Bluetooth specification, and HL7 profiles
- The plugfests have found issues with the developing standards and interoperability
- Resulted in clarifications in the final documents

- In October 2008, Continua presented the first public demonstration
- Fifteen companies participated
- Demonstrated scenarios in disease management and health and fitness





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Conclusions

- Strong industry momentum (e.g. > 160 organizations in Continua, > 115 in IEEE, > 35 in Bluetooth)
- Long term architecture created
- Ten+ plugfests held over the last year to test the standards and interoperability
- MOUs in place between Continua, IHE, IEEE, Bluetooth
- Standards, specifications, and guidelines are completing
- First public demonstration held in October '08
- Reference code available within Continua
- Device certification program in place
- First products are applying for certification
- Continua work groups addressing reimbursement and regulatory matters

Invitation to Get Involved!

Continua Health Alliance

For more information, please visit: www.continuaalliance.org



ISO/IEEE 11073 Personal Health Device WG

For more information, please contact: phd-chair@ieee.org



Bluetooth Health Devices Working Group

For more information, please contact: med-chair@bluetooth.org



USB Personal Healthcare Device Class

For more information, please visit: Personal Healthcare on http://www.usb.org/developers/devclass_docs



Digital Health Group



* Other names and brands may be claimed as the property of others.