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Organi di coordinamento Confederazione-Cantoni



# Standards und Referenzarchitekturen für Telemedizin: Entwicklungen in Österreich und Europa

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DIE SPITALER DER SCHWEIZ  
LES HÔPITAUX DE SUISSE  
GLI OSPEDALI SVIZZERI



# Telehealth services in AT

- Healthcare reform is a national activity
  - Ministry of Health
  - Regions
  - Social / Health Insurance providers
- National electronic health record is underway
  - Central components are online 2015-12-09 – proudly delivered!!!!
  - Vienna, Styria hospitals are already connected
  - Other hospitals in Austria scheduled until end 2016
  - Resident doctors 2017
- Goal is to add telehealth services
  - Step 1: Diabetes, heart failure, implant follow up, selected as medical priorities in 2014
  - Step 2: pre-planning of steps towards implementation – ongoing
    - Legal, financial, organisational, ...
    - IT Architecture
  - And then??

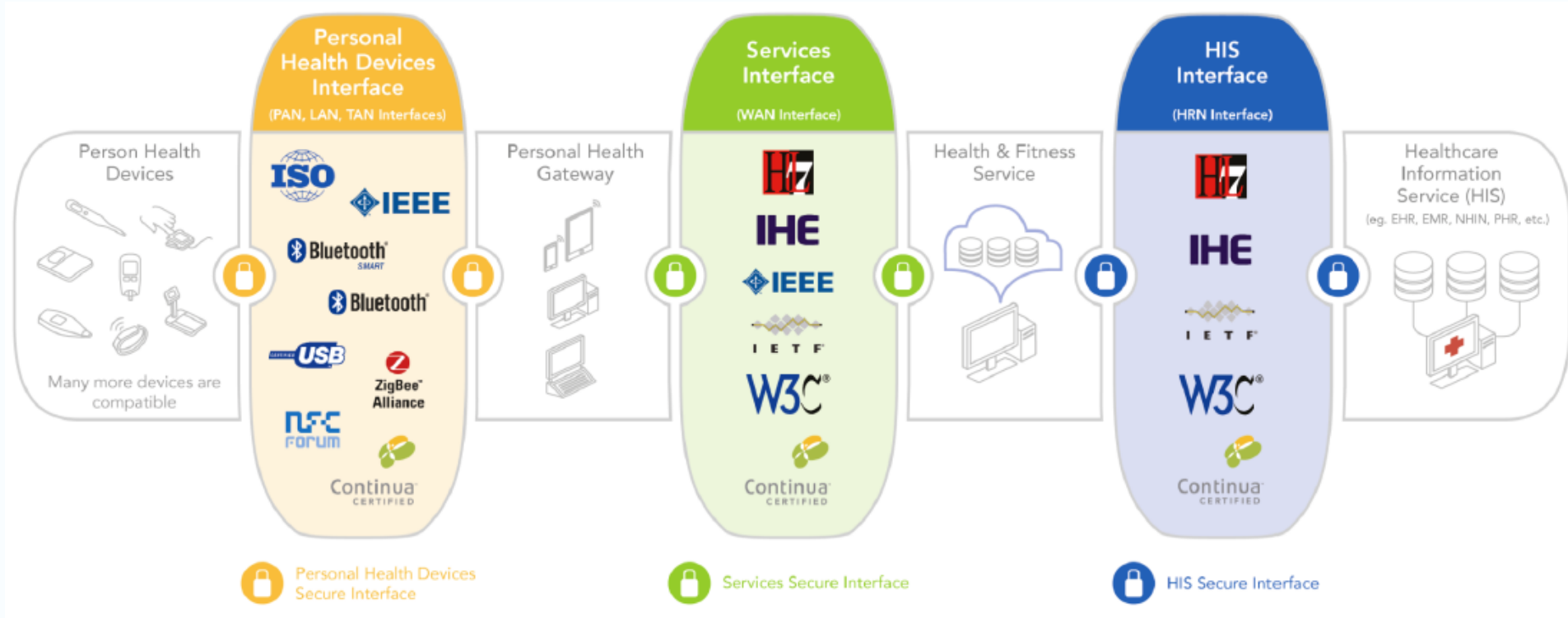
# Disease Management Programs are the starting point

- Telehealth services will support specific Disease Management Programs (DMPs)
- DMPs define
  - Who is doing what, roles, rights, duties, ...
  - Processes: Medical, administrative, regulatory, technical, ...
- Infrastructure is needed
  - able to support all possible DMPs
  - covers basic legal, financial, organisational issues

# Architecture status so far

- IT architecture was developed
  - Work started 2015-10
  - Engagement of IHE-AT, HL7-AT, ... , „Interoperability Forum“
  - 5 Workshops done, resesarch, high level discussions
  - Architecture draft was finalised 2016-4
- Experience on interfaces collected
  - PHD to AHD: varied, BT 4.0 / LE /smart on the rise?
  - Products: Few standardised PHDs, nearly no AHDs
  - AHD/HDH ... EHR: IT Infrastructure still needed
  - To bridge from proprietary interfaces
  - We are in touch with Continua!!!

# Continua Architecture



Continua High Level Architecture. Source: Personal Connected Health Alliance (PCHA) White Paper - Fundamentals of Data Exchange, September 2015. Available online: <https://cw.continuaalliance.org/document/dl/13473>

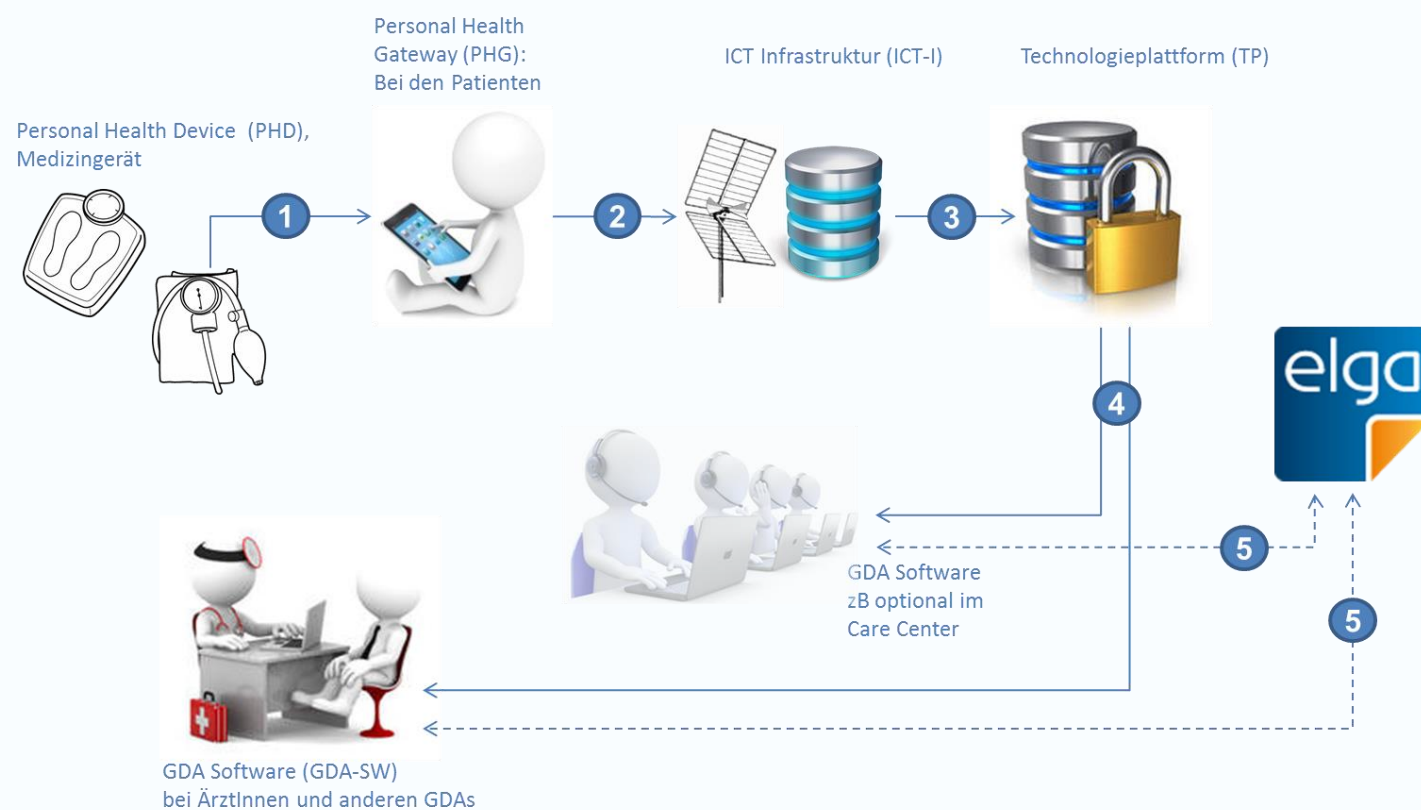
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# Survey results on implementation experience: anecdotal evidence, discussions

- Personal Health Devices Interface
  - “We adapted our PHG to each PHD type individually. Even the certified ones.”
  - “The available PHDs did not make all users happy. There are specific usability issues.”
  - “Users want NFC as transport.”
  - “PHDs need time to market.”
- Services Interface
  - “Connecting the PHG to the server is not for the faint of heart.”
  - “Give us FHIR!!”
  - “PHGs need time to market. Quick moves may start from the servers up.”
- HIS Interface
  - “We need this with IDs, security, authentication, ... Give us XDS!”
  - “We want to filter the data here!”

# Architecture Draft from Austria



This image by Stefan Sauermaann. The architecture shown follows the personal views of the author alone.

It is not final and subject to ongoing discussions in Austria and internationally.

GDA Software (GDA-SW)  
bei Ärztinnen und anderen GDAs

1  
Continua  
PHD  
Interface:  
Bluetooth,  
USB, NFC,  
Zigbee, ...

2  
Continua  
Services  
Interface:  
Funk, Kabel  
zB ADSL,  
UMTS, LTE, ...

3  
IHE ITI 41  
Transaction:  
sichere IT  
Netze

4  
IHE IT 18,43  
Transaction:  
sichere IT  
Netze

5  
ELGA:  
Sichere IT  
Netze

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# Architecture recommendations (summary)

- 1: PAN, TAN, LAN Interface - optional
- 2: WAN Interface - optional
- 3: HRN Interface - modified:
  - “Continua” payload [HL7 PHMR CDA](#): mandatory (adapt for AT – regulatory req.)
  - Different transport: [IHE ITI-41 \(XDS\)](#): mandatory (as in ELGA)
- 4: IHE XDS
  - [IHE ITI-18, ITI-43](#): mandatory (as in ELGA)
  - [IHE ITI-61](#) (On Demand Documents): optional
    - This is the real clever, revolutionary bit!!!
- Basically this is [Continua](#). We added more [IHE XDS](#) as data reaches EHRs.
- 1: We need to carefully look at market dynamics around this one
- 2: FHIR will be loved here, when stable!!

# Recommendations on process

- In Austria
  - Start a list of products that are to be used in telemonitoring
  - Including combinations of compatible products
  - Manage this list transparently and in cooperation
- Start international cooperations
  - Over time harmonise, detail extend the architecture
  - Agree on steps and schedules
  - Carefully work the market dynamics for personal connected health devices

# Architekturen in den Nordics

- Dänemark
  - Architektur 2013 fertiggestellt
  - Continua für PHD auf AHD empfohlen, nicht verpflichtend
- Norwegen
  - Architektur in Arbeit
  - Continua für PHD auf AHD empfohlen, nicht verpflichtend
- Schweden
  - Architektur in Arbeit
  - Continua für PHD auf AHD empfohlen, nicht verpflichtend

Continua Summer Summit (Paris, France): June 24-26, 2015, Opening plenary 2 – Large scale adoption, slideset on large scale adoption. Available online

[http://www.continuaalliance.org/sites/default/files/Continua\\_Open\\_House\\_LargeScaleAdoption\\_2015.06.24.pdf](http://www.continuaalliance.org/sites/default/files/Continua_Open_House_LargeScaleAdoption_2015.06.24.pdf)

Continua Summer Summit (Paris, France): June 24-26, 2015, Parallel session 2 – Nordic market access workshop. Slideset on nordic market access. Available online

[http://www.continuaalliance.org/sites/default/files/Continua\\_Open\\_House\\_NordicMarketAccess\\_2015.06.24.pdf](http://www.continuaalliance.org/sites/default/files/Continua_Open_House_NordicMarketAccess_2015.06.24.pdf)

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# Where do we go from here?

- Requirements on the „process“!!!
  - Were communicated to EU eHealth Network
  - [“The Letter”](#), PCHA, [22 June 2016](#)
  - Answer arrived, needs follow-up!!
- Formally in Austria
  - Work is in progress on a national guideline on IT Architecture for telemonitoring expected end 2016
    - [See here](#) (bottom of page)
  - 2017-2019 framework document on national goals in healthcare expected end 2016 – likely will include text on telemonitoring

# Looking forward to learn more!

- [stefan.sauermann@technikum-wien.at](mailto:stefan.sauermann@technikum-wien.at)
  - [www.technikum-wien.at/mbe](http://www.technikum-wien.at/mbe)
  - [Department of Biomedical, Health & Sports Engineering](#)
  - [www.healthy-interopability.at](http://www.healthy-interopability.at)
  - [My Portfolio](#)



- Keep tuned: We started the funded project INNOVATE in September 2016
  - Thanks to [MA23 @ City of Vienna](#)



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