



**User-centric eHealth: Telemedicine, Personal Health Records
and Services in the Cloud.
Challenges and answers from Privacy and Security By Design.**

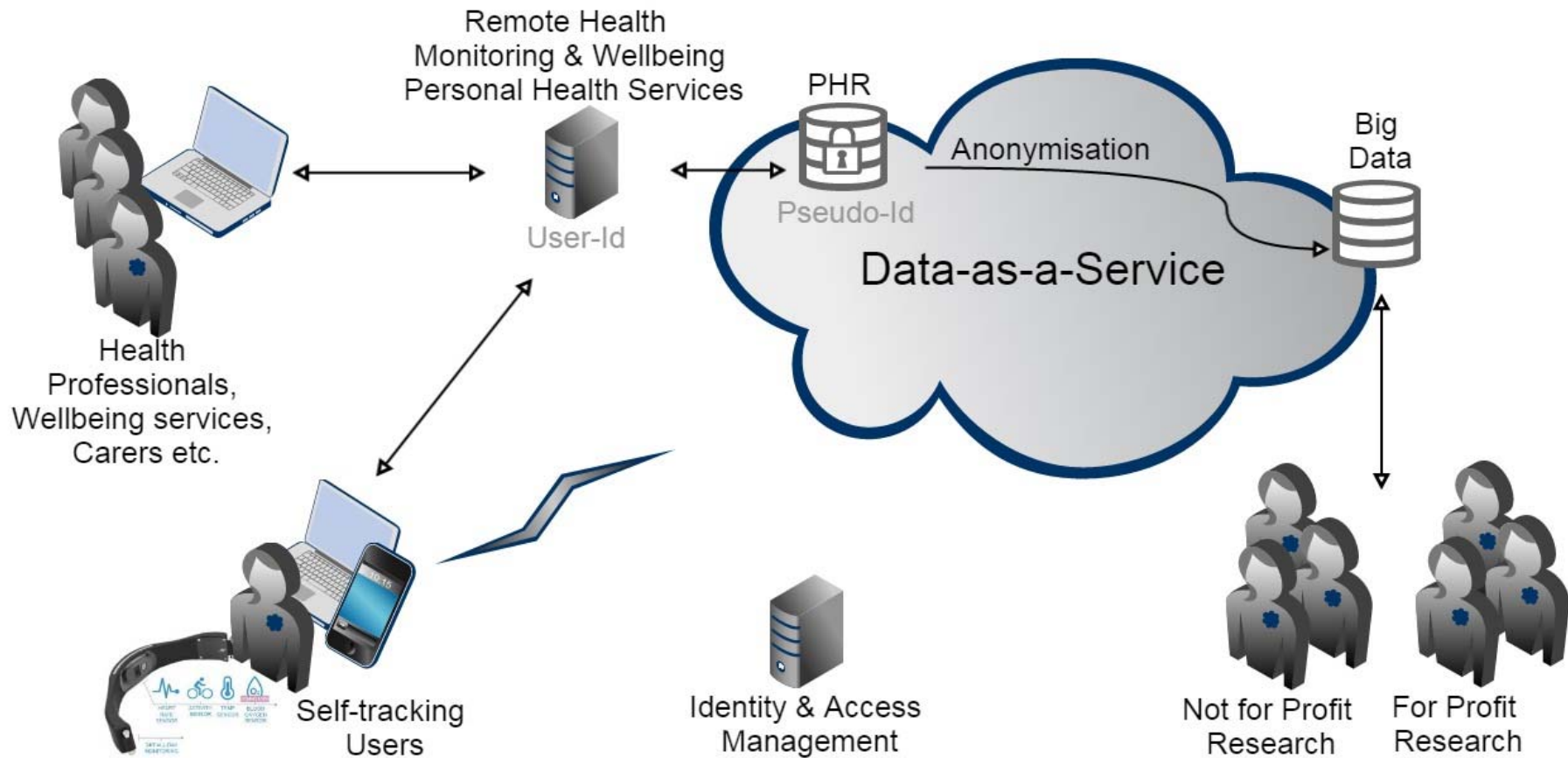
Ross Little

27/02/2015

Personal Health Service & PHR Data-as-a-Service

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▶ **EU Data Protection Framework**

- Fragmented Member State legislation from EU directives
- Liability is a complicated issue (esp. Crossborder)
 - Physician, PHR Owner, Remote care service provider
- Explicit Consent for collecting / sharing health data

▶ **Member State Health Practice & Regulations**

- User Controlled PHR Vs EHR regulations
- Telemedicine face-to-face diagnosis and health advice
- Legal basis for the secondary use of health data
 - Strict Regulations Vs Informed Consent
 - Anonymous

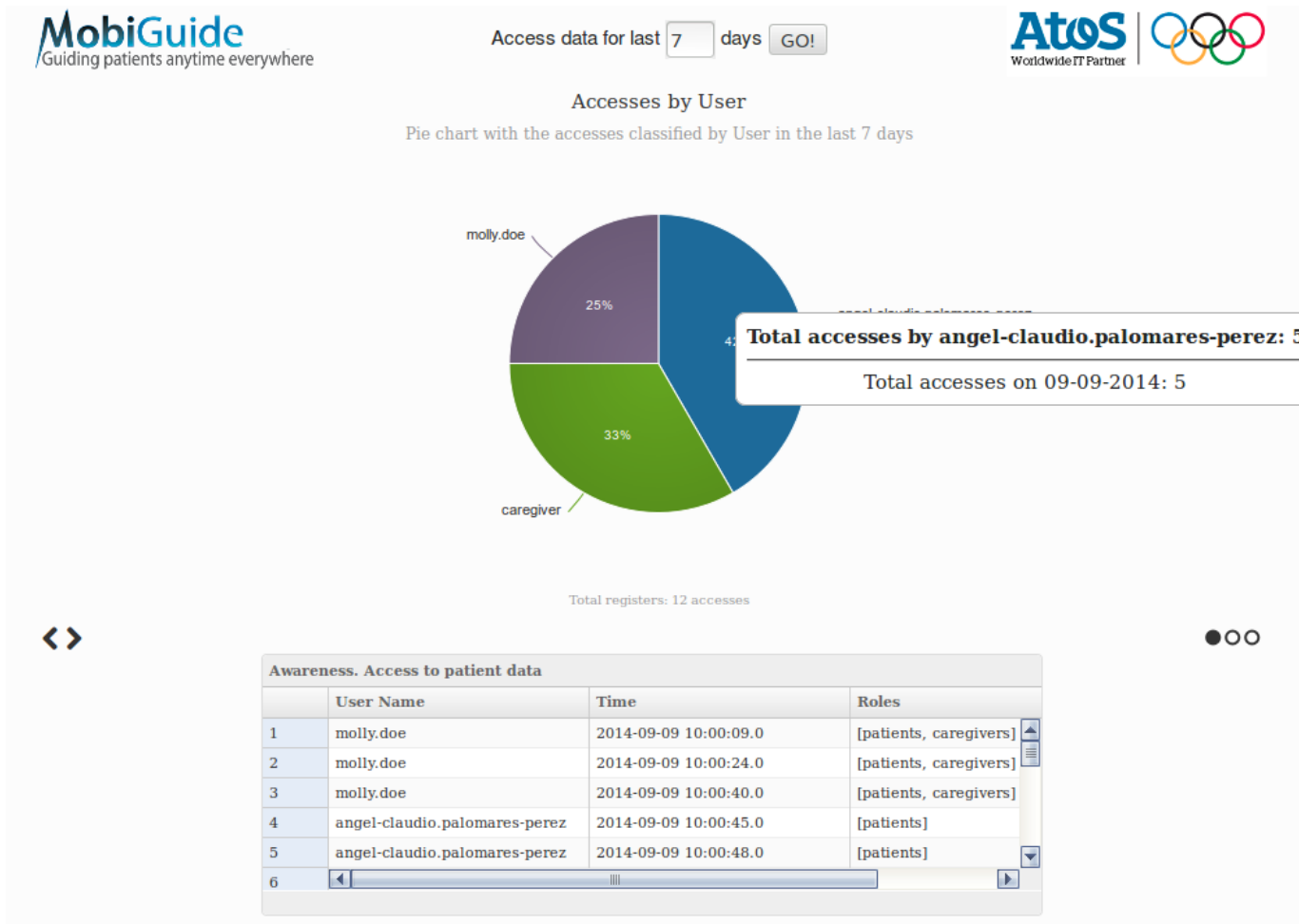
- ▶ **Data Minimisation** (primary collection purpose)
- ▶ **Big Data Anonymisation / Differential Privacy**
 - Demographic & Soft biometrics: country, sex, age, height, weight...
 - Health Markers: smoker, cholesterol, diabetic, heart rate...
 - Psychological Wellbeing: questionnaires
 - Physical /Sedentary Behaviour: lying, sitting, calories...
 - Dietary food intake
- ▶ **Data Portability** – Generate HL7 PHMR
- ▶ **User opt-in consumer category included in Big Data (HDEP: 78%)**
- ▶ **Ethical committee big data authorisation control**
 - Approve consumer category & purpose of collection

- ▶ **Separation of sensitive health data**
 - No Personal Identifiable Information held in the DaaS
 - Pseudo-Id Hub - One way cryptographic pseudonyms
- ▶ **Federated Access Control** trusted third party PHS web & mobile apps
- ▶ **PHR User Awareness Service & PHR Audit Log**
- ▶ **Big Data Audit Log**
- ▶ **Securing Big Data**
 - Secure web queries to generate Big Data reports
 - Raw Data files restricted to highly trusted institutions
 - Consider Digital Watermarks, DRM, Fingerprint Hash

User Awareness Service to Big Data Awareness Service

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Related Projects

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+DAPHNE

Data-as-a-service platform
for healthy lifestyle and
preventive medicine

<http://www.daphne-fp7.eu/>



<http://www.mobiguide-project.eu/>



<http://www.witdom.eu/>

Thank you

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