

## Trustworthy Healthcare Platform

The Healthcare Trustworthy Platform is a multilevel Personal Health Record (PHR) platform based on the Trustworthy Cloud Technology that allows people to share health data while guaranteeing security and privacy. It aims to provide services such as providing an API for 3rd party apps to access the user's health data, allowing for user registration, and allowing end users to manage their data and to specify a privacy policy with fine-grained access control.

Nowadays, the need to share healthcare data becomes more relevant, and as evidenced by emerging online services the need of users to have reliable and secure infrastructure to enable critical healthcare services.

The Healthcare Trustworthy Platform aims to provide enhanced services that revolve around people's PHR data. PHR data is an extensive collection of data related to each single person's health. But it is not limited to health records, it can also be digital data from mobile devices such as smartphones and body sensors.

The Healthcare Platform is thus able to collect any type of PHR data and provide them in a social context in which patients and doctors (as an example) can

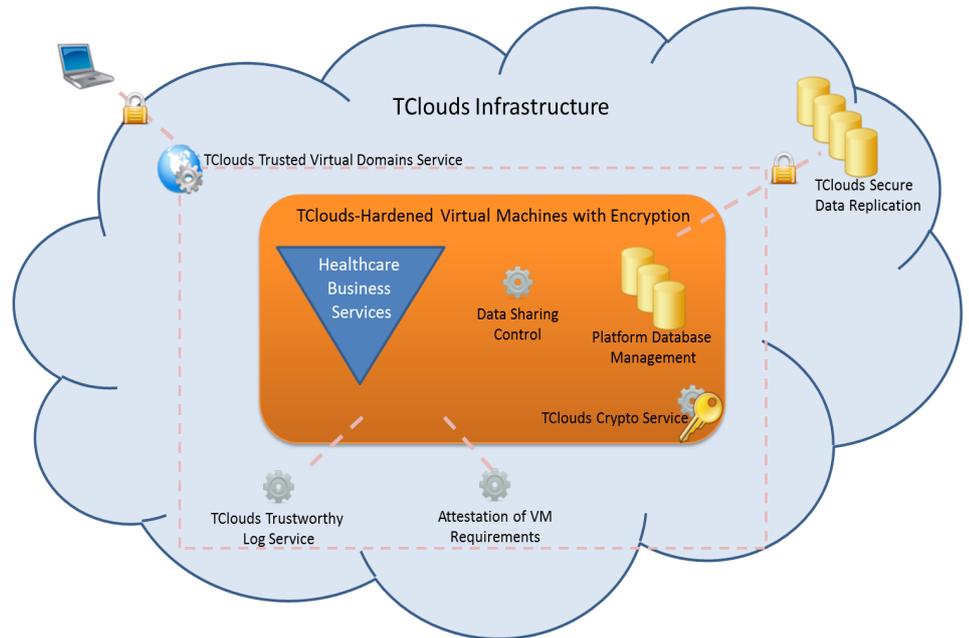


Figure 1: Healthcare Trustworthy Platform on top of TClouds Infrastructure

share data. Figure 2 explains the concept.

## Benefits for End Users

End users of the Healthcare Platform are often referred to patients and healthcare professionals, such as doctors. The Trustworthy Healthcare Platform foster users to change the paradigm of „data ownership“, moving the control

from the institution to the patient, allowing her to decide how and with whom to share data at a very fine-grained level with easy privacy policies. The patient's PHR data can be totally under her control.

TClouds Infrastructure leverages and increases privacy and security aspects by providing enhanced

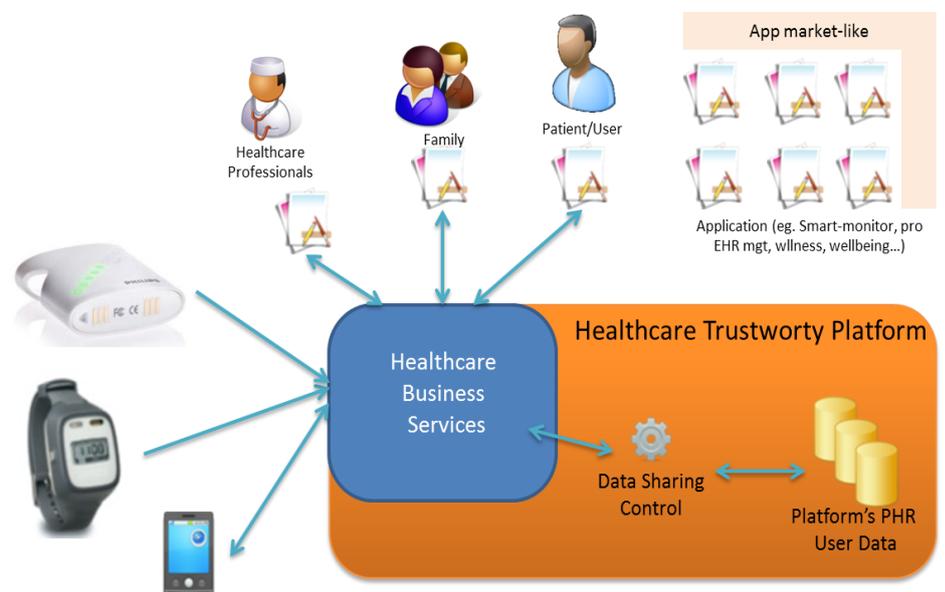


Figure 2: Healthcare Trustworthy Platform connected with devices and apps

transparent features, allowing the Healthcare Trustworthy Platform to be a lightweight system.

## Platform In Depth

### Privacy Policies, End-User's Responsibility & Third Parties

Sharing healthcare data may become a serious privacy issue. With our platform solution (figure 1), users are enabled to manage every detail of their data and have the ability to query the system and see who has had access to user's data and why. Having privacy policies that allow other people to access user's data through third party applications gives her all the power she needs to properly manage the data.

### Secure In-Transit Data

Connecting apps and devices to PHR data becomes easy with the Healthcare Trustworthy Platform. Giving a doctor the permission to check your blood pressure trends or asking a friend to share his data is done in a secure way since every single piece of data will be sent in an encrypted form to increase security of sensitive private data.

### Legal Compliances

PHR data can contain clinical i.e. Electronic Health Record (EHR) data. Although the patient is in full control, there are legal rules regarding handling this data. For instance it may not be allowed to

delete this data at any time. The Healthcare Trustworthy Platform will ensure legal compliance by enforcing these rules.

Moreover, EHR data is managed and controlled in such a way that it is stored in the user's country of residence.

### Trusted Audits and Log

If a user thinks that an app, or another user, is misusing the data that the user gave access to, that user has the ability to query the Log-as-a-Service functionality that provides a trusted overview of all the access to the data. The Trusted Log cannot be compromised without noticing it. Assurance is performed programmatically and an attacker has no chances to conceal his footsteps.

### Security on Commodity Clouds

The Healthcare Trustworthy Platform uses a resilient storage feature to store data on commodity clouds (untrusted by nature) in a secure way via fragmentation and encryption of the data.

### Secure Data Storage

Every activity of the Healthcare Trustworthy Platform is encrypted, as well as every single piece of user's data. This ensures that no one (not even the cloud owner) can have access to and exploit the user's data.

## Where To Find Healthcare Trustworthy Platform?

<http://tclouds.eservices4life.org:8080>

## Further Information

Further information about the Healthcare Trustworthy Platform can be found under Deliverable „D3.1.3—Draft proof of concept for home healthcare“.

## Disclaimer

The TClouds project has received funding from the European Union's Seventh Framework Programme (FP7/2007-2013) under grant agreement number ICT-257243.

## TClouds at a glance

**Project number:**  
257243

### TClouds mission:

- Develop an advanced cloud infrastructure that delivers computing and storage with a new level of security, privacy, and resilience.
- Change the perceptions of cloud computing by demonstrating the prototype infrastructure in socially significant application areas.

**Project start:**  
01.10.2010

**Project duration:**  
3 years

**Total costs:**  
EUR 10.536.129

**EC contribution:**  
EUR 7.500.000

**Consortium:**  
14 partners from 7 different countries.

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