Personalised monitoring application

A data management platform that can be easily adapted to the specific needs of different projects

Many e-health services require a system for managing personal data that is flexible and upgradable, with the possibility of sharing the data among different users.

To address this need, MEDES has undertaken the development of a generic data-management platform, whose parameters can be extended and configured to adapt them to the specific needs of a project.

Transferability

The reference platform is based entirely on industrial technology and open-source standards. This guarantees the sustainability of the technical solution and its independence with regard to specific solutions (software editing suite, technical platform). It abides by non-proprietary standards. For specific projects it can be used to combine open-source and commercial components.

These traces guarantee the user complete freedom for total or partial transfer, without licence or sub-licence transfer issues, nor any hidden or recurrent costs.
Upgradability

The platform addresses the two major issues that arise when projects change: modifications to the structure of data and either the development of new technical features or upgrades to existing components.

* Changes to data structure
* The storage of data in semi-structured format means that data already on the platform can survive changes to data structure, thus avoiding the rigidity of the data model imposed by traditional SQL relational databases.
* Data can therefore be stored in whatever format best suits project needs, and will adapt accordingly.

* Technical upgrades
* The platform includes a feature for deploying new modules or hot replacement of existing modules, without any interruption to service.

Flexibility

The platform has the possibility of configuring the main features of an information system for e-health such as data collection, treatment pathways, security measures and external interfaces.

Managing personal data

The platform includes the security functions required for e-health projects. User projects can be hosted by a health-data hosting specialist, Midi Picardie Informatique Hospitalière (MIPIH), to guarantee compliance with regulatory provisions regarding personal health data.

Overview

The platform has a fully modular architecture, with different features being added as separate modules. Each new module can use the services offered by existing modules, thus enriching the entire system.

The platform includes a set of so-called generic modules, common to all projects, as standard:
* A content management function enabling users to create or modify information pages via a simple Web interface, with no need for special technical knowledge.  

This feature is currently under development.

* A communication module providing support for data exchanges with other terminals. Different methods of communication are supported, such as the HTTP protocol, via Web services, or data communication via SMS.

* A workflow manager, to track the sequence of operations necessary to accomplish a given task, or track an element that is part of a project (a person, a document, etc.). A project can define several types of workflow, and link a specific flow to a particular professional function.

This feature is currently under development.

* A storage module to ensure the persistence of data, providing data mining services, and the calculation of aggregated values. It is based on a database management system for semi-structured data, imposing no constraint on the format or type of the data stored. It supports two types of database: databases compliant with the RDF standard, and NoSQL document-oriented databases.

* A semantic Resource Description Framework (RDF) database, in which the meaning of a data item is stored at the same time as its actual value, thus facilitating the exchange of data with other systems, and enabling correlation with other RDF databases.

* A NoSQL document-oriented database, which offers high-performance, even with large volumes of documents or a great number of simultaneous users.

To these standard modules can be added additional modules, specific to each project, to enhance the generic functions.