

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.