



[Website](#) 

[Consortium](#) 

[Objectives](#) 

[Deliverables](#) 

[Co-funded by the EU](#)

- Criteria for open platform in AHA and AAL domains which REACH2020 platform complies with:**
- Open Source
  - Open Standards Based
  - Federatable
  - Shared Common Information Models
  - Vendor and Technology Neutral
  - Supports Open Data
  - Provides Open APIs
  - Open Usage (adoptability)
  - Open Adaptation

**REACH Smart Furniture Demo - MiniArc & SilverArc**



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## Business Overview

The Reach2020 platform is co-funded by the H2020 EU program. The project total cost was € 6. 078.657,50 (with an EU funding contribution of € 4.588.315). The consortium is composed of 18 partners that collaborated in the development of the platform and its services. One of the partners of the consortium, among others, is Philips, which integrated its HealthSuite Digital Platform (HSDP) with the Reach2020 platform planned for patent protection. The rest of the consortium is represented by: Technical University of Munich, Germany; Technical University of Eindhoven, The Netherlands; École Polytechnique Fédérale of Lausanne, Switzerland; Technical University of Denmark; University of Copenhagen, Denmark; Fraunhofer, Germany; Lyngby Taarbæk Kommune, Copenhagen, Denmark; Schön Klinik, Bad Aibling, Germany; HUG, Switzerland, Geneva; Zuidzorg, Eindhoven, The Netherlands; Biozoon, GmbH, Food Innovations, Bremerhaven, Germany; Sturrm, Business Modeling & Strategic Planning, Eindhoven, The Netherlands; Smart Cardia, Wearables, Software & Technology, Switzerland; Alreh Medical, Rehabilitation Equipment, Poland; Arjo, Rehabilitation Equipment, Sweden and DIN, Standardization, Germany.

The Reach2020 business model is developed based on four use case settings (SK, HUG, ZZ, and Lyngby), with the attempt of defining an initial business strategy and vision of deploying the platform and making use of in each of the four use case countries, from the testbed level to the specific market conditions on the national level, and evolving later to the overall Reach2020 business model at the EU level. The Reach2020 platform value proposition advances around five main touchpoints: personal mobility device, active environment, socializing and nutritional monitoring, gaming and training, and finally wearables.

The stakeholder model concentrates on the older people as end users. Other stakeholders considered are caregivers and clinics or institutions they work for. Distinctively different is the role of the app/platform in the contexts. Where in the rehab clinic the app is the gateway for cooks, caregivers and nutrition experts towards the elderly user and groups of users to ask for help preparing food and monitor food intake, the app is an additional component in the home context for users to contact one another and share recipes or inspiration on food.

Reach2020 is currently preparing the formation of a "REACH Active Ageing GmbH" which will serve beyond the project as an integrator of REACH partner's individual products and services and a solution provider to above named market segments. Key assets of its business model at national levels are the collected data through the sensing system and developed data analytics algorithms aimed for the analysis of the aggregated information.

The project total costs amounted for € 6.078.657,50 (with an EU funding contribution of € 4.588.315). The generation of revenue is based upon a fee paid per user or by the (local) government, insurance companies or clinics and institutions. Due to the health improvements the service guarantees back money that would otherwise be spent in the health sector. Furthermore, the platform will generate revenue by distilling insights from data collected and monetizing this data to third party developers in the health, food and nutrition industries. The platform is therefore open to further development and plugins by third parties to enhance the overall PSS. However, since the needs for using the different functionalities of the platform touchpoint and engine concept can grow in the process of aging, the Reach2020 business model supports personalized on-demand usage instead of offering all functions at the same time. Therefore, both the system architecture and the business model need to be modularized according to the different stakeholder network configurations and reimbursement mechanisms in the national markets.

[Learn more about REACH2020](#)

## Technical Overview

The Reach2020 platform is defined as a Product-Service-System (PSS). The “Touchpoints and Engine concept” structures the envisioned Reach2020 PSS architecture that integrates the different Personalised Intelligent Interior Units (PI<sup>2</sup>Us), which are defined as a set of smart modular furniture elements that serve as physical carrier elements of Reach2020 functionality. It includes different devices such as pressure mattress, thermal camera, ECG sensors, activity monitoring sensors (wearables).

The platform defines five “Touchpoints” that address different scenarios:

1. Touchpoint 1: Personal Mobility Device
2. Touchpoint 2: Active Environment
3. Touchpoint 3: Socializing & Nutritional Monitoring + Intervention
4. Touchpoint 4: Gaming & Training
5. Touchpoint 5: Wearables

On the *Physical layer*, Reach2020 provides connection with devices including ambient sensors, pressure mattress, thermal camera, ECG sensors, activity monitoring sensors (wearables) as well as other devices defined in the PI<sup>2</sup>Us. Touchpoint is modular in itself, also serving as a kind of physical product platform.

The services of the *Service layer* are offered through the different Touchpoints in a modular way. The Touchpoints serve as data gathering scenarios through different devices (PI<sup>2</sup>Us) as well as mediator of services and interventions coordinated by the Engine towards the end user. Each Touchpoint is made up of several subsystems which allow to adapt the system both for a certain person or setting as well as over time.

Regarding the *Application layer*, Reach2020 platform offers the information through the following visualization tools: TV / Kinect interface, Data Dashboard (Philips), Ubiquitous large scale touch surface for gesture interaction, Interface for food intake app, Interface for food advice app, and “Nudging tablet”. Reach2020 offers applications for mobilization and rehabilitation, physical activity, training, food and nutrition, mobility, and patient motivation. The platform also offers user management, authentication, communication and personalization.

There is no *Semantic layer*.

Interoperability is achieved by supporting a wide set of interoperability standards. The platform provides cross compatibility protocols to integrate with a variety of third

party platforms, including Health Suite Digital Platform (HSDP) by Philips, and supports several interoperability standards ([more info can be found here](#)).

In terms of information security, it allows secured access and control to devices. It supports data privacy tools, including pseudonymization, secure database mechanisms with access log, approval strategies for collection of non-invasive lifestyle data.

[Learn more about REACH2020](#)



## Contextual Overview

Reach2020 is a platform developed in Europe, co-funded under the H2020 EU project with the same name.

The REACH project aimed to develop a service system that turn clinical and care environments into personalisable modular sensing, prevention, and intervention systems that encourage older adults to become healthy via activity (physical, cognitive, mobility, personalized food, etc.).

The project abbreviation stands for Responsive Engagement of the Elderly Promoting Activity and Customized Healthcare. The proposal for this project was developed in 2015 and submitted under pillar 3 of H2020 in societal challenge 1 Personalized Healthcare (PHC).

In the European consortium with 17 partners from higher education institutions and industry, the four EuroTech Universities along with the industry partners (including leading European health care technology, rehabilitation, and care and hospital firms) build the core of this project, with a total grant amounts around 6 Million Euros.

Although it collects Personal Health Data & History, Personal Feedback Data, there are no open datasets coming from the platform. All data is kept in internal repositories. In particular, when data sets shall be shared beyond the Consortium or published, each Consortium member will, as per Consortium Agreement, have the right to double check whether the stated set considered for publishing/sharing may lead to any conflict in the context of planned patent filing.

The Consortium is now seeking for patent protection. The Reach2020 platform is partially based on Open Source Platforms, with some elements closed and proprietary services such as those provided through the Health Suite Digital Platform (HSDP) by Philips.

[Learn more about REACH2020](#)

## Prototyping



REACH Smart Furniture Demo - M...



MiranaBot, a voice user interface ...



Engaging Older Adults With Tech...



REACH covered by Dutch radio an...

