



## News from the REACTION project

Stay abreast with developments in closed-loop diabetes monitoring

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### Initial architecture of the REACTION platform and its components

**To evaluate the first year of the REACTION project and plan for the next 6 months, project partners met for the third REACTION Project Board Meeting on 21-23 March 2011, organised by partner IMM on their premises in Mainz.**

Partners presented and discussed the technical and scientific progress made which has resulted in the definition of an initial architecture for the REACTION platform. Initial prototypes and demonstrators were presented, including a concept demonstrator for the primary care scenario, showing how devices monitor different parameters, e.g. weight or blood pressure, and immediately transmit the results to a server and, if necessary, on to a health professional. For the in-hospital scenario, a demo tablet was shown with functions for blood glucose management, including clinical decision support and with connection to the existing hospital system.

To ensure that the further development of the platform and prototypes fits clinical practice, clinical partners went through the necessary requirements for diabetes management in primary care and in-hospital care. In primary care, the focus is on preventing or delaying the typical progression of the disease and the comorbidities as a starting point for managing the disease, supporting the patient and thus preventing further complications. This calls for functions such as patient education, feedback to patients and support, dietary advice and connectivity to the Electronic Patient Record. For diabetes care in the hospital, it is a matter of keeping blood glucose levels within a certain range to prevent hyperglycaemia and hypoglycaemia. To accomplish this, it is essential that the staff is trained in the fundamentals of glucose control. The current functions of the in-hospital prototype include patient information, insulin dose, blood glucose profile, administered insulin and therapy measures but will also have to accommodate workflow management.

The activities for the next months will deal with further developments of the prototypes based on updated user requirements which emerge from clinical workshops and experience.

A great deal of work has been done since the partners last met, some of which is described in the deliverables created and submitted during the last six months. These cover disease management strategies and risk assessment tools, safety issues in REACTION applications, health care economics and reimbursements, validation framework and many more. The list can be viewed on the project website and the public deliverables downloaded.

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### In other news

#### Future Dissemination Events:

##### eHealth week 2011

10-13 May 2011, Budapest, Hungary  
The event combines the European Commission's High Level Ministerial Conference and the World of Health IT Conference & Exhibition.

##### eHealth 2011 2011

26-27 May 2011, Vienna, Austria  
The aim of the conference aim is to build a bridge between research and application of information and communication technology in health care.

#### New Project Deliverables Released:

The following deliverables have been completed:

- D1.4.1 Periodic activity, management and financial reports Y1 (Confidential)
- D2.7 Validation framework (Public)
- D3.2.1 First generation ePatch, Report on integration results (Restricted)
- D3.10 Survey of commercially available CGM and insulin pump (Public)
- D4.4.1 1st Prototypes of data, context and event handling (Restricted)
- D5.3.1 Network Management subsystem & internal development (Restricted)
- D6.1 Disease management strategies & risk assessment tools (Public)
- D9.4 Healthcare economics and reimbursements (Public)

Public deliverables can be downloaded from the project's website after they have been reviewed and approved by the EC:  
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[www.reaction-project.eu](http://www.reaction-project.eu)

## The future has many faces

**To create a vision for future diabetes care using the REACTION platform, REACTION invited experts from the healthcare domain and the ICT field to participate in a one day scenario workshop in England. The focus was on the uncertainties of disease management in the future.**

Bernard Grossmann receives two messages on his smart device, one reminding him to change his body sensor and one inviting him to step onto the electronic scale. Bernhard's body sensor continuously monitors his blood pressure and blood sugar and wearing it has become second nature to him.

The example is taken from one of the four scenarios which were made in response to the question: How do we perform chronic disease management and therapy using intelligent networked medical devices in 2020 and beyond? The aim of the scenario workshop was to envision how the REACTION project could improve remote monitoring of diabetes and, in the long term, support new care models and future clinical workflows. The experts were asked to discuss possible influences on chronic disease management based on a list of environmental factors and the result was four plausible futures centred on opposing elements: Proactive care versus conservative care and cost-focused care versus patient-focused care

### **Mastering the uncertainties of the future**

Scenario thinking is a method of providing plausible futures built on the imagined interaction of key trends in society. It is a useful method for identifying important technological, security, socioeconomic and business drivers that will shape the requirements of the future. Scenario thinking does not predict the future. Instead it is built around the uncertainties of the future and the development of new skills that enable us to ask the right questions and look for missing pieces to the puzzle; to spot unique opportunities and resolve the uncertainties. This process will help determine the best way forward.

### **Four plausible futures**

After a complex process of mapping, manipulating and rearranging thoughts, REACTION has developed four scenarios which are equally likely to happen. Mixed with healthcare trends, they focus on opposing elements: A proactive healthcare system where prediction, prevention and integrated healthcare are key factors and where patients are actively engaged in defining their own care versus a conservative healthcare system which fails to adapt to patients' individual health needs and problems. When it comes to focus on resources, the conflict is between a patient-focused and publicly funded healthcare where financial incentives are optimised and used to promote healthy living and where ICT plays an important part and a cost-focused situation characterised by cost effectiveness, privately funded healthcare and a lack of support.

"The purpose of the workshop is to establish long-term requirements, which support a full scale future diabetes care model. In this future care model, we believe inclusion and empowerment of the patient must be an essential part. The scenarios will be used to investigate the consequences of new technologies in terms of security and trust and it will serve as a model for deriving user validation frameworks," says Jesper Thestrup from IN-JeT ApS, who has led the workshop together with other partner representatives from Chorleywood Health Centre and FORTH-ICS. The workshop took place at the beginning of the project, April 2010.

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The REACTION project is a 4-year project started in 2010. It is partly funded by the European Commission under the 7th Framework Programme in the area of Personal Health Systems under Grant Agreement no. 248590

Read more at:  
[www.reaction-project.eu](http://www.reaction-project.eu)

You're receiving this newsletter because you have been in contact with one or more of the REACTION partners.

We thought you might be interested in following the progress of the project.

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