

1 Upcoming Events

World Diabetes Day 4th November 2009

We are proud to announce that METABO will take part in the events organized in Madrid for the World Diabetes Day next 14th November and that the official presentation of METABO Project will be held a few days earlier in November 10th.

The World Diabetes Day is a campaign that features a new theme chosen by the International Diabetes Federation each year to address issues facing the global diabetes community. **"Diabetes Education and Prevention"** is the World Diabetes Day theme for the period 2009-2013. The campaign slogan for 2009 is **"Understand Diabetes and Take Control"**, a subject that has a straight relation with METABO concept and objectives.

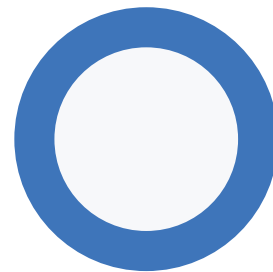
METABO Official Presentation 10th November 2009

Why should METABO have an official presentation?

It is important to let know the general audiences and the scientific and research groups about the existence of a project devoted to the Diabetes disease management improvement in order to:



Welcome to the first METABO internal Newsletter! This Newsletter is addressed to all Partners in the consortium and summarizes the current status of the project and all the progress achieved in the different areas of METABO. **This newsletter is not intended to be used for general communication and its content is confidential.**



world diabetes day
www.worlddiabetesday.org

- Attract the attention of the responsible authorities on the interest and investment of the European Commission in the care of chronic diseases and, in particular, Diabetes Mellitus.
- Attract the attention of the scientific circles and diabetes key opinion leaders towards this project looking for their feedback and for the scientific and clinical impact that METABO intends to attain.

- Let other research groups and companies know about METABO and open an opportunity to get in touch with other similar projects for possible collaborations.

Why this date?

During the first Annual Technical Review of METABO, the consortium committed itself to organize an official presentation of the project within the second reporting period. On top of this, the World Diabetes Day is a unique and the most optimal platform that METABO can use to catch the attention of authorities, media and all people implicated in the diabetes care: patients, professionals, families, etc.

The date chosen for this event has been November 10th, as it is a date that will allow METABO to enjoy all the interest stirred up for the preparation of the World Diabetes Day in the aforementioned sectors.

How is it being organized?

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SPs + Integration Meeting 9-10 Septembre 2009

Next days September 9th, 10th and 11th, 16 partners will attend the SP meeting and workshops organized in Madrid.

The objective of this meeting is to **close the definition of all the modules that will be integrated on the Control Panel and the PMD**. In the other hand, the final architect ures for SP1, SP2 and SP3 will be presented, in order to draw the overall METABO architecture (SP4).

The meeting has been divided in three main objectives rather than separate SP blocks: Day 1 will be devoted to the scientific inputs, day 2 to the technical discussions and several workshops will take place during day 3:

Day 1

SCIENTIFIC INPUT

The objective of Day 1 is to close the definition of all the modules that will be integrated in the Control Panel and the PMD and to define the interaction among them in terms of data exchanged and settings. For this it is strongly needed the collaboration of the clinical partners.

EXPECTED OUTCOME

Document/Table collecting all the results as an input for technical partners

PRELIMINAR WORK NEEDED

- Templates for the tables to be filled (**Medtronic**)
- Revision of all the concepts and developments (**Clinical Partners**)

- Based on Use Cases and Data Entities, prepare questions/material on possible medical issues that Clinical Partners could address
(**Technical Partners**)

Day 2 and 3

TECHNICAL INPUT

For SP1, SP2 and SP3 the objective is to present the final architecture of each of them and based on this, draw the overall METABO architecture (WP4.1) and define the action plan for all remaining developments

EXPECTED OUTCOME

Architectures clearly broken down in terms of:

- Modules
- Data Flows and Entities

Table/Document detailing action plan, responsibilities and deadlines

Use Cases Analysis (Especially WP4.1)

PRELIMINAR WORK NEEDED

- Presentation of the Current Status, Open Issues
(**UPM**)
- Real Architectures updated to the current status
(**SP1-3 + WP4.1 leaders**)
- Technical Strategies already defined for SP1, SP2 and SP3
(**SP leaders**)

Respecting SP4, due to several problems with the devices data acquisition, an architecture redefinition took place within WP.1.3 introducing an UMPC, which will acquire all the data from the different sensors and synchronize with the PMD. Consequently a new discussion with Integration Partners will be needed, in order to specify communication layers and new needs.

NUMBER	COMPANY NAME	PARTICIPANT'S NAME
1	MEDTRONIC	Javier Colás Alejandra Guillén
2	IDS	Stanislav Kučný Lukáš Plachý
5	MICRODATA	John Maglaras
6	UOP	Vasilis Protopapas
8	FERRARI	Alessandro Ragnoni Amedeo Visconti
10	DDS	Konstantinos Vasiliadis
11	ORT	Giusy Fiucci Francois Mohier
12	UK	Jan Vejvalka
13	PRM	Diego Ardigó
14	HCSC	Patricia Martín Natalia Pérez
15	SWORD	Maria Franzi
16	R & S	Elena Martinelli Giulia Falasca
17	WM	Marco Pignoni Alessandro Fried
18	UPM	Giuseppe Fico Alessio Fioravanti Teresa Arredondo
19	AUSLM	Giampiero Pirini
20	UPVLC	José Antonio Morgado Teresa Meneu
22	SATE	Jacopo Biancat Attilio Brighenti

2 METABO project updates

In this internal Newsletter you will find the progress and the current state of the different WP in METABO. The METABO project aims to develop a comprehensive monitoring platform for continuous control and management of the metabolic status of patients with metabolic disorders, normally diabetes. In this framework the human-system interaction is one of the most important aspects to be taken into account.

Human interaction takes place from two sides, Patients and Professionals, in the three main applications in METABO: PMD, Control Panel and On-Board platform.

PMD application

From the Patient side, several modules from SP1 are working on the development of the different devices and user application, the PMD development.

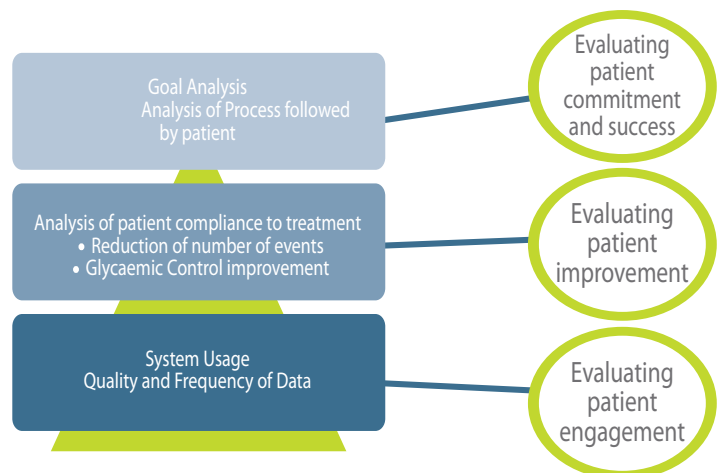
A new **PMD application** interaction design, enriched with the feedback coming from the patients' interviews done in May 2009 by Medtronic, has been presented. This design has focused on accessibility rules and tries to simplify and reduce the patient-system interaction. Keeping all the functionalities defined within METABO in WP1.1 and WP1.4, this first proposal for the interaction design of the application clearly separates the two main elements of action in the application:

- Data Input
- Data Visualization

In this way it is possible to keep common elements together and to build a reduced type of screens, which facilitates to make the user Interface simple and intuitive. Early in August 09 this first version was prepared and presented based on the screen flows developed for each of the modules comprised in the application. During the month of September this mock up will be refined including Look&Feel design and the first feedback coming from WP1.4 partners.

It is expected that an improved mock up will be ready in October to have the first validation interviews with patients in all centers involved in METABO.

The next steps for the completion of the PMD application are related to the personalization of feedback, definition of recommendations, alerts and education messages and the overall motivation program, as well as feedback coming from the on-board platform.



With respect to the PMD selection, the **TOSHIBA TG01** has been identified as the most suitable candidate, given the new technical requirements derived from the inclusion of the UMPC in the architecture. It covers all the specification requirements, adding important features such as a 4,1 inches touch screen. You can find the complete specifications and a demo on the Toshiba website:

<https://www.toshibaeurope.com/mobilerevolution/default.aspx>

Processor chipset and screen specifications even higher than the new iPhone 3G S (see picture), have been definitive reasons for this choice.



Control Panel

With regard to the second endstream, Professionals, the Control Panel is being developed. Partners are working on the application functionalities, User Interface (GUI), and the Dynamic care pathways engine improvement.

Both the PMD and the Control Panel applications are being developed taking into account feedback from patients and medical key opinion leaders. This feedback is really important and useful in order to optimize appearance, usability and better define functionalities.

On Board Monitoring Platform

The integrated monitoring vehicle/driver subsystem. W.P. 1.2 and 2.2, expected for September 2009 is almost completed. Tests with different users have been completed, and primary results have allowed to extract the first conclusions, e.g.: Heartate seems to be correlated with the speed of the vehicle or skin resistivity seems to increase when driving. Future pilot tests with patients and an important variety of users will support this type of conclusions and reinforce them.

The final architecture of the OBMP uses the Samsung Q1 ultra mobile PC(UMPC), to gather, process and present data from the monitoring system (cameras, ECG sensor, GPS, etc..). The Q1 will communicate with the PMD in order to synchronize data, being this data exchange definition one of the objectives from the next Workshop on 9th September.

3 Pilot Strategy

Together with software development, the METABO project includes a significant pilot activity with the aim of pursuing a complete technical and scientific validation of the concept and the platform.

A three-phase validation strategy was conceived with this aim. Delineating the strategy content from a scientific/medical point of view, phase 1 is the stage in which the data needed to train, enrich and develop all the METABO platform is collected (in this phase IT development runs in parallel with scientific development) and phase 2 is the stage in which the platform will be already available and working and will be used for clinical and technical validation. In between, phase 1.5 will deal with the full technical validation to test short term effectiveness and usability and to receive feedback from users.

The first Pilot from Phase 1 began on 15 May in Paris with two patients and it will continue in the rest of clinics by mid September. All the other centers are applying for the Medical Ethical Committee approval.



So far, HCSC (Madrid) protocol has already been accepted by its MEC. AUSLM has also submitted the documentation to their local MEC and they are waiting for a response.

The chart bellow indicates all details related to the METABO centers implicated in the clinical pilots:

PILOT CENTER	HOSPITAL	DEPARTMENT	NAME OF THE HEAD OF THE DEPT. / CLINIC	NAME OF THE RESPONSIBLE MD FOR THE PILOT	STARTING DATE OF PHASE 1.1
Universita degli studi di Parma	Universita degli studi di Parma	Endocrinology	Dr. Ivana Zagarese	Dr. Diego Ardigó	End of September
ORT France	Centre de Santé Elio Habib - OSE		Dr. Marc Cohen	Dr. Marc Cohen	End of September
SERMAS	Hospital Clínico San Carlos	Endocrinology	Dr. Alfonso Calle	Dr. Alfonso Calle	End of September
UK	2. Lékařská fakulta / FN Motol	Interní klinika	Prof. Milan Kvapil	Dr. Erik Hollay	End of September
AUSLM (Clinical Pathway)	Ospedale di Capri	Endocrinology	Dr. Ciardullo	Dr. Ciardullo	End of September
AUSLM (Clinical Pathway)	Ospedale Estense di Modena	Endocrinology	Dr. Baldini	Dr. Diazzi	End of September
AUSLM (in - car)	Nuovo Ospedale Civile Estense di Baggiovara	Neurology	Dr. Nichelli	Dr. Benuzzi	End of September

4 Metabo 2nd Review

The 2nd Annual technical Review will take place next 17th -18th February 2010.

The consortium must bear in mind that functional application demos must be ready for this date and, in order to have a successful review, not only all work scheduled for this second period must be completed, but it is also necessary to start planning presentations and participation during these days.

It is very important to take into account that a Certification on the financial statement and methodology from different partners is required from the EC. Keep in mind that all partners with a

declared budget within this 2 first periods, higher than 350.000€ should pass a financial audir. In order to include it in the 2nd year PMR those partners should send the results before the review date.

5 New Web!

The new METABO website release has been prepared. These are some screenshot from the new look&feel. The contents have also been updated according to the new definitions of the project and **ALL partners** are requested to revise them and collaborate in the preparation of news and other relevant material that should be added along the life of the project.

You can visit the entire website in the following address: www.metabo-eu.org

January 2008 - June 2011

metabo

Controlling Chronic Diseases related to Metabolic Disorders

HOME METABO PROJECT TECHNICAL APPROACH CONSORTIUM COMMUNICATION ROOM

Technical Approach > Project Structure

- ▼ Project Structure
- ▶ On-Board Platform
- ▶ Milestones

PROJECT STRUCTURE

The overall implementation strategy for the METABO platform and environment relies on the interrelated development of four main sub-projects or streamlines (SP):

SP1 COMPREHENSIVE MONITORING	SP2 PATIENT'S METABOLIC SIMULATION AND MODELING	SP3 PERSONALIZATION OF HEALTHCARE	SP4 INTEGRATED METABO PLATFORM
<ul style="list-style-type: none"> WP1.1 SP1 User Req. and System Specifications WP1.2 Environmental Monitoring WP1.3 Wearable Monitoring Middleware WP1.4 Lifestyle and Medication Monitoring WP1.5 Patient Feedback 	<ul style="list-style-type: none"> WP2.1 SP2 User Req. and System Specifications WP2.2 Modeling Strategy and Algorithms WP2.3 Model Presentation and Simulation 	<ul style="list-style-type: none"> WP3.1 SP3 User Req. and System Specifications WP3.2 Data Mining and Knowledge Extraction WP3.3 Personalized Care Process 	<ul style="list-style-type: none"> WP4.1 METABO Platform Integration WP4.2 Pilots Experience and Validation

SUPPORTING WORKPACKAGES

- WP5 Project Management
- WP6 Dissemination and Communication
- WP7 Societal, Organ, Legal and ETHICAL Issues
- WP8 Market Analysis and Business Strategy

6 Metabo Video

Medtronic communication and dissemination group is developing a METABO video, trying to present the METABO main ideas to the public. It will present what METABO project is, some scenarios that compile the project application, and the main objectives that are expected to be achieved. The video is expected to be launched within the METABO official presentation. It will be shown through all possible media, such as the website.

7 Metabo in order research/related projects

In thiMETABO attended pHealth09 conference in Oslo. Contacts with two diabetes related projects were made. One of them is coordinated by the Norwegian Center of Telemedicine (University Hospital of North Norway, Tromsø) and the other one by the University of technology in Sidney (if you want to check the second one: www.PersonalHealthMonitor.net)

The project from Tromsø has a very different approach to the monitoring system and the PMD application than METABO, since their applications are very simple and much less demanding for the patient than the ones in METABO. They already made some pilots with 12 users and are planning to do some more, this could be a great opportunity to share the patient feedback from both projects and get a better input on the patient user experience from both systems.

For the Australian project, the possible collaborations are aligned with the previous one, even if their monitoring system is not dedicated for diabetic patients but for any chronic patient.

The coordination team is currently discussing the nature of these collaborations with the responsible persons for each of these projects and any suggestions from partners are welcome. More information on this subject will be released as soon as possible.

7 Let's all collaborate together

The communication and dissemination activities are a very important part of the success of the METABO project. All partners should be involved in the preparation of articles, papers, posters and any other sort of material as the developments and results of the project allow us to have this sort of publications.

The number of releases in METABO by now is quite reduced, since the activity has been

more devoted to the project definition than to the developments themselves. Now that the developments are starting, new releases are expected in all fields.

For the preparation of external release newsletters, it is also needed to receive from all partners the news and texts that they would like to publish and disseminate so that no area in the project is diminished.

8 Links

METABO website:

www.metabo-eu.org

Other related projects

<http://www.metabo-eu.org/relevant-links/related-projects>

Cordis:

<http://cordis.europa.eu/fp7/ict>

American Diabetes Association:

<http://www.diabetes.org/home.jsp>

International Diabetes Federation:

<http://www.idf.org/>

European Association for the study of Diabetes:

<http://www.easd.org/#welcome.html>

Metabo Consortium List

21 Partners from 9 EU member states (E, I, D, F, GR, FIN, CZ, L, MT)

Project Coordinator

MEDTRONIC – Spain
www.medtronic.com



Industrial Technology Partners

FERRARI – Italy
www.ferrariworld.com



SATE – Italy
www.sate-italy.com



MEGA – Finland
www.megaemg.com



Industrial IT Partners

IDS – Czech Republic
www.ids-scheer.cz



MICRODATA – Greece
www.microdata.com.gr



DDS – Greece
www.ddsenergy.gr



WORD – Luxembourg
www.sword-group.com



R&S INFO – Italy
www.rsinfo.it



Worldmatch – Malta
www.wmsoft.com



Healthcare Organization Partners

AUSLM (Regional Health Agency Italy)
www.ausl.mo.it

Training organization Partners

ORT France – France
www.ortinnovation.com



Diabetes Clinical Partners

SERMAS - Madrid – Spain
www.hcsc.es



Charles University – Czech Republic
www.lf2.cuni.cz



University of Parma – Italy
www.unipr.it



Technical University Partners

University of KUOPIO – Finland
bsamig.uku.fi



University of Patras – Greece
www.upatras.gr



University of Augsburg – Germany
mm-werkstatt.informatik.uni-augsburg.de



Polytechnic University of Madrid – Spain
www.upm.es



UPVLC – ITACA – Spain
www.upv.es



ICCS-NTUA
Institute of Communication and Computer Systems of National Technical University of Athens – Greece
www.image.ece.ntua.gr

