



SENSE-PARK

Deliverable D3.2:

Presentation of interface / interface navigation solutions which can be used for the scenario-based study

Deliverable D3.6:

Presentation of a user-friendly interface for the doctor



SENSE-PARK**FP7-INFSo-ICT-288557**

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Acronyms

DoW	Description of Work
WP	Work package
PwP	Person with Parkinson's

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1. Introduction

This document explains **Deliverables D3.2** and **D3.6**. These deliverables are a prototype of the SENSE-PARK software and this document gives some further information about the software and the process how the interface was designed.

The aim of this project is to measure relevant symptoms of Parkinson's Disease and present these measurements to People with Parkinson's (PwP). The system consists of sensors measuring the data, and PC software that is used to transfer and display the results, but also to perform additional cognitive tests that can also show useful results to PwP.

These deliverables are the same software prototype that was created in WP6, however the focus in WP3 was to design and test the interface for this software using an iterative process that ensures the interface is userfriendly and useful for PwPs and the doctors. This document describes the SENSE-PARK software prototype and gives further details about the process used to design and test the interface.

1.1. Relevance of deliverable for project

This deliverable presents the software that can be used for the scenario-based study in year 3 of the project. It is a result of the work carried out in Task T3.2 and Task 3.5, in close cooperation with WP6.

1.2. Integration with the text of the DoW

WP3 – Designing friendly and useful interfaces for PwP's and the doctors

Duration: M1 – M36

Lead beneficiary: 6 (AbilityNet)

Objective 2.

To lead and consult the interactive process of refinement of interface prototypes between PwP's and developers.

Task 3.2.: Lead and consult the interactive process of refinement of interface prototypes (AbilityNet, CPT, Hasomed)

After interface prototypes have been generated by WP6 AbilityNet will assess their accessibility and compatibility with likely adaptive hardware and software. Then, it will lead an interactive process between PwP's and the interface developer to refine the interface design, i.e. to make it adaptable to diverse requirements of patients as learned from results of objective 1 [*in year 1*], but will also bring continuously in aggregated experience in the field of interface / interface navigation adaptation. It is the ultimate goal to end up with interfaces and interface navigations with adequate and intelligent interaction capabilities with the user but adaptable to all disease stages, to ensure a gain of knowledge about individual solutions.

Duration: Month 13 – Month24

Effort: 12 PM

Deliverable D3.2 –

Presentation of interface / interface navigation solutions which can be used for the scenario-based study

Delivery date: Month 24

Objective 5.

To develop a user-friendly interface for the doctor.

Task 3.5.: Develop a user-friendly interface for the doctor (AbilityNet, Hasomed, EKUT)

AbilityNet will supply the necessary usability and accessibility expertise for the development of an intuitive and user-friendly interface for the doctor, which will be implemented by Hasomed and NCT which both have experience with telemedicine and interfaces for clinicians.

Duration: Month 13 – Month 24

Effort: 5 PM

Deliverable D3.6 –

Presentation of a user-friendly interface for the doctor

Delivery date: Month 24

Milestone MS6 –**Interface/interface navigation solutions which can be used for the scenario-based study**

Interface solution(s) selected; Enables integration into the SENSE-PARK system.

Delivery date: Month 24

2. Process

In year 1 of the project we investigated the requirements PwP's have in regards to the software interface, and this resulted in deliverable D3.1. These requirements were taken as a basis to develop the software and the software interface for the SENSE-PARK system in year 2.

The software was developed in close cooperation with PwPs in an iterative process:

The first software prototype was created based on the report of year 1 and previous experience of Hasomed in the field of medical software (WP6). AbilityNet then assessed the accessibility and compatibility with likely adaptive hardware and software and feedback was reported back to Hasomed where changes and improvements were made. Then, an interactive process was followed in which new prototype versions of the software were tested by PwPs and feedback was reported back to the interface developers in order to create new and improved versions of the software. This process allowed to refine the interface design, i.e. to make it adaptable to diverse requirements of patients. Ultimately this process ended up with interfaces and interface navigations with adequate and intelligent interaction capabilities with the user but adaptable to all disease stages, to ensure a gain of knowledge about individual solutions.

Testing with focus groups of various size

Apart from the testing of the software for accessibility and compatibility with Assistive Technologies the main focus was on making sure the software interface is usable and useful for PwPs. This was done in several phases of testing the interface. Initially several phases of testing the complete SENSE-PARK system were planned, however development of parts of the software required to interpret the sensor data were delayed so instead different parts of the system were tested separately. Techniques used for testing included small and large focus group meetings where PwPs were shown parts of the system as well as design ideas, and they could comment on existing parts, suggest alternatives or pick between different options shown to them. Testing was also done remotely via Skype conference, in particular at early stages where quick feedback was required. In later stages of development where more functionality was available then PwPs were also given disks and asked if they are able to install and use the software without assistance, which yielded and further feedback that was very valuable.

Feedback was prioritized and the most important changes implemented, with further changes planned to be implemented at a later stage.

Interface for doctors

It was decided to integrate the interface for doctors in the same software used for PwPs. Both doctors and PwPs want to see the same results. Doctors may want to see more specific details for some of the results, but these additional details may also be interesting for some of the PwPs, too, as the software will need to cater for PwPs with a wide range of different abilities, knowledge and different backgrounds.

To meet the need for more details without making the main interface too complicated there is now a button on the "Results" page that opens a "Details" page. The "Details" page offers very detailed additional information.

Comment: One of the tasks in year 3 will be to develop web based interfaces for sharing the information from the SENSE-PARK system. We will need to make a separate decision in year 3 if these should be developed separately for doctors and PwPs or if these should also be combined.

3. Software prototype

The following pages show some screen shots of the prototype of the SENSE-PARK software.

Fig. 1 shows the main interface ("Menu"). This will be seen when the software starts. All the different areas of the software can be reached from here.



Figure 1 – Main Menu

Fig. 2 shows the "Tests" page, where some cognitive tests can be selected. The results of these tests can also be a relevant measurement of Parkinson's Disease and are displayed next to other symptoms on the Results page.

Note – Other partners have conducted tests to find out what the most relevant tests for PwPs are. Based on these results some of the tests shown in this screen shot will be removed from the final version and only 3 tests will be included.



Figure 2 – selection of Tests

Fig. 3 shows the Data import screen. The user can import data from different types of sensors or from the Mobile Phone App that accompanies the SENSE-PARK system.

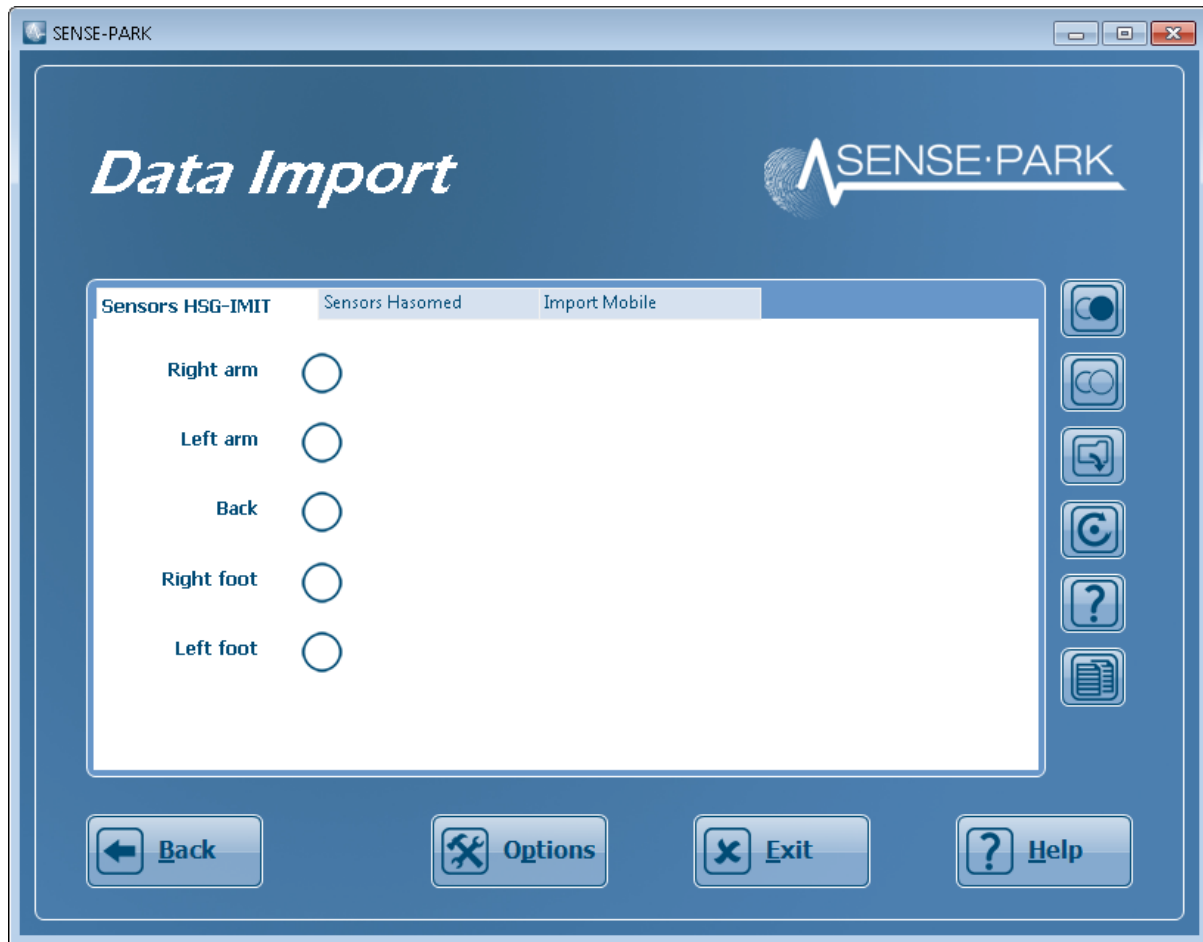


Figure 3 – Data Import screen

Fig. 4 shows the Survey page. The user can select how they feel at a particular time, and compare this later with the objective measurements from the sensors. The software also has a "Diary" option where the user can make free text entries.

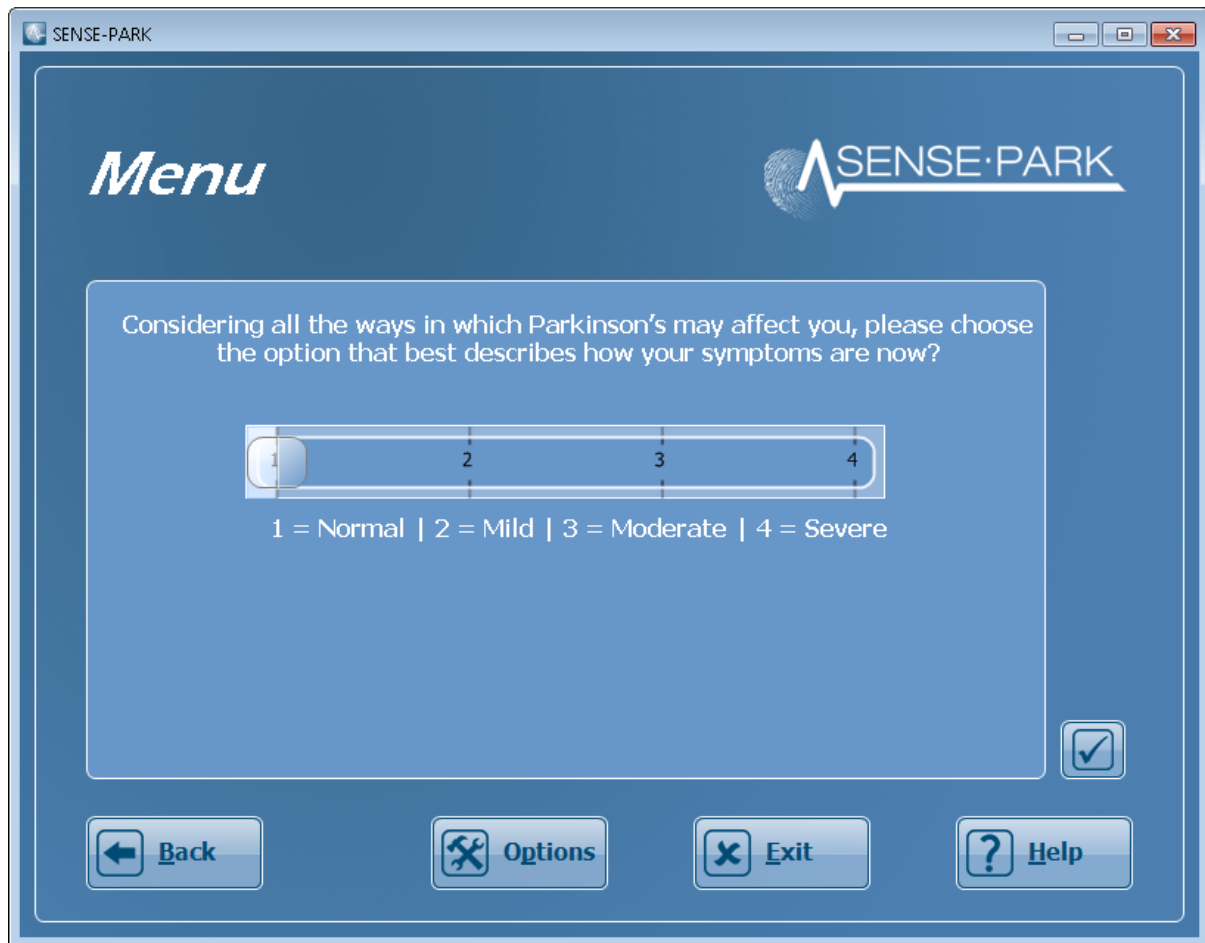


Figure 4 - Survey

Fig. 5 shows the Results screen. In this example results of the "Divided Attention" test are shown. This page has a "Details" button (near the bottom right corner of the screen) which opens a page with further details (shown in Fig. 6)

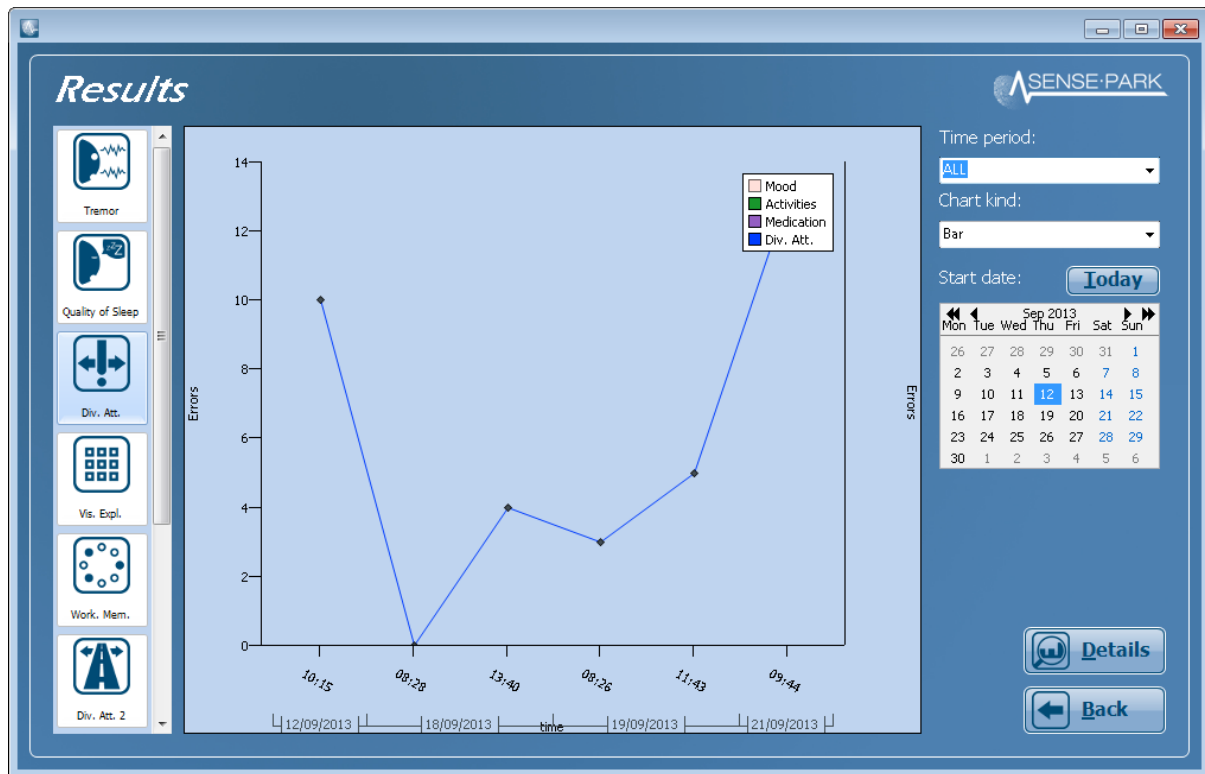


Figure 5 – Results (here: Divided Attention test)

Fig. 6 is the Details page for the results shown in Fig. 5.

Divided Attention	18/09/2013 08:28:45	18/09/2013 13:40:54	19/09/2013
Visual wrong reaction	0	1	
Visual no reaction	0	0	
Visual correct reaction	14	14	
Visual early reaction	0	0	
Auditory wrong reaction	0	1	
Auditory no reaction	0	2	
Auditory correct reaction	13	11	
Auditory early reaction	0	0	

Figure 6 – Results - Details

4. Next steps

The current prototype of the software has all the required features to be useful for PwPs and their doctors. It is planned to continue development into year 3 of the project to make further changes and improvements that further improve usability based on the feedback received.

Another task in year 3 for WP3 will be to complete the draft of the user help system/instruction manuals for the system in close cooperation with PwPs. There will also be a report about teaching PwPs participating in the scenario based study.

WP3 is also responsible for evaluating the user interface solution in the scenario-based study by conducting a feasibility survey amongst the participants of the study. This finally realizes a solution that is userfriendly for PwPs and commercially competitive.