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Abstract: *Workpackage WP03 of the EATS project developed two new measures of effectiveness and utility of assistive technology, respectively 1) the IPPA (Individually Prioritised Problems Assessment), intended to describe the outcomes generated by the provision of AT&S (Assistive Technology and Services) in terms of solution to pre-identified problems and 2) EATS 6-D (EATS 6 dimensions), intended to describe changes in the impact of disability on daily life, resulting from the adoption of such AT&S. In workpackage WP04 these instruments are tested within the framework of service delivery in four countries. This document describes the plan and procedures for the testing phase.*

The instruments will be tested for their feasibility within different settings of service delivery, and for basic aspects of reliability and validity. In four countries, a number of about 300 clients who apply for an assistive device as a consequence of problems in a few selected areas, will be interviewed by an independent interviewer twice: once early in the service delivery process and a second time after about three months of actual use of the device. At these assessments both the IPPA and the EATS-6D will be administered, together with the SIP68 and a set of questions about actual use of and satisfaction with the assistive device for validation purposes. Also, a close family member and a professional involved will be asked to judge the effects of the device. Test-retest reliability and inter-assessor reliability will be evaluated in a separate smaller study in 60 clients. In this study clients who have been using an assistive device for a while and who are in a stable physical condition, will be interviewed twice as well, in 30 clients by the same interviewer and in 30 by different interviewers.

Keywords list: *outcome measures, effectiveness, utility, field testing, validity, reliability, feasibility*

EXECUTIVE SUMMARY

This document presents the work plan and procedures for the field tests of the instruments developed in workpackage 3 of the EATS project. It is the first report from workpackage 4.

The overall objective of EATS is the development of a methodology for comprehensive assessment of assistive technology products and services, aimed at supporting decisions at policy and provision level. As a step towards such objective, the mission of workpackage 3 was to establish measurement instruments able to generate the data that are needed for carrying out such an assessment. In workpackage 4 these instruments are tested for their feasibility and basic aspects of reliability and validity within the framework of assistive technology service delivery in four countries: Norway, Sweden, The Netherlands and Italy.

In four countries, a number of about 300 clients who apply for an assistive device as a consequence of problems in a few selected areas (locomotion, speech related communication problems, hearing problems and self-care problems related to bathing), will be interviewed by an independent interviewer twice: once early in the service delivery process and a second time after about three months of actual use of the device. At these assessments both the IPPA and the EATS-6D will be administered, together with the SIP68 and a set of questions about actual use of and satisfaction with the assistive device for validation purposes. Also, a close family member and a professional involved will be asked to judge the effects of the device. The construct validity will be evaluated by analysing the relationship between IPPA and EATS-6D results and the results on the SIP68. Special attention will be given to responsiveness, being the sensitivity of the instruments to relevant changes. Responsiveness will be assessed by means of effect sizes and comparisons between instruments.

Test-retest reliability and inter-assessor reliability will be evaluated in a separate smaller study in 60 clients. In this study clients who have been using an assistive device for a while and who are in a stable physical condition, will be interviewed twice as well, in 30 clients by the same interviewer and in 30 by different interviewers. Other indicators of reliability will be derived from comparisons of results between countries and between different categories of assistive technology solutions.

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1. INTRODUCTION

1.1 Objectives of workpackage 4

Workpackage 3 of the project aimed at the development of two instruments to assess the effects of assistive technology (AT) solutions from a user perspective. The results were two different instruments: the IPPA, measuring the degree in which the solution succeeds to solve problems in daily life, experienced by the end-user (effectiveness) and the EATS-6D, measuring the effects in terms of utilities, accounting for user preferences. The background of both instruments has extensively been described in previous reports and a draft version of both instruments was presented in deliverable 3-1/2. The aim of workpackage 4 is to test these instruments for their feasibility, their reliability and their validity, within the context of the AT service delivery systems in four countries: Norway, Sweden, The Netherlands en Italy. This workpackage is the ‘proof of the pudding’; the instruments based on theory will now be tested for what they are worth in practice. This report, being the first of this workpackage, describes the methodology and procedures of the field testing of the instruments.

The tests will in this stage be limited to some of the most essential aspects of feasibility, reliability and validity. If the results turn out promising, future research is necessary to test other aspects and the performance in other situations.

The questions to be answered by the study described in this report are:

1. How is the feasibility of the IPPA and the EATS-6D when used in the context of AT service delivery in the participating countries?
2. How reliable are both instruments?
3. How valid are these instruments as a measure of effectiveness of AT and services?

Based on the results of the study both instruments will be refined, and recommendations for further studies and testing will be formulated. The end result of WP04 will consist of published instruments, together with guidelines for their use in practice.

1.2 Structure of this report

The structure of this report follows the questions to be answered. In chapter 2.1 a general overview of the study methods is given. In chapter 2.2 the population of users to be involved in the tests is described, in chapter 2.3 the procedures for feasibility testing are described, chapter 2.4 describes and discusses the procedures for reliability testing and chapter 2.5 deals with the procedures for validity testing. In this chapter, some problems that occurred during the translation process, resulting in some changes in the draft instruments, are discussed. Chapter 2.6 gives the time schedule for the study. For information about the backgrounds of the instruments, one is referred to the previous reports. The appendixes contain the final versions of the instruments as they will be used in the testing phase, the instructions for the assessments and the procedure that was followed for translation of the instruments into the languages of the participating countries.

2. METHODS

2.1 General outline of the study

Both instruments will be tested within the context of the AT service delivery process in the four participating countries. Based on an English version of the instruments, translations were made into the four languages (see chapter 2.5). After a short pre-test, these instruments will be implemented into practice. The study can be divided into two parts: the main study, in which the instruments will be used in all participating countries, in clients who obtain assistive devices, and a smaller study, specifically aiming at test-retest reliability and between-assessor reliability. The main study will be referred to as study A, the other as study B.

In study A, clients with problems in selected problem areas (see chapter 2.2) will be interviewed by an independent assessor, early in the service delivery process (see chapter 2.2). New clients will be included during a period of about four months. After about three months of actual use of the AT solution, they will be interviewed again by the same assessor.

In study B, clients who have been using AT for a while and who are in a stable physical condition, will be interviewed twice (see chapter 2.4). In one group these two interviews are done by the same assessor, to evaluate test-retest reliability. In another group these interviews will be done by different assessors, to test between-assessor reliability. Study B will be done in only one country (The Netherlands).

In both parts of the study, assessors will be therapists/counsellors working as professionals in the service delivery process. Assessors must have knowledge of the potentials of AT and Services and of the consequences of certain disabilities. An assessor will never interview his/her own clients, but only clients of colleagues. Interview and service delivery will be completely independent from each other. The interviewer will be introduced to the client as an independent researcher. In the instructions for the assessments (appendix 1), the exact procedures for the assessments are given. Interviewers must prepare themselves by studying these instructions. Also, they will receive a training, consisting of several test-interviews supervised by partners from the EATS consortium.

In the following chapters both parts of the study are described in more detail.

2.2 Population of the study

Both the IPPA and the EATS-6D are supposed to be applicable to different categories of AT and services and to be usable in different situations and settings. Therefore, it is important to perform the tests in different AT areas and in different countries. On the other hand it must be prevented that the variability of situations is too large. It was decided to restrict the study to a limited number of problem areas, so that the range of AT solutions in the study will be sufficiently varied and not too large. The criteria for this selection were:

- a) frequent problems so that sufficient data can be gathered in a limited time period;
- b) at least one problem area similar in all participating countries;
- c) sufficient variation of possible AT solutions;
- d) inclusion of problem areas in which technology from the telematics area as well as other technologies may be relevant;
- e) accessibility of the relevant service delivery procedures for the consortium partners.

First a set of possible problem areas was selected, based on the criteria a), c) and d) mentioned above. From this set, a further selection was made, based on the type of problems that the consortium partners have access to (criteria b) and e)). Also, the numbers of clients in each problem

area are mainly based on an estimation of the numbers of clients that consortium partners will have access to in the limited period of time available. The resulting problem areas are presented in table 2.1, together with the number of clients to be included in the study.

In the main study (study A), these clients will all be interviewed twice by an independent interviewer/assessor: the first time early in the service delivery process, after a first global assessment of the problems and possible solutions has been made during an interaction between the client and the service delivery professional; a second time after three months of actual usage of the AT solution. In the instructions for the assessments (appendix 1), the exact procedures for both assessments are given. Since the service delivery process differs substantially among countries and also between problem areas, the exact timing of the first assessment may differ. From a methodological point of view this is unfortunate, but in practice unavoidable. In the questionnaire the assessor is asked to indicate at what stage in the process the assessment took place. In this way it is possible to study the possible effects of different timing.

Table 2.1

Problem areas and numbers of clients to be included in the main study

	Norway	Sweden	Italy	Netherlands	<i>total</i>
problems in locomotion	40	40	40	40	<i>160</i>
speech related communication problems		20	20		<i>40</i>
hearing problems	40		20*	20*	<i>80</i>
self-care problems in relation to bathing				20	<i>20</i>
	<i>80</i>	<i>60</i>	<i>80</i>	<i>80</i>	<i>300</i>

*: for these categories practical arrangements are not yet final

In study B, a separate group of about 60 users in the above mentioned problem areas will be included in a specific study of test-retest reliability and between-assessors reliability (see for further details chapter 2.4).

Clients younger than 16 years of age and clients with serious cognitive impairments will be excluded from both study A and B.

2.3 Feasibility testing

Feasibility of instruments refers to the practical aspects of their use. Basic aspects to be evaluated are the duration of assessments, the level of difficulty for both interviewers and respondents, the clarity of questions, the way of administering the instrument, and the way the procedures regarding the instrument relate to the practical situation in which the assessment takes place. For example, performing a gait analysis in the home situation is not feasible, nor is the use of a written questionnaire in children with reading and writing problems. To assess the feasibility of the IPPA and EATS-6D, the assessors in both study A and study B will be asked to evaluate each individual assessment on the following aspects:

- a) the duration of the assessment;
- b) their impression of how difficult the assessment was for the respondent (did he/she understand the questions, how much explanation was necessary, etc.);
- c) the degree of non-response (questions not being answered);

- d) the exact timing of the assessment within the service delivery process (see chapter 2.1);
 - e) other observations probably relevant for improvements of the instruments.
- For this purpose a separate form was developed (appendix 4).

2.4 Reliability testing

Introduction

The principal definition of test reliability is the degree to which an instrument is free from random error. Basically there are two approaches to assess the reliability of an instrument. These approaches are in principle independent from each other. The first is *internal consistency*. This is relevant for multi-item instruments, where multiple items are intended to measure the same concept. Here it is important that the content of these items is homogeneous. This is usually tested with reliability coefficient Cronbach's alpha, a measure for the correlation between items. The second approach is the assessment of *reproducibility*. Here the main questions are whether an instrument yields stable scores over time among respondents who are assumed not to have changed on the domains being assessed (*test-retest reliability*) and whether similar scores are obtained when the instrument is administered by a different assessor or interviewer (*inter-observer reliability*).

Reproducibility of IPPA and EATS-6D

For both the IPPA and the EATS-6D internal consistency is not applicable. Both instrument are no multi-item tests, in the sense that more items are used to measure one dimension. The only aspects of reliability that can be assessed are test-retest and between-assessor (inter-observer) reliability. Within the main study, in which clients are followed during the service delivery process, these aspects can not be assessed, simply because the situation of the clients changes (they receive some kind of AT solution). Therefore, these aspects will be evaluated in a separate study, study B. In this study, about 60 users of AT who are in a stable physical condition will be interviewed twice, with a period of two months in between. It is assumed that the problems of these users will remain the same in this period, and that two months is long enough to prevent a serious recall-bias (which would result in an overestimation of the reliability, because people during the second assessment might remember what they answered during the first). In 30 users the interviewer will be the same for both assessments. In this way the test-retest reliability can be evaluated. In the remaining 30 users the interviewer at both assessments will be different, in order to be able to evaluate the inter-assessor reliability. For practical reasons and in order to reduce the possible influence of differences between countries and service delivery systems, study B will only be performed in one country, The Netherlands. Users to be included will be selected through the same channels as in study A. This part of the study will be restricted to clients with mobility related problems only.

Statistical procedures

The test-retest and inter-assessor reliability will be estimated by calculating the correlation between the scores and answers at both assessments. For the IPPA, first the content of the problems identified at both assessments will be compared (problems mentioned should be the same at both assessments). For the importance scores and the rating of the level of difficulty with each problematic activity, Cohen's Kappa will be used as a measure of stability of the answers (given that the content of the problems mentioned is the same!). For the total score non-parametric correlation coefficients will be calculated (Spearman's Rho). For the items of the EATS-6D Questionnaire, Cohen's Kappa will be

calculated. The stability of the ‘thermometer-like’ EATS-6D Scale will be assessed with Spearman’s Rho.

Indirect indications of reliability

Apart from the tests in study B, some indirect indications for the reliability may be derived from study A. Relevant aspects to be studied are the score distribution in respondents with comparable levels of disability, differences in scores and score distribution between countries, and differences in scores and score distribution between different categories of AT solutions. These aspects also relate to the validity of the instruments. Indirectly, however, they give an indication of the reliability. If, for example, there is a very wide range of scores, not related with the level of disability (as measured with the SIP68) the reliability will be questionable.

2.5 Validity testing

Introduction

The validity of an instrument can be simply defined as the degree to which the instrument measures what it is supposed to measure. The most powerful way to assess validity is to compare the results of an instrument with the scores on another instrument, which is known to measure the concept in a valid way (*criterion validity*). For both IPPA and EATS-6D this aspect of validity can not be assessed, because there are no instruments available for measuring the effects of AT and services (see the previous reports and those from the TIDE-CERTAIN project). This means that evidence for the validity of the instrument shall have to be obtained through other methods. In both study A and study B the validity of IPPA and EATS-6D will be estimated by comparison of the scores with the results of a few other instruments and variables, that may be expected to have a relation with the effects of the AT solution (*construct validity*). These instrument and variables are:

- a) the SIP68, a well validated and reliable instrument for problems in daily functioning;
- b) the judgement by a close family member, knowing the interviewed client and his situation well, of the effects of the AT solution (this is not possible in study B);
- c) the judgement by a (health care) professional involved with the client of the effects;
- d) the actual use of the solution;
- e) the satisfaction of the user with the solution.

In earlier plans for the study it was intended to include the FIM in the study as well. At the time of delivery of this report, however, no permission to use the FIM was obtained yet. Therefore, it is omitted from the study.

Validation of IPPA

For the IPPA the emphasis of the validity tests lies on the reported change. IPPA intends to measure changes in the level of difficulty respondents experience with a number of activity related problems, identified during the first IPPA interview. It is expected that reported improvement co-varies with improvement on the SIP68, with the judgements of effectiveness by family members and professionals involved, with actual use of the solution (it is unlikely that an effective assistive device will not be used), and with user satisfaction. If such correlations are not found, or if negative relations are found, the validity of IPPA may be questioned. Positive correlations as described will, though not expected to be very strong, be interpreted as evidence for the (construct) validity of IPPA. Apart from a positive relationship between reported change with the instruments and variables

mentioned above, it is also expected that IPPA total scores (at both assessments) relate to some extent with the SIP68: respondents mentioning more problems of high importance and high levels of difficulty, may be expected to have higher SIP-scores, indicating more serious problems in daily functioning. This relationship will be evaluated in study A as well as in study B.

Validation of EATS-6D

The validity testing of the EATS-6D will be similar to that of IPPA. Weak but positive relations between the EATS-6D scores and change scores on the one hand and the variables mentioned above on the other hand are expected. Such correlations will be calculated for each of the items separately (the six domain specific questions and the EATS-6D Scale score). The testing of the EATS-6D will be limited to its performance as a profile: within the context of this study it is not possible to calculate utility weights for all the possible scores on the six dimensions. This would require a very time consuming procedure, preferably a Time Trade-Off procedure, with a specific reference group, to be done in each country separately. Therefore it was decided to first test the validity of the individual items and the EATS-6D Scale score separately. If these tests turn out promising it is more likely that the weighting procedure to 'lift' the instrument to the level of a utility measure, is worthwhile. In the recommendations for further work this point will be addressed.

Responsiveness

Since both IPPA and EATS-6D are aimed at assessing change, it is important to obtain information about the responsiveness (=sensitivity to change) of both instruments. This is an essential aspect of the construct validity. The basic criterion for responsiveness is whether the measure can detect differences in outcome that are important, even if those are small. Common methods of evaluating responsiveness include comparing scores before and after an intervention that is expected to affect the construct, and comparing changes in scores with changes in other related measures that are assumed to move in the same direction as the target measure. Both these approaches will be followed. In study A the differences before and after obtaining an AT solution will be analysed. The results of this will be compared with the results in study B, where no changes are expected. Within study A, the differences in effect sizes between the different instruments (IPPA, EATS-6D and SIP68) and their relation with the judgements of both family members and professionals will be analysed.

Statistical procedures

The statistical procedures for assessing the relationships between IPPA and EATS-6D on the one hand and the variables and scores mentioned above on the other hand, will basically be similar to those used for reliability testing: non-parametric correlation coefficients and non-parametric tests for differences between groups (Mann-Whitney U). For the assessment of the responsiveness of the instruments, effect sizes will be estimated. Effect size translates the before-after changes into a standard unit of measurement (standard deviation). The effect sizes of IPPA, EATS-6D and SIP68 found in study A will be compared with each other and with the effect size obtained in the population in study B.

Problems during translation: content validity

One important aspect of the validity, the *content validity (or 'face-validity')*, has already been subject to testing during the development and especially the translation procedure of both instruments. A large number of experts and professionals was involved in the development process. The draft instruments and the thinking behind them were discussed with the national reference groups that were established for the EATS project. In all participating institutes the drafts were

discussed with colleagues and the instruments were discussed in great detail within the consortium. The involvement of so many experts gives support for the content validity of the instruments. The same procedure, however, resulted also in a difficult problem regarding the EATS-6D. It appeared that the term 'autonomy', which was a rather central concept in the thinking behind the instrument, caused many difficulties during the translation into the different languages: this concept has very different meanings in different countries, and many people appear to associate it with political or ethical ideas and opinions, which was not the intention of the consortium. After long debate it was decided to chose another formulation in the instrument, that is more neutral to most people. The central question now is to what extent the disability related problems of the respondent interfere with his/her life (see appendix 2 and 3). This is the most important change of the instruments since they were described in the previous deliverable (3-1.2). Further changes were minor adaptations of answering categories etc.

2.6 Time schedule

From the date of delivery of this report on the time schedule of the study will be as follows:

July 1 - September 15:

- finalisation and printing of questionnaires
- training of assessors
- practical organisation of field work.

August:

- Pilot assessments in each country

September 15 - Januari 15:

- inclusion of clients in study A
- performance of study B

Januari 15:

- stop inclusion of new clients

January 15 - May 15:

- follow-up assessments study A
- analysis of the results from study B
- analysis of the results from the first assessments of study A

May 15:

- stop follow-up assessments

May 15 - July 1:

- analysis
- preparation and review reports

As stated earlier, tests will in this stage be limited to some of the most essential aspects of feasibility, reliability and validity. If the results turn out promising, future research will be necessary to test other aspects and performance in other situations. This procedure was chosen because of the limited number of clients the consortium partners would have access to during the short period of time available for testing. Also, more extensive testing will only be accountable after basic tests have shown promising results.

3. REFERENCES

- Bakker C H. *Patient-oriented outcome assessment in rheumatic diseases. Thesis Rijksuniversiteit Limburg; Universitaire Pers Maastricht, 1995; ISBN 90-5278-188-5 (chapter 8 Problem elicitation in AS and fibromyalgia)*
- De Bruin A F, Buys M, De Witte L P, Diederiks J P M. The Sickness Impact profile: SIP68, a short generic version, first evaluation of the reliability and reproducibility. *Journal of Clinical Epidemiology*, vol. 47 pp 863-871, 1994
- DeRuyter F. *Evaluating outcomes in assistive technology: do we understand the commitment?* *Assistive Technology* 1995; 7:3-16
- The EuroQol Group. *EuroQol: a new facility for the measurement of health-related quality of life*. *Health Policy* 1990. 16:199-208
- EUSTAT Consortium. *Critical factors involved in End-Users education in relation to Assistive Technology*. European Commission DGXIII TELEMATICS/EUSTAT Project, 1998. [Http://www.siva.it/research/eustat](http://www.siva.it/research/eustat)
- Kiresuk T J, Smith A, Cardillo J E. *Goal Attainment Scaling: Applications, Theory, and Measurement*. Lawrence Erlbaum Associates, Hillsdale, 1994
- Lorentsen Ø, Hem K G. *Critical factors and general outcomes of assistive technology*. Deliverable 1, European Commission TIDE/CERTAIN Project 1995.
- Persson J, Brodin H. *Prototype tool for assistive technology cost and utility evaluation*. Deliverable 2, European Commission TIDE/CERTAIN Project 1995.
- Scherer M. *Living in the state of stuck: how technology impacts the lives of people with disabilities*. Cambridge: Brookline Books, 1996
- Spilkert B. *Introduction*. In Spilkert B (ed). *Quality of Life and Pharmacoeconomics in Clinical Trials*. Philadelphia: Lippincot-Raven Publishers 1996
- Streiner D L, Norman G R. *Health Measurement Scales: a practical guide to their development and use*. Oxford Medical Publications. Oxford University Press: Oxford-New York-Tokyo, 1989
- Tugwell et al. *McMaster Toronto Arthritis Rheumatism patient preference questionnaire*. *J.Rheumatol* 1987; 14:446-451
- USER Consortium. *Userfit: a practical handbook on user-centred design for assistive technology*. European Commission, TIDE/USER project, Brussels 1997

APPENDIX 1: instructions for assessments

Introduction

General

Interviewers should read this instruction thoroughly, before they start administering an EATS interview. In this study we want to compare results from EATS interviews in different countries, so it is important that all interviews are administered in exactly the same way. Therefore, it is essential that during the interview, the interviewer sticks closely to the instructions. Of course it is not always possible to stick to the words in this instruction literally; interviewers should choose their wording, depending on the specific respondent and the course of the conversation. Because the EATS instruments are still under development, it would be of great help if interviewers note any remarks or questions, that they might have about the instruments, including the instructions and the procedures.

Which clients should be included in the study

The target population of this study consists of service delivery clients, who have applied for a new Assistive Technology. People who are not able to answer themselves, because of a cognitive or communication disability are excluded from this study. Children under 16 years of age are also excluded from this study.

Who should do the interviews

The interviewer (from here on referred to as the assessor) should be a therapist / counsellor / professional involved in the service delivery process, working in the institute or centre where the EATS interviews take place. The assessor should never interview his/her own clients, but only clients of colleagues from the same institute or centre. Interview and service delivery have to be independent from each other. He or she must have knowledge of the potentials of Assistive Technology and Services and of the consequences of certain disabilities. The interviewer must be introduced to the client as an independent researcher.

When should the interviews take place

Usually, in a service delivery process seven essential steps can be distinguished:

- 1. Initiative** The first contact
- 2. Assessment** Evaluation of needs
- 3. Typology** Choice of appropriate kind of assistive technology
- 4. Selection** Selection of specific device
- 5. Authorization** Obtaining funding
- 6. Delivery** Getting the device to the user
- 7. Management and follow-up** Continued help for the user

The first interview has to take place as early as (practically) possible in the service delivery process; preferably right after the Initiative. If this is not possible (for practical reasons) the interview should be administered at the first possible opportunity. The second interview has to take place 3 months after the client has started to use the Assistive Technology or, if applicable, 3 months after the client has finished the training programme for using the Assistive Technology.

First interview

The first interview consists of seven parts:

1. Introduction
2. General information questions
3. IPPA interview
4. EATS 6-D questionnaire
5. EATS 6-D scale
6. SIP68 questionnaire
7. Conclusion

1 Introduction

Clients must be properly informed about the purpose of the interview and about the procedure. It is essential to convince clients that results of the assessment will not affect the service delivery process in any way. Data must be handled confidentially. Also, clients have to be told that participation to the EATS interviews is voluntary. They can refuse to participate, without any consequences to them or their application. Clients have to give their informed consent. The assessor has to register how long the interview takes

The assessor welcomes the client and thanks him/her for his/her co-operation. The assessor says: *“I would like you to answer some questions. The reason we want to do this interview is that we are trying to develop an instrument to evaluate the effects of provision of assistive devices. The questions I would like to ask you are all related to the assistive device provision you have applied for. However, the interview is completely irrespective of the application procedure itself; the answers you give, will not be used in the service delivery process and will not affect it in any way. The answers you give will be processed confidentially. This interview will take about one hour. About three months after you have started using your new assistive device, we would like to interview you again. Do you have any questions?”* (If so, the assessor will try to answer these questions) *“Let’s start with the interview. First I would like to ask you some general questions.”*

2 General information questions

The assessor completes page 1 and 2 of the First Interview form, by going through the questions together with the client. The assessor reads the questions to the client (except the first two questions) and fills in the answer that the client gives. The assessor is allowed to help the client, by explaining the questions if the client doesn’t understand them. The first two questions are filled in by the assessor. For the questions on page 2, the assessor can use the list of coding on page 8. If a device is not in this list, the assessor writes down the name of the device.

3 First IPPA interview

When the assessor has finished all the questions of the General Information forms, the interview continues with the IPPA interview (First Interview, page 3).

The assessor asks the client to identify those problems that he/she considers to be the most important and that he/she expects or wants to see improved by using Assistive Technology. The assessor reads to the client the introduction printed above the form: *“What are the most relevant problems that you experience and that you expect or want to see improved by using a new assistive device? Please*

focus on problems that you experienced in performing activities, during the last month in daily routine. The problems may relate to a discrete function (combing your hair, turning a key, et cetera.) or to a more comprehensive function (preparing a meal, going shopping, et cetera). You may think of things you are not able to do at all or things that you are not able to do as well or as often or as easy as you would like.” This part of the interview has to be administered in an informal, interactive manner. Client and assessor can discuss things in an informal manner.

The assessor takes notes to list the problems identified by the client. The assessor can use a notebook or a piece of paper to do this. Once the client has finished identifying problems spontaneously, the assessor shows him/her a checklist with possible problem areas (First Interview, page 4) to make sure the client doesn't overlook any relevant problem. The assessor says: *“Please go through this list with examples of possible problem areas, to check whether there are any problems that you may have overlooked.”*

Clients are allowed to identify up to seven problems in total. The client should be stimulated to think of possible problem areas, but it is not necessary to push him/her to mention precisely seven problems; the aim is to identify those problems that are relevant to the client. It doesn't matter if the client identifies less than seven problems. If the client identifies more than seven problems, the assessor shows the client the list with problems that he/she identified and asks him/her to select the seven most relevant problems. The assessor says: *“If you look at this list with problems that you identified, could you please select the seven problems that are most relevant to you and that you would most like to see solved or improved by using a new assistive device.”*

For each of the (up to seven most relevant) problems that is identified by the client, the assessor takes a separate IPPA form (First Interview, page 3) and writes down (on the top where it says: **To be completed by the interviewer**) a short description of the identified problem being assessed on this form and the number of the problem (1 to 7).

The assessor shows the client the IPPA form with the first problem and asks him/her to answer the first question (How do you rate the importance of this problem?). The assessor says: *“Please indicate how you rate the importance of this problem,”* (the assessor points at the description of the problem at the top of the form) *“at this moment (so the last couple of days before this interview). You may answer by circling one of the numbers on this seven-point scale”* (the assessor points at the 1-to-7-scale below the first question) *“to indicate how important this problem is to you. The scale runs from 1 to 7, equal to ‘of no importance at all’ to ‘most important’.”* When the client has answered the first question, he/she is to answer the second question (How do you rate the level of difficulty you have with performing this activity in your everyday life?) in the same way. The assessor says: *“Please indicate how you rate the level of difficulty you have with performing this activity in your everyday life,”* (the assessor points at the description of the problem at the top of the form) *“at this moment, by scoring this scale,”* (the assessor points at the 1-to-7-scale below the second question) *“with 1 equal to ‘not difficult at all’ and 7 equal to ‘too difficult to perform activity.’”*

When the client has answered this second question, he/she is to do the same with the other (up to seven) problems.

4 EATS 6-D Questionnaire

When the client has finished all (up to seven) IPPA forms, the interview continues with the EATS 6-D questionnaire (First Interview, page 5). The assessor says: *The EATS 6-D questionnaire contains six questions. With each of the questions there are three mutually excluding, possible answers. The answers are expressed as statements, according to the following progressive approach:*

1. *I have no problems with this (or so little problems that are negligible).*
2. *I have some problems with this.*
3. *I have very severe problems with this.*

This progression is formulated differently for each question. Would you please indicate which of the three statements currently best describes your personal feeling. Please answer these six questions,” (the assessor point at the questions of the EATS 6-D questionnaire on page 5 of the First Interview form) *“by selecting the one most appropriate statement for each question. Please choose the answer that best describes how you have been feeling the last couple of weeks. You can answer by ticking the answer of your choice. Only one answer can be given for each question. Again, you should refer to your current daily life situation, in your most usual environment, with all assistive technology and personal assistance arrangements you currently use.”*

If the client wants some more explanation about the questions, the assessor is allowed to say the following:

1 Are you able to move about as you wish or need?

“‘Moving about’ should be considered in the most common situation experienced by you, and according to the range of mobility that fits your own expectation. Thus, it is irrespective of how you achieve mobility (by walking, by car, by public transportation, by independently pushing or drive a wheelchair, by being pushed in a wheelchair by an attendant et cetera) and how far you actually move.”

2 Can you manage your personal self-care as you wish or need (e.g. wash, dress, take care of yourself)?

“The list of examples of possible aspects of self-care in brackets, is no more than an indication and should not be considered as exhaustive. Again, the rating is irrespective of how you perform the self-care actions (without devices, with devices, with assistance et cetera) and irrespective of the number of self-care activities that you actually perform.”

3 Can you perform your usual activities (e.g. work, study, housework, family or leisure activities) as you wish or need?

“As above, examples of possible usual activities are written in brackets as an indication and not as an exhaustive list. You can decide what you consider ‘usual activities’, with respect to your individual situation. Again, the rating is irrespective of how such usual activities are performed (without devices, with devices, with assistance et cetera) and of the number of usual activities that you actually perform”

4 Do you ever feel pain or discomfort?

“This question asks for your experience of pain or discomfort in this period of your life (not this very minute, but during the last couple of weeks).”

5 Are you ever anxious or depressed?

“This question asks for your experience of anxiety or depression in this period of your life (not this very minute, but the during last couple of weeks).”

6 Are you able to establish and maintain relationships with people as you wish or need?

“You may have a smaller or larger amount of contacts as part of usual activities, but that would tell little about how satisfactory such relationship are with respect to your expectations. In this question, social relationships are intended in terms of quality rather than amount of contacts established or maintained. They may include relationship with spouse, family members, friends, colleagues and newcomers.”

5 EATS 6-D Scale

When the client has finished answering the EATS 6-D questionnaire, the interview continues with the EATS 6-D Scale (First Interview, page 6). EATS 6-D Scale consists of a Visual Analogue Scale (VAS), with a short introduction that explains that it is designed to express the influence that problems (caused by disability or handicap) have on the client’s life at the time of administration. The VAS is a scale, drawn rather like a thermometer, leading from the best imaginable state: ‘client’s life is not affected by problems at all’ (rated 0) to the worst imaginable state: ‘client’s life is totally affected by problems’ (rated 100). The VAS contains decimal numbers between 0 to 100, divided by one little dash every unity and a bigger one every five units. The client should draw a line from the question “How much do your problems interfere with your life?” to the point on the scale that best represents the actual state.

The assessor reads to the client the introduction printed above the scale: *“In your everyday life, you will encounter problems related to your disability or handicap that affect your life. With this question we want to ask you about the influence that these problems have on your life. Could you estimate to what extend these problems affect your life? Please answer the question “How much do your problems interfere with your life?” by drawing a line from the question to the most appropriate point on the scale. 0 represents the best imaginable state (Your problems do not interfere with your life at all) and 100 represents the worst imaginable state (Your life is totally affected by your problems). Please consider your everyday life in this period of your life (the last couple of weeks).”*

6 SIP68 Questionnaire

When the client has finished answering the EATS 6-D Scale, the interview continues with the SIP68 questionnaire. Instructions are included in the questionnaire. If possible the assessor gives the SIP68 questionnaire (including the instructions) to the client, so the client can fill it in later at home. The assessor also gives the client a post-paid envelope to return the completed questionnaire.

7 Conclusion

The assessor checks if all questions have been answered and thanks the client for his/her co-operation. The assessor checks how long the entire interview has taken and registers this on the form (first interview, page 7). After the interview, the assessor also answers the other questions on page 7. The assessor reminds the client of the fact that he/she will be approached (by mail or by telephone) for a second interview in a few months and makes sure he has the client’s name, address and telephone number.

Second interview

The second interview consists of seven parts:

1. Introduction
2. General information questions
3. IPPA interview
4. EATS 6-D questionnaire
5. EATS 6-D Scale
6. SIP68 questionnaire
7. Conclusion

1 Introduction

The assessor welcomes the client and thanks him/her for his/her co-operation. The assessor says: *“Again, I would like you to answer some questions. Most of the questions are similar to the ones I asked you a few months ago. The reason we do this, is because we want to see what has changed in your life after having received your new assistive device. It is not important that you remember your previous answers. You must try and answer according to your feelings at this moment. This time the interview will take a little less time, about 30 minutes. Do you have any questions?”* (If so, the assessor will try to answer these questions) *“Let’s start with the interview.”* Again, the assessor registers the time the interview takes.

2 general information questions

The assessor says: *First I would like to ask you: What kind of assistive device did you receive since the interview we had a few months ago?* The assessor fills in the answer. The assessor can use the list of coding (Second Interview, page 6) If a device is not in this list, the assessor writes down the name of the device. If the client doesn’t quite know what the device is called, the assessor can help him/her. Then, the assessor asks the client to complete the next question. Again, the assessor is allowed to explain the question.

3 IPPA interview

For each of the (up to seven) problems identified by the client in the first interview, the assessor takes a separate IPPA form (Second Interview, page 2) and writes down (on the top where it says: To be completed by the interviewer) the same descriptions and numbers as used on the IPPA forms in the first interview. The client is not allowed to see his score from the first interview and the assessor is not allowed to remind the client of his/her previous score.

The assessor shows the client the IPPA form with the first problem and asks him/her to answer the first question (How do you rate the level of difficulty you have with this problem in your everyday life?). The assessor says: *“Please indicate how you rate the level of difficulty you have with performing this activity in your everyday life,”* (the assessor points at the description of the problem at the top of the form) *“at this moment. You can do this by circling one of the numbers on this seven-point-scale,* (the assessor points at the 1-to-7-scale below the question) *“with 1 equal to ‘not difficult at all’ and 7 equal to ‘too difficult to perform activity’.”*

When the client has answered the first question, he/she is to answer the second question (Has using the assistive device solved this problem as much as you expected it would?). The assessor says: *“Could you please indicate to what degree using this new assistive device has solved this problem.”* (the assessor points at the description of the problem at the top of the form) *“Has it solved this problem as you expected it would or more than you expected it would or maybe even much more than you expected? Or has using this assistive device perhaps solved this problem less or even much less than you expected it would? Again you can answer by circling one of the numbers on the answering scale.* (the assessor points at answering scale below the question, running from -2 to +2)

When the client has answered this second question, he/she is to do the same with the other (up to seven most relevant) problems.

4 EATS-6D Questionnaire

When the client has finished all (up to seven) IPPA forms, the interview continues with the EATS 6-D Questionnaire (Second Interview, page 3). This done in the same way as during the first interview. The client is not allowed to see his answers from the first interview and the assessor is not allowed to remind the client of his/her previous answers.

The assessor says: *The EATS 6-D questionnaire contains six questions. With each of the questions there are three mutually excluding, possible answers. The answers are expressed as statements, according to the following progressive approach:*

- 1. I have no problems with this (or so little problems that are negligible).*
- 2. I have some problems with this.*
- 3. I have very severe problems with this.*

This progression is formulated differently for each question. Would you please indicate which of the three statements currently best describes your personal feeling. Please answer these six questions,” (the assessor point at the questions of the EATS-6D questionnaire on page 5 of the First Interview form) *“by selecting the one most appropriate statement for each question. Please choose the answer that best describes how you have been feeling the last couple of weeks. You can answer by ticking the answer of your choice. Only one answer can be given for each question. Again, you should refer to your current daily life situation, in your most usual environment, with all assistive technology and personal assistance arrangements you currently use.”*

If the client wants some more explanation about the questions, the assessor is allowed to say the following:

1 Are you able to move about as you wish or need?

“‘Moving about’ should be considered in the most common situation experienced by you, and according to the range of mobility that fits your own expectation. Thus, it is irrespective of how you achieve mobility (by walking, by car, by public transportation, by independently pushing or drive a wheelchair, by being pushed in a wheelchair by an attendant et cetera) and how far you actually move.”

2 Can you manage your personal self-care as you wish or need (e.g. wash, dress, take care of yourself)?

“The list of examples of possible aspects of self-care in brackets, is no more than an indication and should not be considered as exhaustive. Again, the rating is irrespective of how you perform the

self-care actions (without devices, with devices, with assistance et cetera) and irrespective of the number of self-care activities that you actually perform.”

3 Can you perform your usual activities (e.g. work, study, housework, family or leisure activities) as you wish or need?

“As above, examples of possible usual activities are written in brackets as an indication and not as an exhaustive list. You can decide what you consider ‘usual activities’, with respect to your individual situation. Again, the rating is irrespective of how such usual activities are performed (without devices, with devices, with assistance et cetera) and of the number of usual activities that you actually perform”

4 Do you ever feel pain or discomfort?

“This question asks for your experience of pain or discomfort in this period of your life (not in this very moment, but during the last couple of weeks).”

5 Are you ever anxious or depressed?

“This question asks for your experience of anxiety or depression in this period of your life (not in this very moment, but during the last couple of weeks).”

6 Are you able to establish and maintain relationships with people as you wish or need?

“You may have a smaller or larger amount of contacts as part of usual activities, but that would tell little about how satisfactory such relationship are with respect to your expectations. In this question, social relationships are intended in terms of quality rather than amount of contacts established or maintained. They may include relationship with spouse, family members, friends, colleagues and newcomers.

5 EATS 6D Scale

When the client has finished answering the EATS 6-D questionnaire, the interview continues with the EATS 6-D Scale (Second Interview, page 4). This done in the same way as during the first interview. The client is not allowed to see his score from the first interview and the assessor is not allowed to remind the client of his/her previous score.

The assessor reads to the client the introduction printed above the scale: *“In your everyday life, you will encounter problems related to your disability or handicap that affect your life. With this question we want to ask you about the influence that these problems have on your life. Could you estimate to what extend these problems affect your life? Please answer the question “How much do your problems interfere with your life?” by drawing a line from the question to the most appropriate point on the scale. 0 represents the best imaginable state (Your problems do not interfere with your life at all) and 100 represents the worst imaginable state (Your life is totally affected by your problems). Please consider your everyday life in this period of your life (the last couple of weeks).”*

6 SIP68 questionnaire

When the client has finished answering the EATS 6-D Scale, the interview continues with the SIP68 questionnaire. Instructions are included in the questionnaire. If possible the assessor gives the SIP68 questionnaire (including the instructions) to the client, so the client can fill it in later at home. The assessor also gives the client a post-paid envelope to return the completed questionnaire.

8 Conclusion

The assessor checks if all questions have been answered and thanks the client for his/her co-operation. The assessor checks how long the entire interview has taken and registers this on the form (second interview, page 5). After the interview, the assessor also answers the other two questions on page 5

APPENDIX 2: the questionnaire for the first assessment (IPPA and EATS-6D)

To be completed by the interviewer

Registration no. client

Sex: ż Mależ Female

Age: years

Occupation:

- ż Student
- ż Working
- ż Household
- ż Retired
- ż Other:

Accommodation:

- ż Own house / flat (rented or owned)
- ż Service flat
- ż In an institution / nursing home / health care facility / old people's home
- ż Other:

Cohabiting persons:

- ż None
- ż Parent(s) no.:
- ż Partner no.:
- ż Child(ren) no.:
- ż Other: no.:

How long have you had this disability: months

Prognosis:

- ż Regressive
- ż Stationary
- ż Progressive
- ż Unknown

Main reason for applying for assistive technology:

- ż Old device needs replacement
- ż New disability has arisen
- ż Existing disability has become worse
- ż Situation or environment has changed
- ż Other:

For the following 3 questions, see annex for codes

Other kinds of assistive devices currently (or normally) used:

- ISO ____ . ____ . ____
- ISO ____ . ____ . ____
- ISO ____ . ____ . ____
- ISO ____ . ____ . ____
- ISO ____ . ____ . ____

Other previous experience with assistive devices:

- ISO ____ . ____ . ____
- ISO ____ . ____ . ____
- ISO ____ . ____ . ____
- ISO ____ . ____ . ____
- ISO ____ . ____ . ____

Other kinds of assistive devices in possession, but currently (or normally) not used:

- ISO ____ . ____ . ____
- ISO ____ . ____ . ____
- ISO ____ . ____ . ____
- ISO ____ . ____ . ____
- ISO ____ . ____ . ____

Examples of possible problem areas

To be used by the client, to support identification of relevant problems

Self-care

- Shower / bathe / wash oneself
- Caring for one's teeth, hair, skin, feet
- Dress / undress
- Eat / drink
- Visit the lavatory
- Sleep and rest
- Wake up at the appointed time
- Health maintenance, e.g. take one's medicines

Mobility

- Moving around (walking, using wheelchairs or other assistive technology) indoor / outdoor
- Climb a stairs
- Get in or out of a chair
- Go to / rise from bed
- Get in or out of a car, etc.

Transportation

- By car
- By bicycle
- By public transport

Housework

- Cook / prepare a meal
- Clean / do the dishes
- Wash / maintain one's clothes
- Shop
- Lift things / pick things up
- Stoke / maintain the heating

Safety / security

- Be warned in case of fire, etc.
- Managing (lock/unlock) the outer / entrance door
- Call for help if needed

Leisure activities

- Watch TV
- Listen to radio / music

- Read newspapers/ magazines / books
- Recreation
- Gardening
- Playing
- Use a computer
- Other hobby-activities
- Sports

Role activities

- Work
- Learn / study
- Political activities

Communication

- Have conversations
- Use the telephone
- Read / write letters etc.

Social interaction

- Visit friends / family
- Participate in associations, congregations, etc.

To be completed by the client

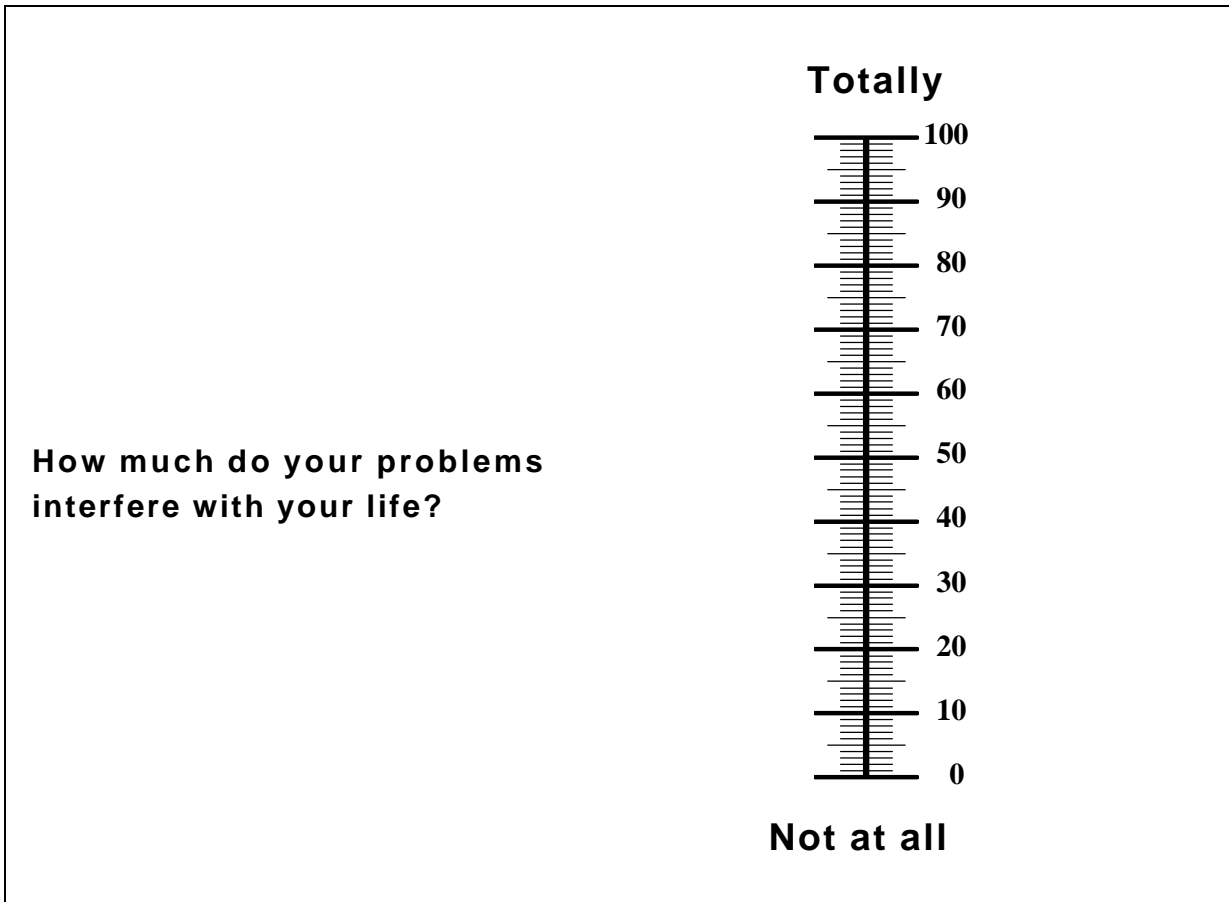
Please indicate which statements best describe how you feel in this period of your life (the last couple of weeks), by ticking the appropriate answers. Tick only one answer for each of the six questions below.

- 1 Are you able to move about as you wish or need?**
- I have no problems in moving about
- I have some problems in moving about
- I am unable to move about
- 2 Can you manage your personal self-care as you wish or need? (e.g. wash, dress, take care of yourself)**
- I have no problems in managing my self-care
- I have some problems in managing my self-care
- I am unable to manage my self-care
- 3 Can you perform your usual activities (e.g. work, study, housework, family or leisure activities) as you wish or need?**
- I have no problems with performing my usual activities
- I have some problems with performing my usual activities
- I am unable to perform my usual activities
- 4 Do you ever feel pain or discomfort?**
- I have no pain or discomfort
- I have some pain or discomfort
- I have extreme pain or discomfort
- 5 Are you ever anxious or depressed?**
- I am not anxious or depressed
- I am moderately anxious or depressed
- I am extremely anxious or depressed
- 6 Are you able to establish and maintain relationships with people as you wish or need?**
- I have no limitations in my relationships with people
- I have some limitation in my relationships with people
- I have severe limitations in my relationships with people

To be completed by the client

In your everyday life, you will encounter problems related to your disability or handicap that affect your life. With this question we want to ask you about the influence that these problems have on your life. Could you estimate to what extend these problems affect your life?

Please answer the question “How much do your problems interfere with your life?” by drawing a line from the question to the most appropriate point on the scale. 0 represents the best imaginable state (Your problems do not interfere with your life at all) and 100 represents the worst imaginable state (Your life is totally affected by your problems). Please consider your everyday life in this period of your life (the last couple of weeks).



To be completed by the interviewer after the interview

Interviewer:

Date of first interview

This first interview took minutes

This first interview was administered after the following steps of the service delivery had (more or less) been completed:

- z Initiative (The first contact)
- z Assessment (Evaluation of needs)
- z Typology (Choice of appropriate kind of assistive technology)
- z Selection (Selection of specific device)
- z Authorisation (Obtaining funding)
- z Delivery (Getting the device to the user)

What is your impression of how difficult this assessment was to the respondent?

.....
.....
.....

Remarks or observations

.....
.....
.....
.....

09.12.03	Commode chairs (with or without castors)
09.12.06 - 09.12.24	Toilets and toilet adaptations
09.33.03	Bath/shower chairs (with and without wheels), stools, backrests and seats
12.03	Walking aids manipulated by one arm
12.06	Walking aids manipulated by both arms
12.09	Special cars
12.12	Car adaptations
12.15	Mopeds
12.18	Cycles
12.21.03 - 12 21.18	Manual- (or foot-) driven wheelchairs
12.21.21 - 12.21.30	Motor-driven wheelchairs
18.18	Support devices
21.03	Optical aids
21.06	Opto-electronic aids
21.09	Input and output devices and accessories for computers, typewriters and calculators
21.12	Computers
21.36	Telephones and aids for telephoning
21.39	Sound transmission systems
21.42.03	Letter and/or symbol sets
21.42.06	Letter and/or symbol boards
21.42.09	Portable dialogue units
21.42.12	Non-portable devices for face-to-face communication
21.42.15	Voice amplifiers for personal use
21.42.18	Communication amplifiers
21.42.24	Software for face-to-face communication
21.45	Hearing aids

APPENDIX 3: the questionnaire for the second assessment (IPPA and EATS-6D)

To be completed by the interviewer

Registration no. client

What kind of Assistive device (or service) has the client received after the first interview:

ISO ____ . ____ . ____

ISO ____ . ____ . ____

ISO ____ . ____ . ____

ISO ____ . ____ . ____

To be completed by the client

Have there been important changes in your disability, not related to the use of the assistive device (or service) since the first interview?

Yes →→ Improved
 Impaired

No

Have you received any other intervention since the first interview?

- Medical
- Physiotherapy
- Occupational therapy
- Speech training
- Other
- None

Have you received any home adaptations or assistive devices other than through our service delivery after the first interview?

ISO ____ . ____ . ____

ISO ____ . ____ . ____

ISO ____ . ____ . ____

To be completed by the client

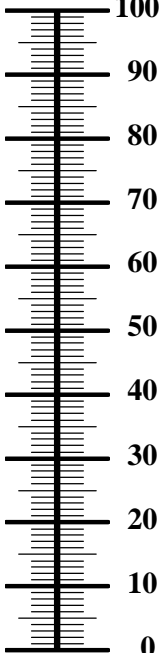
Please indicate which statements best describe how you feel in this period of your life (the last couple of weeks), by ticking the appropriate boxes. Tick only one box for each of the six questions below.

- 1 Are you able to move about as you wish or need?**
- I have no problems in moving about
- I have some problems in moving about
- I am unable to move about
- 2 Can you manage your personal self-care as you wish or need? (e.g. wash, dress, take care of yourself)**
- I have no problems in managing my self-care
- I have some problems in managing my self-care
- I am unable to manage my self-care
- 3 Can you perform your usual activities (e.g. work, study, housework, family or leisure activities) as you wish or need?**
- I have no problems with performing my usual activities
- I have some problems with performing my usual activities
- I am unable to perform my usual activities
- 4 Do you ever feel pain or discomfort?**
- I have no pain or discomfort
- I have some pain or discomfort
- I have extreme pain or discomfort
- 5 Are you ever anxious or depressed?**
- I am not anxious or depressed
- I am moderately anxious or depressed
- I am extremely anxious or depressed
- 6 Are you able to establish and maintain relationships with people as you wish or need?**
- I have no limitations in my relationships with people
- I have some limitation in my relationships with people
- I have severe limitations in my relationships with people

To be completed by the client

In your everyday life, you will encounter problems related to your disability or handicap that affect your life. With this question we want to ask you about the influence that these problems have on your life. Could you estimate to what extend these problems affect your life?

Please answer the question “How much do your problems interfere with your life?” by drawing a line from the question to the most appropriate point on the scale. 0 represents the best imaginable state (Your problems do not interfere with your life at all) and 100 represents the worst imaginable state (Your life is totally affected by your problems). Please consider your everyday life in this period of your life (the last couple of weeks).

<p>How much do your problems interfere with your life?</p>	<p>Totally</p>  <p>Not at all</p>
---	--

09.12.03	Commode chairs (with or without castors)
09.12.06 - 09.12.24	Toilets and toilet adaptations
09.33.03	Bath/shower chairs (with and without wheels), stools, backrests and seats
12.03	Walking aids manipulated by one arm
12.06	Walking aids manipulated by both arms
12.09	Special cars
12.12	Car adaptations
12.15	Mopeds
12.18	Cycles
12.21.03 - 12 21.18	Manual- (or foot-) driven wheelchairs
12.21.21 - 12.21.30	Motor-driven wheelchairs
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21.03	Optical aids
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21.09	Input and output devices and accessories for computers, typewriters and calculators
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21.42.15	Voice amplifiers for personal use
21.42.18	Communication amplifiers
21.42.24	Software for face-to-face communication
21.45	Hearing aids

To be completed by the interviewer after the interview

Interviewer:

Date of second interview

This second interview took minutes

What is your impression of how difficult this assessment was to the respondent?

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Remarks or observations

.....
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.....

APPENDIX 4: evaluation form for feasibility aspects

To be completed by the interviewer after the interview

Interviewer:

Date of first interview

This first interview took minutes

This first interview was administered after the following steps of the service delivery had (more or less) been completed:

- z Initiative (The first contact)
- z Assessment (Evaluation of needs)
- z Typology (Choice of appropriate kind of assistive technology)
- z Selection (Selection of specific device)
- z Authorisation (Obtaining funding)
- z Delivery (Getting the device to the user)

What is your impression of how difficult this assessment was to the respondent?

.....
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.....

Remarks or observations

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APPENDIX 5: procedure for translation of instruments

Guidelines to preserve equivalence in the translation and cross-cultural adaptation of instruments (and accompanying manuals) within EATS

We are planning to use the same set of instruments in different countries. To guarantee that these instruments measure exactly the same things in all of the participating countries, we have to ensure semantic, idiomatic, experiential and conceptual equivalence. To achieve this we need to follow certain guidelines when translating instruments and manuals (from our native languages into English and) from English into our native languages. In theory it would be best to leave out the intermediate of an English version, because every translation an instrument goes through, introduces (a chance of) deviations. However, we are not only translating the instruments, we are also developing them together. For practical reasons we should consider the English versions (on which we work together) as the basic versions. This might introduce some minor deviations, since none of us speaks English as his/her mother tongue. But when the following guidelines are being followed, these deviations will come to light later on.

The following is mainly based on (or quoted from):

Guillemin, Bombardier, Beaton: Cross-cultural adaptation of health-related quality of live measures: Literature review and proposed guidelines (J Clin Epidemiol Vol. 46, No. 12, pp. 1417-1432, 1993).

If a transposition of a measure is done by simple translation, it is unlikely to be successful because of language and cultural differences. The perception of 'Quality of Life' and the ways health problems are expressed (and dealt with) vary from culture to culture. Therefore, cross-cultural adaptation has to consist of two components:

1. Literal translation of individual words and sentences from one language into another;
2. Adaptation with regard to idiom, cultural context and lifestyle

In order to preserve the sensibility of the tool in the target language and culture, we should stick to the following guidelines when translating an English version into our own native language. This procedure has to be applied to the entire instrument, including the manual, the introduction, the instructions, the questions and (when the questions are not open-ended) the answers.

1. Translation

Two (or more) different translators make, independently of each other, a translation of the English version into your own language. At least one of them has to be familiar with assessing outcome in the field of AT. The translators should be native speakers of the target language (your own language). They do not necessarily have to be qualified translators. You can do this part yourselves.

2. Back-translation

As a check, each first translation is back-translated into the source language (English). The back-translator should be a qualified translator, who is a native speaker of English. The back-translator does not have to be familiar with the subject of assessing outcome in the field of AT.

3. Committee review

A committee, consisting of the translators, the back-translator(s) and yourselves compares the original English version with the translations and the back-translations. The committee discusses all points where a difference occurs between (one of) the back-translations and the original. The committee produces one final version in the target language.

4. Pre-testing

To check for face-validity, the final version is discussed with at least two people from the intended group of respondents (AT users) and at least two of the professionals from the intended group of interviewers.

5. Weighting of scores

If the scoring method of the instrument to be translated uses weights, these weights should be “translated” to the target culture. The way different aspects are weighted may differ from culture to culture. However, this is not relevant in this study, since none of the instruments uses predetermined weighting factors.

APPENDIX 6: the SIP68

SIP

68

Sickness impact profile

Shortened version

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Instructions when the questionnaire is used in an interview

Below you will find the instructions that must be read to the respondent before you begin with the questionnaire.

“Before we begin with the actual questionnaire, I’ll read the instructions to you.

Daily life consists of a number of activities. Sometimes you can carry out all these activities. It is possible, however, that you don’t do a number of these activities in the usual way as a result of your illness or handicap. You may have stopped doing some activities altogether, or you may do them differently or for a shorter period of time. We are interested in the types of changes in your activities which are related to your state of health. These changes may have occurred only recently or they may have taken place some time ago.

The list that I will be reading to you shortly consists of a large number of statements that have something to do with day-to-day activities and changes in these activities. I will pause briefly after each statement. When a statement applies to you and is related to your state of health, please indicate this to me. I will mark an X in the front of this statement and read the next one.

Let me give you an example. One of the statements is: “I stay home most of the time.” If this statement applies to you today as a result of your state health, you say "yes". Even if you have already stayed home as a result of your health for a longer period of time, you say "yes". If you're staying at home today because you feel like reading a book or because the weather is bad, than you say "no". In this case the fact that you are staying home is not related to your health but to the weather or to reading a book.

If you are in hospital today, you will not be able to do a number of activities which you usually do. Statements which describe dropping these activities can be answered with "yes".

I will now start reading the questionnaire out to you. Please do not hesitate to let me know if I am reading too fast, if you can’t understand me, if you like a statement repeated, or if you need more time to think. If the procedure is not clear, we can take another look at the instructions.”

Instructions when the questionnaire is filled out by the respondent

PLEASE READ THE INSTRUCTIONS CAREFULLY BEFORE YOU START FILLING OUT THE QUESTIONNAIRE.

Daily life consists of a number of activities. Sometimes you can carry out all these activities. It is possible, however, that you don't do a number of these activities in the usual way as a result of your illness or handicap. You may have stopped doing some activities altogether, or you may do them differently or for a shorter period of time. We are interested in the types of changes in your activities which are related to your state of health. These changes may have occurred only recently or they may have taken place some time ago.

Read the Statements one by one and determine if they are applicable to your situation today. Also determine if the statement applies to you because of your state of health. If this is the case, mark a cross in front of the statement and go on to the next one.

For example, one of the statement is:

I stay home most of the time

If this statement is true and related to your state of health, mark an x in front of it.

I stay home most of the time.

You mark an x, even if you have stayed home as a result of your state of health for a longer period of time. Don't mark an x if you're spending most of your time at home because you want to read a book, or because the weather is bad. In this case, your being at home a lot is not related to your state of health but to the weather or to wanting to read a book.

If you are in hospital today, you will not be able to do a number of activities that you would normally do. Those statements which describe dropping these day-to-day activities can be marked with an x.

In short:

⇒ Statements can concern changes that have occurred recently or some time ago

⇒ Mark only those statements that describe a change in behaviour that is related to your state of health

⇒ Mark only those statements that apply to you entirely

⇒ Do not mark statements that only partially apply to you

You may take a break, but it is important that you finish the questionnaire in one day. Please do not consult others on any of the statements. We are interested in what you think.

You may begin filling out the questionnaire. Read the statements carefully and determine if they describe your situation and if they are related to your state of health.

PLEASE RESPOND TO ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND
ARE RELATED TO YOUR STATE OF HEALTH

- 1 _ I get around in a wheelchair
- 2 _ I get dressed only with someone's help
- 3 _ I do not move into or out of bed by myself, but am moved by another person or technical aid
- 4 _ I stand up only with the help someone's help
- 5 _ I do not fasten my clothing, for example require assistance with buttons, zippers, shoelaces
- 6 _ I do not walk at all
- 7 _ I do not use stairs at all
- 8 _ I make difficult moves with help, for example, getting into or out of cars, bathtub
- 9 _ I do not bathe myself completely, for example, require assistance with bathing
- 10 _ I do not bathe myself at all, but am bathed by someone else
- 11 _ I do not have control of my bladder
- 12 _ I am very clumsy in body movements
- 13 _ I do not have control of my bowels
- 14 _ I feed myself with help from someone else
- 15 _ I do not maintain balance
- 16 _ I use bedpan with assistance
- 17 _ I am in a restricted position all the time

PLEASE RESPOND TO ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH

- 1 I go up and down stairs more slowly, for example one step at a time, stop often
- 2 I walk shorter distances, or stop to rest often
- 3 I walk more slowly
- 4 I use stairs only with mechanical support, for example the handrail, cane crutches
- 5 I walk by myself but with some difficulty, for example, limp, wobble, stumble, I have a stiff leg
- 6 I kneel, stoop bend down only by holding on to something
- 7 I do not walk up or down hills
- 8 I get in and out of bed or chairs by grasping something for support, or using a cane or walker
- 9 I stand only for short periods of time
- 10 I dress myself, but do so very slowly
- 11 I have difficulty doing handwork, for example turning faucets, using kitchen gadgets, sewing, carpentry
- 12 I move my hands or fingers with some limitation or difficulty

PLEASE RESPOND TO ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH

- 1 I have difficulty reasoning and solving problems, for example making plans, making decisions, learning new things
- 2 I have difficulty doing activities involving concentration or thinking
- 3 I react slowly to things that are said or done
- 4 I make more mistakes than usual
- 5 I do not keep my attention on my activity for long
- 6 I forget a lot, for example, things that happened recently, where I put things, appointments
- 7 I am confused and start several activities at a time
- 8 I do not speak clearly when I am under stress
- 9 I have difficulty speaking, for example, get stuck, stutter, stammer, slur my words
- 10 I do not finish thing I start
- 11 I am having trouble writing or typing

PLEASE RESPOND TO ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH

- 1 My sexual activity is decreased
- 2 I am cutting down the length of visits with friends
- 3 I am drinking less fluids
- 4 I am doing fewer community activities
- 5 I am doing fewer social activities with groups of people
- 6 I am going out for entertainment less often
- 7 I stay away from home only for brief periods of time
- 8 I am eating much less than usual
- 9 I am not doing heavy work around the house
- 10 I do my hobbies and recreation for shorter periods of time
- 11 I am doing less of the regular daily work around the house than I would
- 12 I am cutting down on some of my usual inactive recreation and pastime, for example watching TV, playing cards,
reading

PLEASE RESPOND TO ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH

- 1 _ I often act irritable towards those around me, for example snap at people, give sharp answers, criticise easily
- 2 _ I act disagreeable to family, for example, I act spiteful, I am stubborn
- 3 _ I have frequent outbursts of anger at family members, for example, strike at them, scream, throw things at them
- 4 _ I act irritable and impatient with myself, for example, talk badly about myself, swear at myself, blame myself for things that happen
- 5 _ I am not joking with family members as I usually do
- 6 _ I talk less with those around me

PLEASE RESPOND TO ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH

- 1 I am not doing any of the shopping that I would usually do
- 2 I am not going into town
- 3 I am not doing any of the house cleaning that I would usually do
- 4 I am not doing any of the regular work around the house that I would
- 5 I stay home most of the time
- 6 I am not doing any of the clothes washing that I would usually do
- 7 I am not going out to visit people at all
- 8 I am getting around only within one building
- 9 I have given up taking care of personal or household business affairs, for example paying bills, banking working
on budget
- 10 I do not get around in the dark or in unlit places without someone's help