

The New, Adapted German Microcensus and the Integrated Labour Force Survey – User-specified Solutions with Blaise

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1. Introduction

The Microcensus, with approx. 820,000 respondents, is by far the largest official household questionnaire in Germany. It also integrates the EU's Labour Force Survey, which must be carried out in all Member States.

Up until and including 2004, each set of Microcensus data was collected in a fixed report week. As a result of the ever-accelerating processes of change among the population, however, the data obtained had already lost much of their topicality by the time they were published.

As a reaction to this, Council Regulation (EC) on the organisation of a labour force sample survey in the Community stipulated back in 1998 that collection should be spread evenly over all calendar weeks of a year. What is more, average quarterly and annual results were to be reported to Eurostat. This requirement was transposed into national law by the Microcensus Act (Mikrozensusgesetz) as on 1 January 2005, and hence was used for the first time in the 2005 Microcensus survey.

The major goals of this continuous collection were the improved topicality and quality of the data collected, as well as the concrete implementation of the requirements of the EU Labour Force Survey.

2. Conception

Because of the federalist structure of the Federal Republic of Germany, the Microcensus is only carried out locally by the individual Federal Länder, the Federal Statistical Office being obliged to provide the collection tools to the Länder.

In order to be able to change from a collection which is partially carried out in paper form to a procedure which is completely computer guided, all the Land Statistical Offices had to be converted to a uniform operating system (Windows XP). Each Land obtained for itself the requisite number of laptops and tablet PCs.

To implement the collection during the year, it was necessary to develop programs which were suitable for use on laptops, i.e. to collect the data, as well as for processing of the data at the Land Office.

We were able to use only the interview program which had been previously deployed as a Blaise program, and which had to be adjusted to the conditions encountered in continuous surveys. The organisation papers, in other words the total logistical information as to who must be asked which questions and at what time, was previously sent to the interviewer by post and returned by post after completion. Now it had to be completely re-developed, and particular account had to be taken of data protection. In addition, a routine had to be developed which could assign the corresponding organisation paper to the interview without the personal data, such as name or address, being stored in the interview. Since some households prefer to complete a written questionnaire (a "self-completion sheet"/

“Selbstaussfüllerbogen”) instead of the personal interview, a possibility also had to be created here to incorporate these self-completion sheets into the new structure.

Since neither the Microcensus nor the European Union's Labour Force Survey is a voluntary questionnaire in Germany, but both are obligatory, major questions emerged as to the process-orientated structure in conversion to a continuous survey. A list of all of them does not fall within the framework of this talk.

It should be pointed out that the interviewers deployed are not staff of the Statistical Offices, but work on a freelance basis, and in many cases have inadequate PC knowledge. The program had to be made as user-friendly as possible for these interviewers. It was therefore necessary amongst other things to organise training for the interviewers, who were to learn about both the specialist Microcensus-specific aspects and be taught how to use the laptop and the program. The organisation papers previously available in paper form were to be implemented one-to-one in the Blaise model, so that the interviewers did not have to make further adjustments in the introduction to continuous surveys, and the recognition value for them was high.

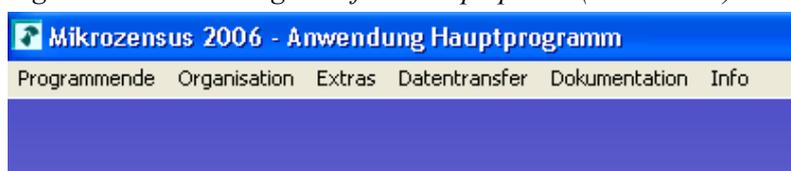
Further, it was important to clarify how and by what means the data transmission between the Land Statistical Offices and the interviewers was to take place.

The greatest handicap in building up a data administration with BLAISE unfortunately proved to be the lack of a Blaise Component Pack.

3. Implementation

In view of the different tasks which the interviewers and the Land Offices have to perform, we developed a program which also displays different menus, depending on the start function used for launching the program.

Figure 3.1 Menu navigation for the laptop user (interviewer)



The organisation papers (such as the *building list - Gebäudeliste*, the *household characteristics - Haushaltsmerkmale*, the *distribution list - Verteilungsliste*, the *notes - Notizen*, the *final report - Notizen* and the *permanent sample - Dauerstichprobe*), are shown in the laptop program under the menu item "**ORGANISATION**". These organisation papers contain the protected personal data, which must be stored separately from the interview. They are also input to the survey's logistical process.

An interview can only be implemented if the address is available in the organisation papers. The laptop user can only access the interview via the menu item "Organisation".

Under the menu item "**TOOLS**", one can find the tools "Save", the display of the "Delete list" and the "View of all interviews". The latter tool shows the remaining "Incorrect households/accommodation units".

The menu item "**DATA TRANSFER**", which has been completely newly developed for the electronic data dispatch, contains the tools "Send data", "Receive work packages/data", "Input work packages/data", "Send errors", "Update errors", "Info text" and finally the tool "Start again".

All the information that is important for the interviewer is kept in pdf. format in the penultimate menu item "**DOCUMENTATION**". This is to make the special knowledge of the Microcensus, as well as the labour force statistics, understandable for the interviewer. The most important point in this context is the instructions for the laptop, which describe the use of the laptop program and are thought of as a help function.

Using the tool "*Information from Land Office*", the Land Office can specifically transmit its own reports to the interviewer (e-mails are not currently permitted for reasons of data protection).

The last menu item "*Info*" shows the interviewer the respectively valid version number of the program on the laptop.

Figure 3.2 View of version number



Figure 3.3 Menu navigation for the Land Office application



The menu item "**ORGANISATION**" corresponds to that of the laptop application.

The menu item "**INTERVIEW**" contains the tools "*Process interviews*", "*Count incorrect surveys*", "*Count households/districts*", "*Count clean households*", "*Print notes*", and the tool "*Delete list*".

Under the menu item "**SAVE/BACK**", it is possible to backup data to a drive that can be selected at will, and to transfer data back.

Under the completely newly-designed menu item "**EXPORT**" one finds the tool "*Export to ASCII*", which facilitates the export of the interviews and of the organisation data from BLAISE format to ASCII. The tool "*Export to Excel*" makes it possible to export both the Microcensus data and the organisation papers for a quick check to Excel using freely-selectable parameters. The "*Final report*", which shows the conclusion of a district by the interviewer, is also shown for further processing to Excel.

Several fields are also integrated here in which the interviewers can make direct entries on invoicing.

The "*Export permanent sample*" tool exports addresses of households which have volunteered for further statistics.

The last export tool is the "*Export plausibility check*". The survey program is equipped with up to 260 plausibility checks. A record is kept in the background of which plausibility check was set off how often. This file is exported here and sent

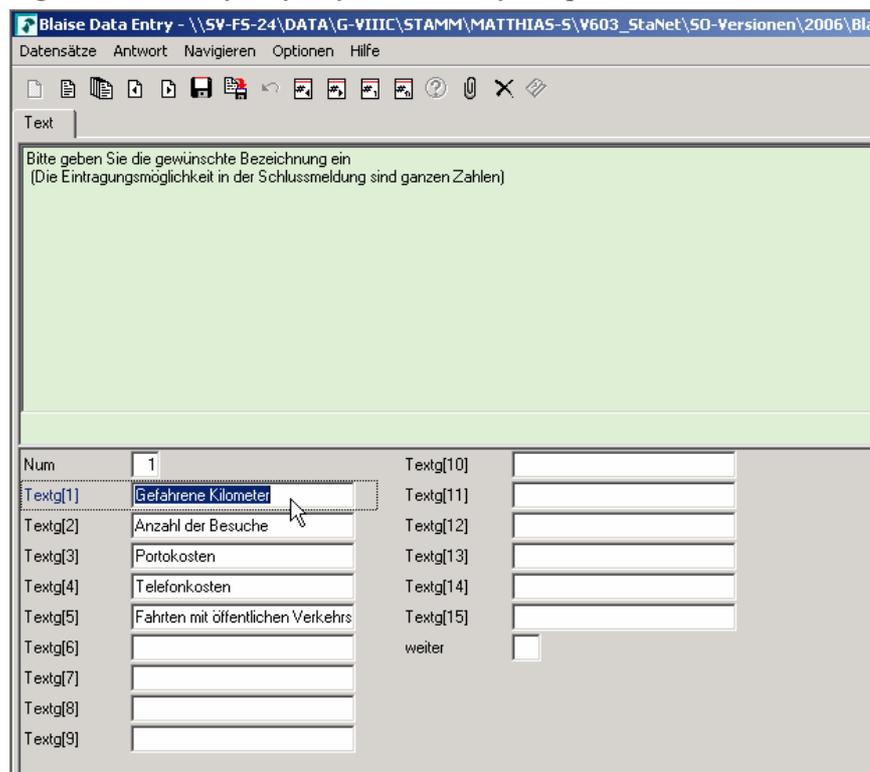
to the BLAISE TEAM of the Federal Statistical Office, and is used as the basis for improving the question structure, and hence also for improving quality in a new question program.

The menu item "**COMBINE DATA**" comprises the possibility to combine all data transmitted by the interviewers into the existing stock.

The menu item "**ADMINISTRATION**", with the tool "*Staff in the Land Statistical Office*", offers the possibility to define the distribution of rights and ID of the interviewers and staff of the Land Statistical Office.

The "*Final report texts*" tool affords the Federal Länder the possibility to freely design the texts appearing in the final report, and hence also of the invoicing procedure.

Figure 3.4. View of the free formulation of the question texts



The tool "*Combine all data*" is then needed in case of interviewer absenteeism for instance as a result of illness, or if data are lost in transfer. We built in this tool as an additional security. This also allows us to incorporate those interviews in the overall stock which have not yet been released for further processing by the interviewer. This menu item is exclusively provided for the exceptional case. In fact, the last existing data item of the interviewer in question must once more be copied into the folder "Data dispatch/receipt". With the menu item "Combine all data", these data are then input into the overall stock. Data items subsequently received on these districts are rejected since the final report is already available in the Land Office.

The hospital run of BLAISE is launched with the "*Hospital*" tool.

The "*New model*" tool is also provided only for the exceptional case, and is only needed if a new model must be delivered. The available data are saved and after installation are adjusted to the new model and played back once again (Blaise to Blaise).

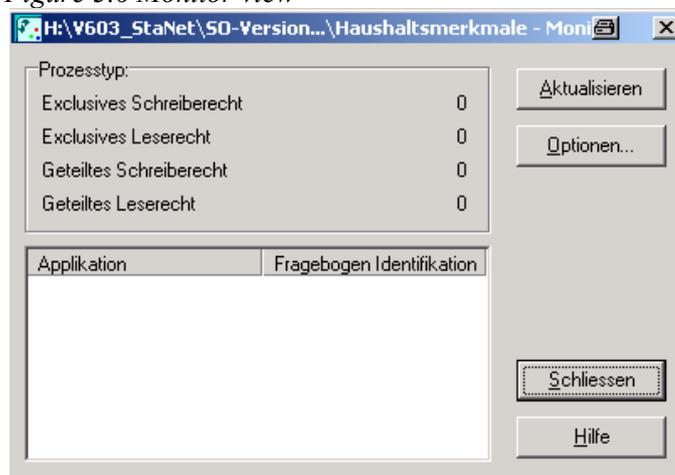
There are steps in the Land Office in which it is necessary to be alone in the Blaise system. This can be ascertained using the "Monitor" tool without having to leave one's workplace.

It is possible here to select between the various organisation programs (Gebäude, Haushaltsmerkmale, Verteilungsliste), the interview (Interview), the final report (Schlussmeldung) or the permanent sample (Dauerstichprobe).

Figure 3.5 Dialogue view



Figure 3.6 Monitor view



The final "Annual transition data export" tool serves to take on into the next year and process interviews of one year which have not yet been dealt with.

The menu items "DOCUMENTATION" and "INFO" have the same functionalities as in the laptop application.

4. Brief description of the functions

4.1. Work packages

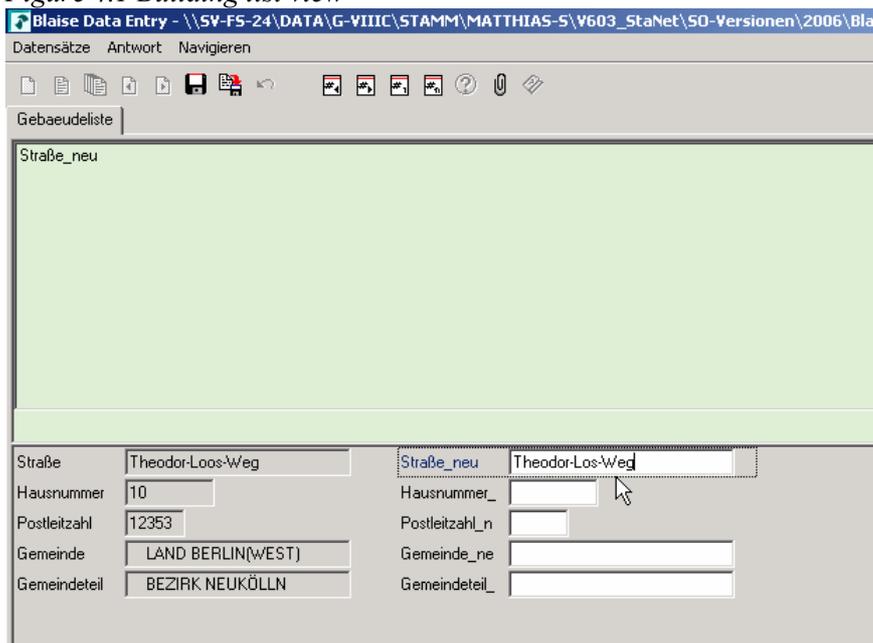
The Land Statistical Office in question sends interviewers one or several work packages to their laptops. When logging onto the laptop, a routine examines whether a work package is available for the interviewer. The interviewer calls up the work package via the menu item "Receive data"; if the transmission was successful, he/she calls up the menu item "Input work package". The work packages provide the interviewers with all the important information, such as the address of the households to be interviewed.

Since a household is asked once per year in four consecutive years, a variety of approaches had to be planned.

4.2. Building list

The interviewer therefore calls up the building list on the first survey and examines whether all the information in the address is correct, or whether there are deviations. In this case, he/she can make changes which are sent along the next time the data are transmitted to the Land Statistical Office. The Land Statistical Office then determines whether the changes are to be accepted for future use.

Figure 4.1 Building list view

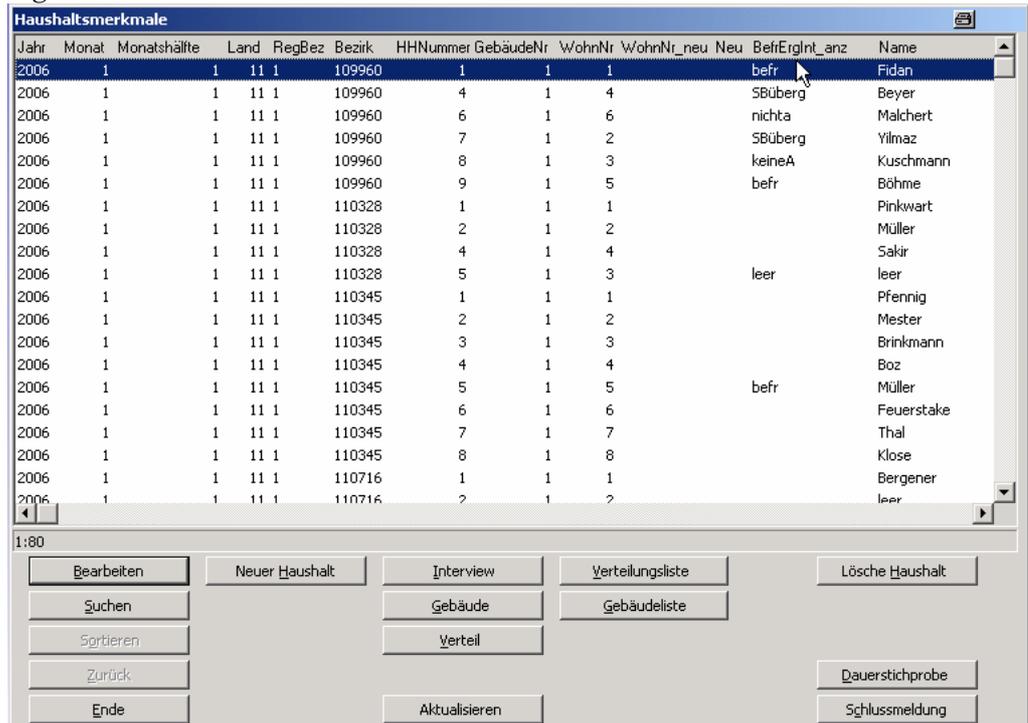


It is now possible to change from the building list directly to the household characteristics.

4.3. Household characteristics

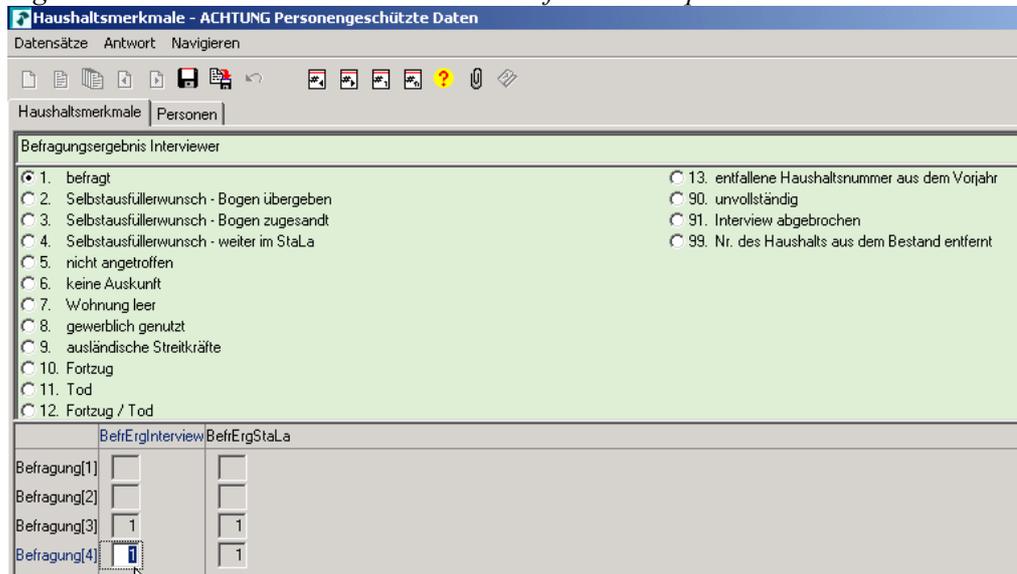
In the overview of the household characteristics the interviewer can see the entire district, in this instance district "109960", at a glance. Under the item "Questionnaire result of the interviewer (*BefrErgInt_anz*)", he/she can see the status of the individual households, here "responded (*befr*)".

Figure 4.2 Household characteristics view



The existing, unchangeable household data can be added to at the item "Edit". With an initial survey, amongst other things the names of the persons in the household and the telephone number are determined here. Finally, the interviewer enters the result of the survey. In the following year, the data of the previous year are automatically shown, and need only be updated.

Figure 4.3 Household characteristics/result of interview questionnaire view

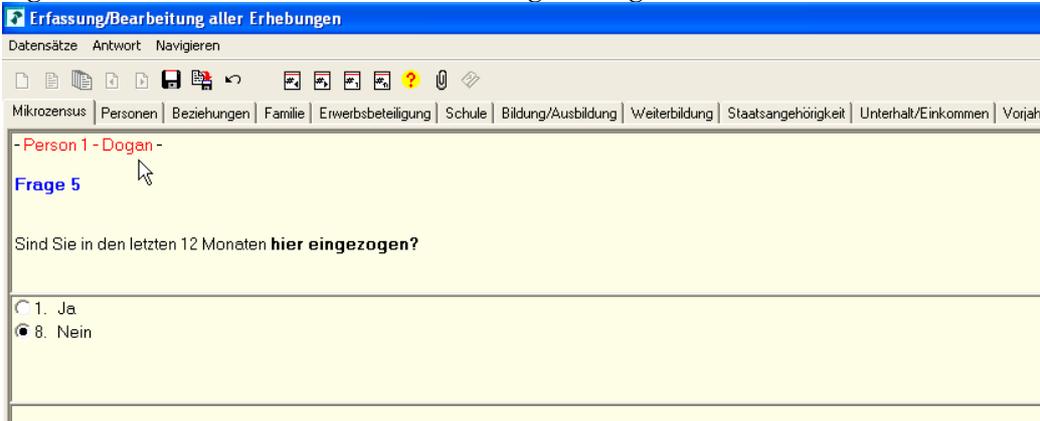


The interviewer can now call up the actual interview directly from the household characteristics.

4.4. Interview

All unprotected data are automatically inserted into the interview here. As an aid for the interviewer, the respective "Forename" is shown during running. The name is however not stored along with the data.

Figure 4.4 Interview view – Forename during running

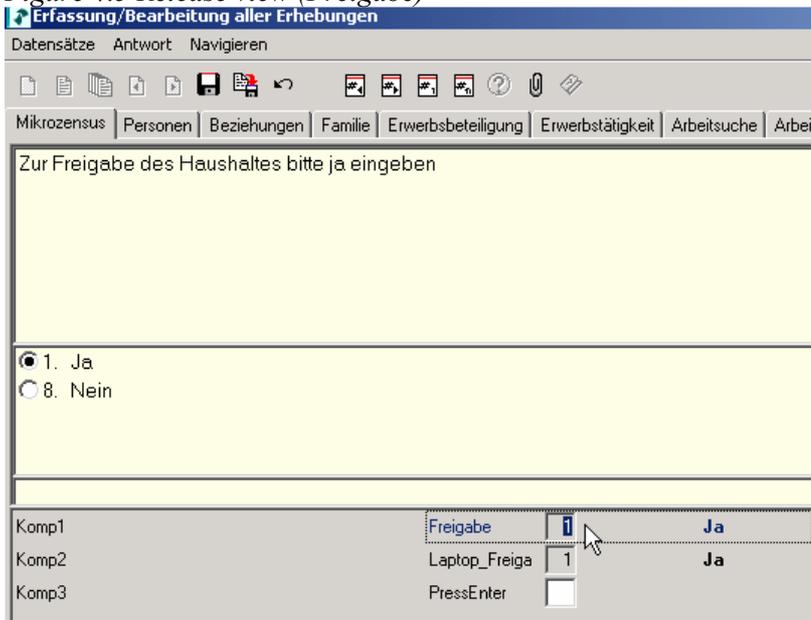


4.5. Release

Datasets which have been completely processed by the interviewer must be marked for transmission to the Land Statistical Office. The possibility is offered to release the dataset as soon as the household data have been entered.

"Released" means that in the view of the interviewer the dataset has been completely processed and can be sent to the Land Office. These can be complete interviews, or indeed interviews which have been interrupted.

Figure 4.5 Release view (Freigabe)



For safety, so that it is not possible to accidentally release a household that is not yet ready, the question is asked twice. It absolutely must be confirmed twice by entering a "1", as otherwise the release is not effective!

When the interviews are entered in the Land Office, the "Release" field is automatically pre-set at "8" (No) since no further release or transmission is necessary.

After this, the interviewer can no longer change anything about the interview. He/she can call up the dataset again, but it is then read-only and no more changes can be made.

4.6. Send data

All interviews that have been released are sent to the Land Statistical Office using the "Send data" tool. The complete stock of the organisation papers available is always sent. An automatic test is now carried out in the Land Office to determine whether any datasets with the same ID already exist. If there is no dataset with the same ID, it is incorporated into the overall stock.

4.7. Distribution list

The "Distribution list" provides the interviewer with an additional overview as an orientation tool which always shows him/her a complete district.

Figure 4.6 Distribution list view (Verteilungsliste)

	Lage_H	Name_H	Vorname_H	HHNummer_H	Gebäudenr_H	Wohnnr_H	ZahlPers_H	HHZahl_H	Ergeb_Int	Ergeb_Stala	Freigabe
Haushalt[0]											
Haushalt[1]	2.mi	Fidan	Dogan	1	1	1	4	1	1	1	
Haushalt[2]	7.li	Beyer	Markus	4	1	4			1	1	
Haushalt[3]	7.re	Malchert	Klaus	6	1	6			2		
Haushalt[4]	2.li	Yilmaz	Hikmet	7	1	2			10	10	
Haushalt[5]	2.re	Kuschmann	Uwe	8	1	3			1	1	
Haushalt[6]	7.mi	Böhme	Dieter	9	1	5			1	1	
Haushalt[7]											
Haushalt[8]											
Haushalt[9]											
Haushalt[10]											

In addition to the selection district, the address, the name (*Name_H*), the household number (*HHNummer_H*), the building number (*Gebäudenr_H*), the apartment number (*Wohnnr_H*), the number of persons in the household (*ZahlPers_H*) and the interviewer's questionnaire result (*Ergeb_Int*), it also is shown whether the household has been released (*Freigabe*) for dispatch to the Land Statistical Office.

4.8. Delete list

The interviewer has six weeks to work through a work package. After five weeks, he/she receives a reminder when starting up the laptop that the datasets will be deleted from the laptop in one week. Having said that, only selection districts are checked here of which no final report is yet available.

The "Delete list" tool shows the interviewer all districts available on the laptop, as well as their deletion dates. The same tool can be used in the Land Statistical Office to check when which districts are to be deleted from the interviewers' laptops.

Figure 4.7 Deletion date view (Löschdatum)

Bezirke mit ihrem Löschdatum									
Jahr	Monat	Monatshälfte	Land	RegBez	Bezirk	LöschDatum	Gemeinde	Straße	
2006	1	1	11	1	109960	15.02.2006	LAND BERLIN(WEST)	Theodor-Loos-Weg	
2006	1	1	11	1	110328	15.02.2006	LAND BERLIN(WEST)	Fritz-Erler-Allee	
2006	1	1	11	1	110345	15.02.2006	LAND BERLIN(WEST)	Martin-Wagner-Ring	
2006	1	1	11	1	110716	15.02.2006	LAND BERLIN(WEST)	Aronsstr.	
2006	1	1	11	1	110743	15.02.2006	LAND BERLIN(WEST)	Löwensteinring	
2006	1	1	11	1	110754	15.02.2006	LAND BERLIN(WEST)	ROSEGGERSTR.	
2006	1	1	11	1	110769	15.02.2006	LAND BERLIN(WEST)	Zwickauer Damm	
2006	1	1	6	4	411264	23.02.2006	414 WIESBADEN LANDESH.-ST.	HESSENRING	
2006	1	1	6	4	411700	23.02.2006	414 WIESBADEN LANDESH.-ST.	Rheintalstr.	

The Land Statistical Office can naturally change the processing date at any time, and hence also the deletion date. Short processing times, on the one hand, and as even a spread of the surveys over the whole year as possible, on the other, can lead to a situation in which the interviewer cannot reach a household in the set time. The Land Statistical Office can however continue the questionnaire after it has been released by the interviewer. This also includes the self-completion sheets in paper form, which can be input in the BLAISE program in the Land Statistical Office.

4.9. Final report

So that the Land Statistical Offices know when a selection district has been completely processed by the interviewer, the interviewer must call up and complete a so-called "final report" for its district. Only the interviewers ultimately know when all their households in a district have been completely processed. At this point, a check is also made to see whether there are datasets in the material which have not been released. Should this be the case, an information message appears to say that the district cannot be released for this reason.

Figure 4.8 Final report view



It is then possible to look at and appropriately process the as yet unreleased interviews in a dialogue view.

Figure 4.9 Final report view

Jahr	Monat	Monatshälfte	Land	RegBez	Bezirk	HHNumber	Freigabe
2006	1	1	6 4	460961			1
2006	1	1	6 4	460961			2
2006	1	1	6 4	460961			3
2006	1	1	6 4	460961			4
2006	1	1	6 4	460961			5
2006	1	1	6 4	460961			6
2006	1	1	6 4	460961			7
2006	1	1	6 4	460961			8
2006	1	1	6 4	460961			9
2006	1	1	6 4	460961			10
2006	1	1	6 4	460961			11
2006	1	1	6 4	460961			13
2006	1	1	6 4	460961			14

Once released, the final report can only be opened by the interviewer in read-only form.

This final report is sent to the Land Statistical Office with the other organisation papers.

Figure 4.10 Final report view

Schlussmeldung des Interviewers zum Auswahlbezirk

Datensätze Antwort Navigieren

Schlussmeldung

Datum der Bezirkfreigabe angeben(TT.MM.JJJJ)

Interviewer: 4099

Freigabe: 1 **Ja**

BezFrei: 21.01.2006

Bestand: 1 **kompl**

DatZu:

4.10. Multi-user concept

We have also developed our own multi-user concept.

So that for instance there are no problems when entering or processing datasets in the interview or in the organisation papers, we have barred datasets which are being processed from access by other staff members. To do so, it was necessary to copy files into a temporary, user-specific file.

I would like to show you this using an example:

As soon as a member of staff calls up the building characteristics, a "personal" copy of the organisation papers is created for each staff member for them to work in.

"Personal copy" of the organisation papers means that the views, for instance of the household characteristics, are based on the copy created at this time.

Figure 4.11 View of "personal" copy of the organisation papers

Jahr	Monat	Monatshälfte	Land	RegBez	Bezirk	grNR	Gemeinde	Gemeindeteil
2005	4	1	5	1	16360	9	Duisburg	Vierlinden
2005	4	1	5	1	17050	22	Dinslaken	
2005	4	2	5	1	17751	11	Voerde	
2005	4	2	5	1	17896	9	Oberhausen	Klosterhardt-Sü
2005	5	1	5	1	17187	16	Oberhausen	Klosterhardt-Sü
2005	5	1	5	1	18585	6	Oberhausen	Lirich-Süd
2005	5	1	11	1	09216	0	LAND BERLIN	BEZIRK TIER
2005	5	1	11	1	09615	11	LAND BERLIN	BEZIRK TIER
2005	5	1	11	1	10431	0	LAND BERLIN	BEZIRK TIER
2005	5	2	11	1	09226	0	LAND BERLIN	BEZIRK TIER
2005	5	2	11	1	09623	33	LAND BERLIN	BEZIRK TIER
2005	5	2	11	1	10414	0	LAND BERLIN	BEZIRK TIER
2005	5	2	11	1	10420	0	LAND BERLIN	BEZIRK TIER
2005	6	1	11	1	09224	0	LAND BERLIN	BEZIRK TIER
2005	6	1	11	1	09229	15	LAND BERLIN	BEZIRK TIER
2005	6	1	11	1	09617	6	LAND BERLIN	BEZIRK TIER
2005	6	1	11	1	10432	5	LAND BERLIN	BEZIRK TIER

The staff however always make changes in the datasets in the original data material!

These changes are however only visible in the view masks when the "Update" button is pressed. This button repeats the copying of the data stocks, and the newly-changed data are shown.

Figure 4.12 "Update" view button

Jahr	Monat	Monatshälfte	Land	RegBez	Bezirk	HHNummer	GebäudeNr	WohnNr	WohnNr_neu	Neu	BefiErgInt_anz	Name
2006	1		1	11	1	109960	1	1	1		befr	Fidan
2006	1		1	11	1	109960	4	1	4		SBüberg	Beyer
2006	1		1	11	1	109960	6	1	6		nichta	Malchert
2006	1		1	11	1	109960	7	1	2		SBüberg	Yilmaz
2006	1		1	11	1	109960	8	1	3		keineA	Kuschmann
2006	1		1	11	1	109960	9	1	5		befr	Böhme
2006	1		1	11	1	110328	1	1	1			Pinkwart
2006	1		1	11	1	110328	2	1	2			Müller
2006	1		1	11	1	110328	4	1	4			Sakir
2006	1		1	11	1	110328	5	1	3		leer	leer
2006	1		1	11	1	110345	1	1	1			Pfennig
2006	1		1	11	1	110345	2	1	2			Mester
2006	1		1	11	1	110345	3	1	3			Brinkmann
2006	1		1	11	1	110345	4	1	4			Boz
2006	1		1	11	1	110345	5	1	5		befr	Müller
2006	1		1	11	1	110345	6	1	6			Feuerstake
2006	1		1	11	1	110345	7	1	7			Thal
2006	1		1	11	1	110345	8	1	8			Klose
2006	1		1	11	1	110716	1	1	1			Bergener
2006	1		1	11	1	110716	2	1	2			leer

1:80

Buttons: Bearbeiten, Neuer Haushalt, Interview, Verteilungsliste, Lösche Haushalt, Suchen, Gebäude, Gebäudeliste, Sortieren, Verteil, Zurück, Ende, Aktualisieren, Dauerstichprobe, Schlussmeldung

The processing of the households within a district, and the change to another district or to the appropriate distribution or building characteristics, takes place much faster if one works in a copy.

An automatic update of the data shown takes place on leaving the organisation papers. The next time it is opened, an up-to-date copy is created once more.

4.11. Update

If an update was developed by the Federal Statistical Office and successfully tested, this is provided to the Land Statistical Offices via a routine, and the Offices in turn pass it on to the laptop interviewers. When the interviewers send the data, which they are to do every working day, they receive a message as to whether an update is available. They must download the update and install it. This procedure only involves two mouse clicks for the interviewer. The old program is automatically copied to a temporary folder, the update is also automatically installed and tested. The interviewer can continue to work with the new version. If problems occur with the update, the interviewer can continue to work using the stored back-up version.

4.12. Combine data

I would now like to briefly explain to you how the files sent by the interviewers are input in the total stock of the Land Office by running the menu item "**COMBINE DATA**":

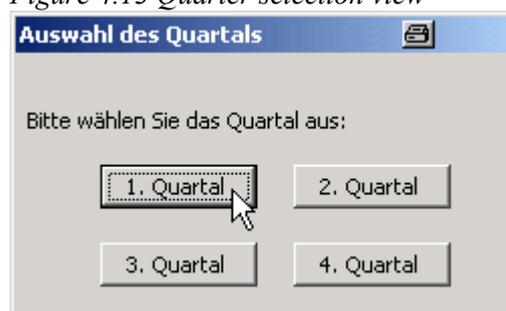
- All organisational data, as well as the previously-released final reports and interviews, are incorporated into the overall stock.
- If released interviews are found once data are input once more, the household characteristics, as well as the interview, are not overwritten.
- If the building data have already been inspected by staff, and the changes labelled with "accept" or "don't accept" in the "Orders" indicator, this building set is no longer overwritten the next time the combination function is carried out.
- As soon as a released final report is available in the dispatch package, it is accepted into the total stock.
- The next time interviewer data are combined, no input is carried out for the selection district for which a released final report is available in the Land Office!

N.B.: No final report can be established in the Land Office itself.

4.13. Export

Since the continuous survey necessitates that we no longer publish our data only annually, but also quarterly, we naturally also had to convert the data export functionality. When exporting the data, it is now possible to select the desired quarter which one would like to export. The corresponding datasets and the appropriate organisation data are then exported.

Figure 4.13 Quarter selection view



The collected organisational data from the first survey year are used for the follow-up questionnaires, and then only updated on an annual basis.

The data material created is used directly for expansion with Bascula. My colleague Kirsten Iversen will be explaining this to you in greater detail later.

4.14 Result

Looking back, it is possible to say that the introduction of the continuous Microcensus was a success. Although we only had the "Blaise Basic System" licence, the flexibility of BLAISE was very helpful to us in finding the necessary solutions.

Not all the functions ran perfectly from the start, but in the course of the year, we were able to incorporate many functions which served specialist purposes, or which improved the program, making a total of eight updates, without ever losing a dataset in Germany. We did underestimate the training needed on the new BLAISE application for the freelance interviewers and the staff of the Land Statistical Offices. Much more training will be necessary for these users in the following years.

Also with the 2006 Blaise application, we were able to implement new ideas once more which emerged from the first year of continuous application.

I would like to thank you for your generous attention, and also to wish all BLAISE developers continuing success.