Multimode Rental Survey In Norway.

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1 Introduction

In Statistic Norway we use a case management system called SIV. This is developed in Java and uses an Oracle database for storing data. In this system we don't store questionnaire data. The data is stored in a Blaise database. This database is used for CATI interviewing. When an interview attempt is finished we need to update the Oracle database with statuses (interview or non response), new addresses, new names, new telephone numbers etc. To do this we write to a BOI file that points to an Oracle table every time we finish an interview and return to the dialscreen. We use the ondialend event in CATI to do this. We write the status of the telephone attempt (interview, non-response) and if there is any change in the name, address, telephone number. If there is a change, SIV use the Blaise API to retrieve the new information. If someone changes the information in SIV it will be synchronised to the Blaise database using the Blaise API.

Statistics Norway collects data every year on housing and rent in private households throughout Norway. The purpose of the Housing and rent survey is to compile official statistics on rent levels in Norway for different types of dwellings and geographical areas. The questions concern monthly rents and dwelling characteristics. The size of the gross sample in the Housing and rent survey is 22 000 addresses. From the answers on the Housing and rent survey we select 2500 dwellings for The Rental survey.

The Rental survey is a monthly survey with twelve waves starting in January. The first wave is a telephone interview. In this interview we collect data about the rent for January and who owns the dwelling. These questions are for finding new tenants if the person we have interviewed moves from the dwelling and a new tenant move in. With this information we can ask the owner of the dwelling who lives there. This information we use for the whole year. We also ask for an e-mail address we can use to reach the tenant.

Wave two to twelve is web and CATI. We start the first Monday in the month with web interviewing. We send an e-mail to the respondents to whom we have e-mail address and a SMS to whom we have cellphone number but no e-mail address. The e-mail includes a link to the questionnaire. Thursday we follow up the respondents who have not answered on line. This time we send e-mail and SMS to all. After a week, the next Monday, CATI interviewing starts for the rest of the respondents. The web questionnaire is still open. Every morning we get the web answers and synchronize them to the CATI database and to SIV. The CATI interviewing goes on for one week. When interviewing has finished we make the final files. From the start of data collection to the end of the wave it takes 2 weeks. We have about 900 answers on web each month and about 850 CATI.

For the web questionnaire we used Blaise IS. We know that some people get e-mail on cellphones and tablets and that the Blaise IS questionnaires are not always easy to use on these devices. At the Blaise Conference in London 2012 we saw a presentation of C-Moto from CentERdata. They showed some nice looking screenshots from cellphones and tablets. Due to this we decided to make a C-Moto version of the Blaise IS questionnaire and in May 2013 we put it in production. The first month we used it for the respondents to whom we send SMS. We saw that only a few of them answered on-line so we thought we could test it on them. In June we sent two links in the e-mails. In the future we may only use the C-Moto version because it works well on all devices - also laptops.
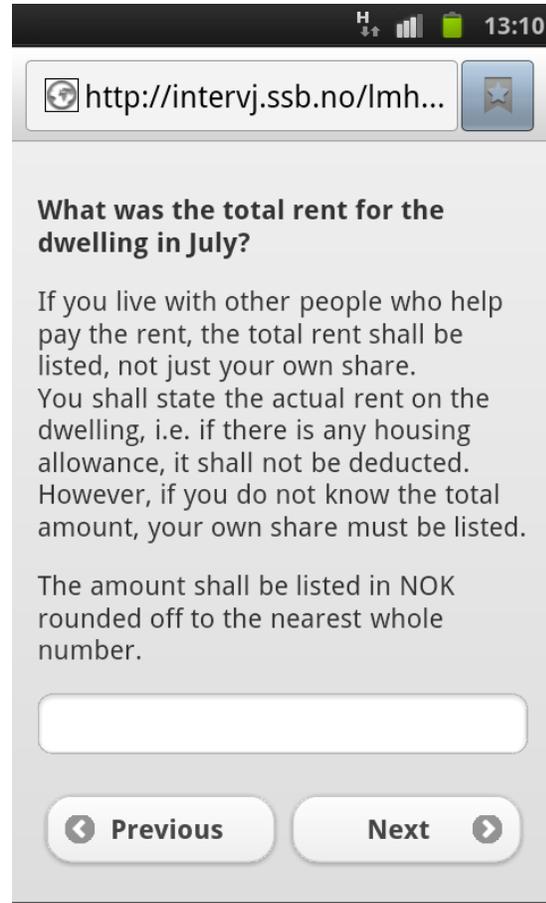
| Figure 1. Question in Blaise IS | Figure 2 Question in C-Moto |

Here are screenshoots from a cellphone. As you can see on the Blaise IS questionnaire the text is small and difficult to read. The buttons are small and difficult to click on. The C-Moto version is easier to read and the buttons are bigger so you can easily click them.

2 The questionnaire

The questionnaire is short. First we ask if the respondent still lives on the address.

- If he or she does not, we ask if he or she knows who is living there now, and collect the name and telephone number for the new tenant. Then we try to interview the new tenant with CATI.

- If he or she still lives in the dwelling we inquire about the rent. If the rent has changed (more than 20%) we ask why the rent has changed. Further we ask if the rent includes parking space, heating and electricity; if he or she rents the dwelling with furniture; if he or she has an agreement with the landlord to carry out certain services, e.g. clearing snow or babysitting in addition to paying the rent?

At the end we ask if he or she will be living at the address next month.

- If he or she does not, we ask if he or she knows who will live there next month and collect the name and telephone number for the new tenant.

- If he or she would live there we ask if the e-mail address and phone number are correct and change them if there are any changes.

More than 95% of the respondents only answeer how mutch they pay in rent and how we can contact them next month.

3 Tasks during the survey period

There is a lot of tasks to do before, during and after the survey period. The tasks are the same every month.
- Create questionnaire in SIV

- Prepare sample

    o Get answers from last month

    o Prepare data files for loading into SIV (Oracle database), Blaise WEB

    o Select respondents for e-mail, SMS or CATI

    o All respondents are loaded into all files (SIV (Oracle database), Blaise WEB)

- Change WEB questionnaire with data model name, wave etc. for both the Blaise IS and the C-Moto version of the questionnaire

- Change Bis file and make new Bip file

- Install questionnaire on the web server

- Load sample into SIV and export it (We use this to get a unique id for the respondents)

- Change and prepare CATI questionnaire

- Load the sample into the CATI questionnaire

- Mark the cases we shall not phone (refused more than 2 times, respondents with no telephone number, housing that is not rental properties anymore)

- Synchronize from Blaise to SIV

- Send e-mail to the respondents

- Send SMS to the respondents

- Daily

    - o Retrieve answers from the WEB server

    - o Put the answers into the CATI questionnaire (only status fields) to make them completed. We do not want to call when we do CATI

    - o Synchronize form from Blaise to SIV

    - o Make reports

- Send reminders to those who have not responded

- Create files to client

4 How we do it

As you can see, there is a lot of tasks that have to be done on a regular basis. To help us remember what to do and when to do it we made a checklist using AutoIt.
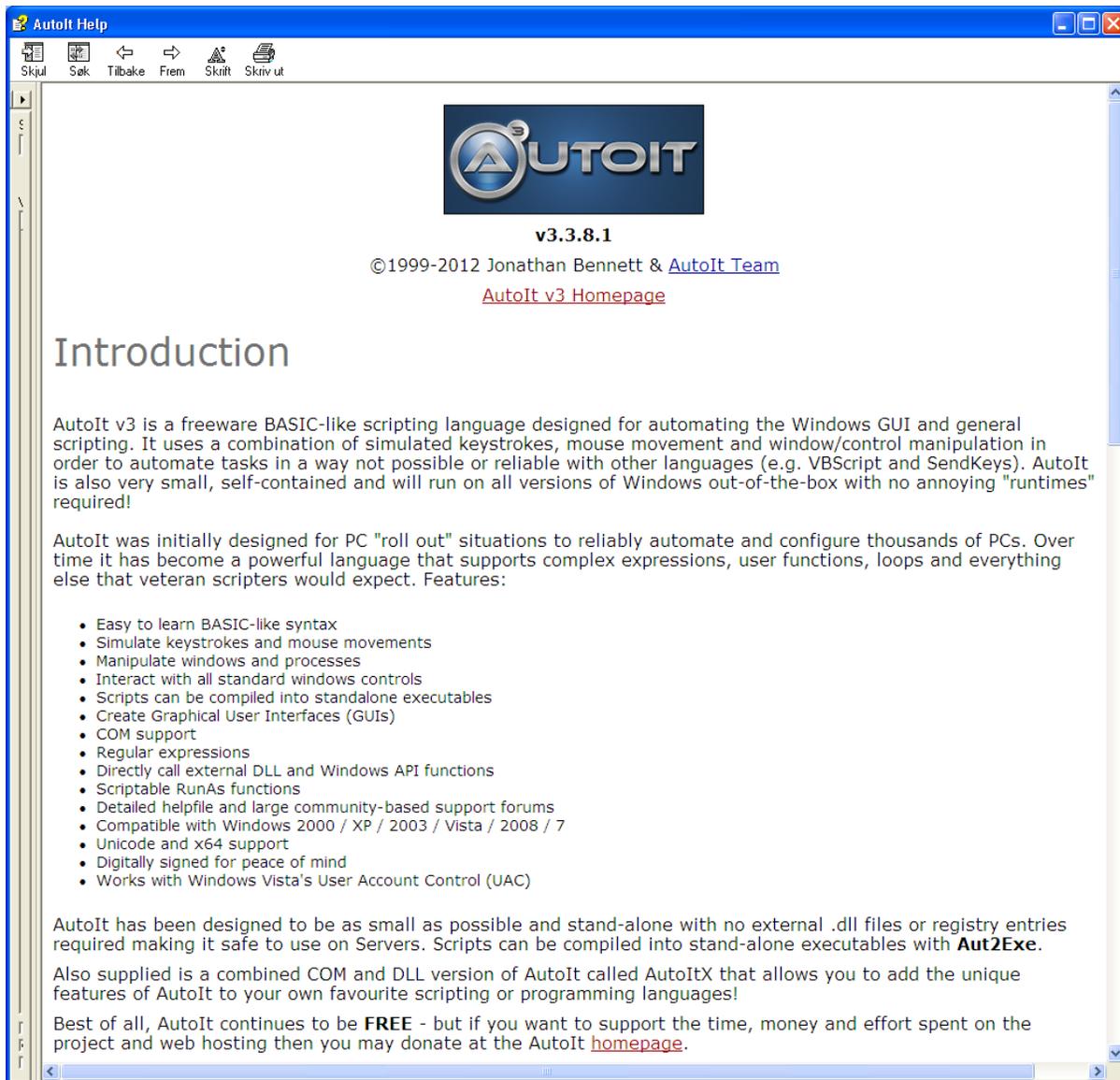

Figure 3 AutoIt introduction
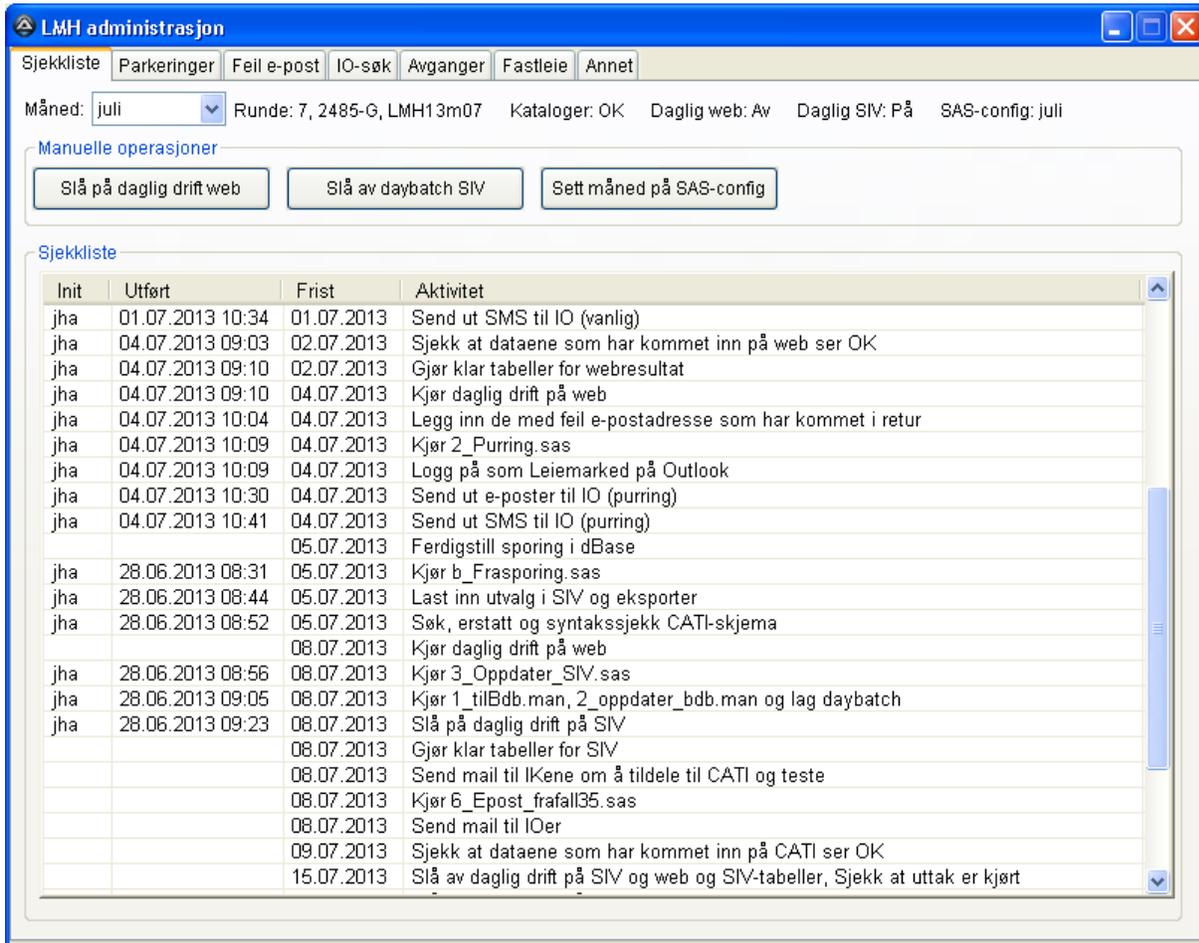
Here is an example of the checklist.

Figure 4 main window of the checklist

The Checklist contains activity, the deadline for the activity, who has done it and when it was done. In this way we make sure that everything is done at the right time. The program read a tab divided ascii file so it is easy to change it, make new lines or delete lines. Because the activity is logged with date, time and who did the activity it is easy for another person to step in and do the next activity. That mean it is easier to share the work between several people. We also have a sort of documentation of what we have done. If we double-click on an activity we get a dialog box where we can choose to do the activity automatically or manually. We can also delete the registration of who has done the activity and when it has been done. We can also close the dialog box.
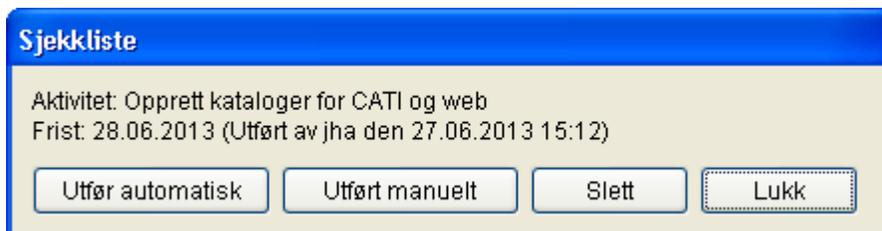

Figure 5 Activity in the checklist

For most of the activities we have made programs in SAS or Manipula. From AutoIt we can start other programs. If we click the button for doing the activity automatically it runs a SAS or manipula program. We can also manipulate text files in AutoIt. Using this we can generate a new data model and new manipula programs when we start a new wave. We copy the Blaise source files from the previous month to a new folder and rename the bla file. We read the new source files line by line and do some changes such as the name of the questionnaire, input and output files in Manipula wave etc. automatically. Most usually we change the month number from LMH13m06 to LMH13m07; or the wave which is the same as the month number. When the source files are changed we prepare the data model and the Manipula scripts.

Figure 6 change and prepare a Manipula setup

In connection with the SAS programs we use, we have a configuration file with the variables that change from wave to wave. We create the configuration file from AutoIt.

We also have AutoIt scripts for sending e-mail and SMS, we just select the right file, which is created automatically from the SAS programs. From the name of the file we select, the script selects the right e-mail template for the SMS. Both the e-mail and SMS have a link with user-id and password. The SMS has a link to the C-Moto version of the questionnaire. The e-mail has a link to the Blaise IS version and a link to the C-Moto version.

Figure 7 E-mail to respondents
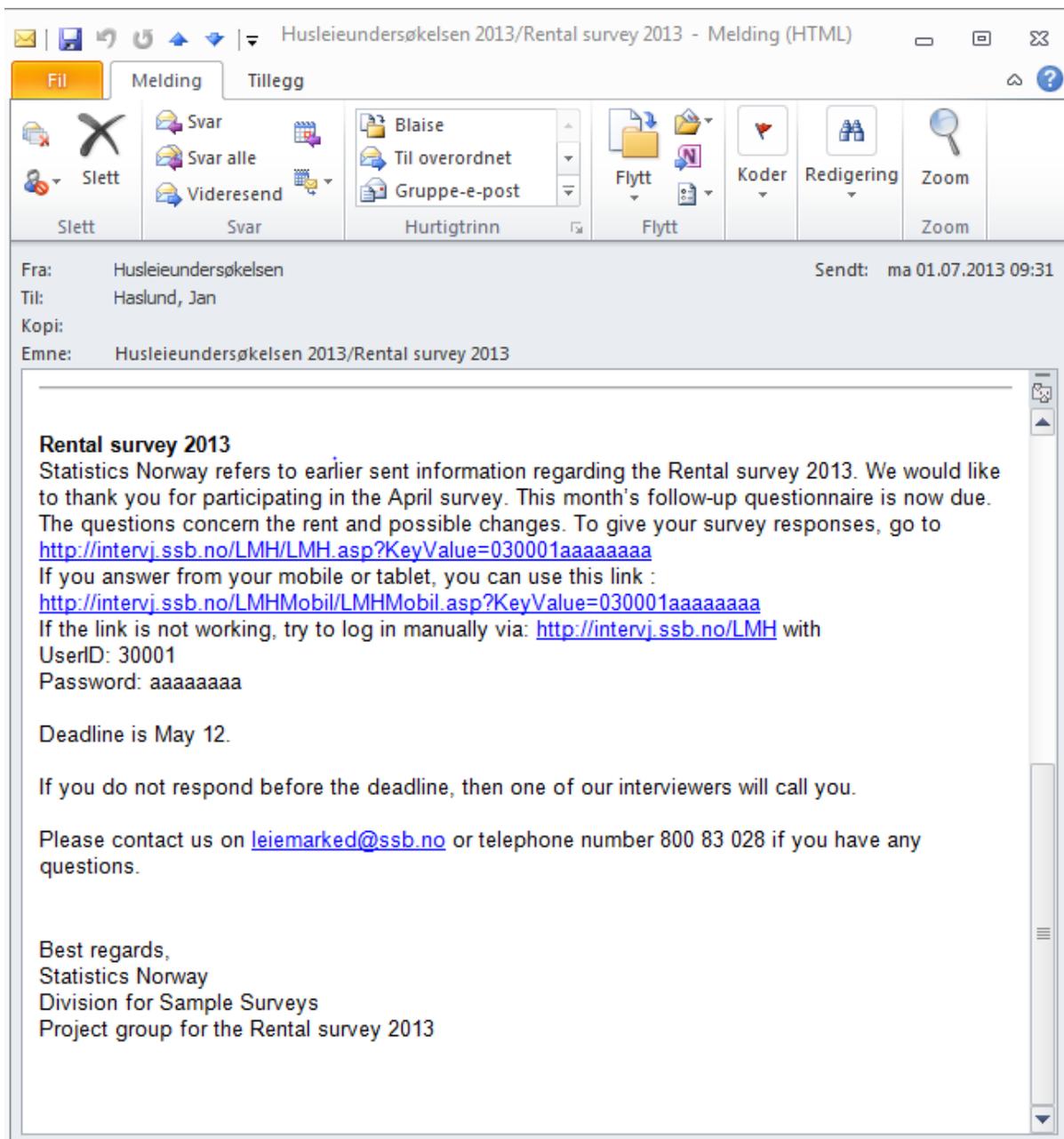
Every morning we have to synchronize the web answers to both the CATI database and to SIV. We also read all questionnaire data into SAS datasets. From the SAS dataset we make an ascii-file of the new answers. This file is read into the Blaise CATI file by a Manipula script. The Script put some statuses to the Blaise file, including the date for today in the field catimana.caticall.firstday.

```
Blaise 4.8 Control Centre - (Untitled)

File  Edit  Project  Run  Database  Tools  Add-Ins  Window  Help

\\Kpwi-blaise01\Siv\Skjema\LMH13m07\V01\Produksjon\3_oppdater_bdb_daglig.man

USES
   Outputmeta 'LMH13m07'
   DATAMODEL InputMeta
      FIELDS
         IO_Nummer    : 0..999990
         Innled       : 1..4
         FrafGr       : 11..41
         AvgGr        : 95..98
         Status_case  : string[2]
         Intslutt     : 1..3
         Intervjuer   : string[3]
         Melding      : string[80]
   ENDMODEL



UPDATEFILE Outputfile1: Outputmeta ('LMH13m07', blaise)
INPUTFILE Inputfile1: Inputmeta ('..\..\Utvalg\oppdater_bdb.txt', ASCII)
   SETTINGS
      LINKFIELDS
         IO_nummer = Outputfile1.IO_nummer

AUXFIELDS
   nokkel : STRING[200]
   Kommando : STRING[400]
   Reslt : INTEGER
   intervjustatus      : string[2]

MANIPULATE
   if(Inputfile1.search(Outputfile1.IO_nummer)) then
      Inputfile1.read
      Outputfile1.Innled := Inputfile1.Innled
      Outputfile1.FrafGr := Inputfile1.FrafGr
      Outputfile1.AvgGr  := Inputfile1.AvgGr
      Outputfile1.Status_case := Inputfile1.Status_case
      Outputfile1.Intslutt := Inputfile1.Intslutt
      Outputfile1.FrafSpes := Inputfile1.Melding

      Outputfile1.Intervjuer:=Inputfile1.Intervjuer
      Outputfile1.CatiMana.CatiCall.NrOfCall:=1
      Outputfile1.CatiMana.CatiCall.FirstDay:=SYSDATE
      Outputfile1.CatiMana.CatiCall.RegsCalls[1].Whomade:=Inputfile1.Intervjuer
      Outputfile1.CatiMana.CatiCall.RegsCalls[1].Daynumber:=1
      Outputfile1.CatiMana.CatiCall.RegsCalls[1].DialTime:=SYSTIME
      Outputfile1.CatiMana.CatiCall.RegsCalls[1].NrOFDials:=1
      Outputfile1.CatiMana.CatiCall.RegsCalls[1].DialResult:=Completed

      Outputfile1.Endring := 1
      Outputfile1.WRITE
   endif
ENDMANIPULATE
```

Figure 8 Updating CATI file script

When we have the data in the CATI database we have to synchronize it to SIV. To do this we use a Manipula script that loops through the Blaise file if it is a complete interview and it is not synchronized earlier it call another manipula script that write to a BOI file that point to an Oracle table in SIV.


```
Blaise 4.8 Control Centre - (Untitled)
File  Edit  Project  Run  Database  Tools  Add-Ins  Window  Help

\\Kpwi-blaise01\Siv\Skjema\LMH13m07\V01\Produksjon\Skriv_til_blaise_event_inn_daglig.man

process Retttattut
SETTINGS
    DESCRIPTION = 'BLAISE to BLAISE'

USES
   InnMeta 'LMH13m07'


UpDateFILE utfil: InnMeta ('LMH13m07', blaise)

AUXFIELDS
   nokkel : STRING[200]
   Kommando : STRING[400]
   Reslt : INTEGER
   intervjustatus     : string[2]

MANIPULATE
   utfil.open
   utfil.reset
   utfil.READNEXT

   WHILE NOT(utfil.eof) DO
      IF ((CatiMana.CatiCall.FirstDay=SYSDATE) AND (Intervjuer = 'WEB')) THEN
         IF   (utfil.status_case=RESPONSE) THEN
               {Lager intervjustatus}
               if (utfil.status_case= '00') then                    {Intervju}
                   intervjustatus    := '0'
               elseif (utfil.status_case= '02') then               {Frafall}
                   intervjustatus    := utfil.GETVALUE('frafgr',UF)
               elseif (utfil.status_case= '04') then               {Overføring}
                   intervjustatus    := utfil.GETVALUE('ovfgr',UF)
               elseif (utfil.status_case= '01') then               {Avgang}
                   intervjustatus    := utfil.GETVALUE('avggr',UF)
               endif
                 {Parametre til skriv_status2. Se skriv_status2.man for dokumentasjon}
               nokkel:= str(utfil.io_idnr)+';'+utfil.status_case+';'+intervjustatus+';'+'"'+
                      utfil.frafspes+'"'+';'+utfil.intervjuer+';'+str(utfil.endring)+';;'+'0'
                 {Kjører skriv_status2 som oppdaterer blaise_event_inn}
               Kommando:='\\kpwi-blaise01\siv\faste\skriv_status2 /Q /P'+nokkel
               {DISPLAY(kommando,wait)}
               Reslt := CALL(Kommando)
         ENDIF
      ENDIF
      utfil.READNEXT
   ENDWHILE
```

Figure 9 Synchronizing to SIV

```
PROCESS skriv_status2  "Skriv status til blaise_event_inn"

    USES
        bei      '\\kpwi-blaise01\siv\faste\blaise_event_inn'
        status   '\\kpwi-blaise01\siv\faste\status'

    {updatefile beif : bei     ('blaise_event_inn.boi', OLEDB)}

    outputfile beif : bei     ('\\kpwi-blaise01\siv\faste\blaise_event_inn.boi', OLEDB)
    outputfile statusf : status ('\\kpwi-blaise01\siv\faste\status', blaise)
        settings
            makenewfile = no

    AUXFIELDS

        io_idnr          : INTEGER[6]    {IOID nummer}
        status_case      : STRING[2]     {status_case}
        intervju_status  : string[2]     {intervjustatus}
        frafspes         : string[200]   {kommentar}
        intervjuer       : string[3]     {intervjuer}
        Endra            : integer[1]     {Kontaktinfo endret}
        daybatchkode     : string[2]
        id               : integer[6]    {test}
        skrivstatus      : integer[1]    {skrive status til status for AKU}
        internstatus     : string[1]     {Skjemaets internstatus}
        tlf1,
        tlf2,
        tlf3             : string[9]      {skrive telefonnummer til status for AKU}

    MANIPULATE

        io_idnr              := val(PARAMETER(1))
        status_case          := PARAMETER(2)
        intervju_status      := parameter(3)
        frafspes             := parameter(4)
        intervjuer           := parameter(5)
        Endra                := val(PARAMETER(6))
        daybatchkode         := parameter(7)
        id                   := val(parameter(8))      {test}
        skrivstatus          := val(parameter(9))
        internstatus         := parameter(10)
        tlf1                 := parameter(11)
        tlf2                 := parameter(12)
        tlf3                 := parameter(13)


        {Variabler som skal inn i blasie_event_inn for alle skjema}
        beif.INTERVJU_OBJEKT_ID     := io_idnr
        beif.status_case            := status_case
        beif.intervju_status        := intervju_status
        beif.kommentar              := frafspes
        beif.initialer              := intervjuer
        beif.ENDRING_KONTAKT_INFO   := Endra
        beif.DAY_BATCH_KODE         := daybatchkode
        beif.BEHANDLET              := 0
        beif.id                     := id          {test}
        beif.intern_status          := internstatus
        beif.write
```

Figure 10 Synchronizing to SIV

5 Conclusions

Using the checklist gives us control of the tasks and secure that the tasks are done at the right time. Running programs automatically secure that we will do the same every wave.

It seems that the C-Moto version of the questionnaire works fine so we are thinking of using it for all the web respondents.

Reference

Alerk amin, Arnaud Wijnant (CenERdata, Tilburg, The Netherlands) "Blaise On-the-Go Using Blaise IS With Mobile Devices", Proceedings of the 14th International Blaise Users Conference, April 2012