

Westat Basil ACASI

Using Basil for ACASI at Westat – From custom to COTS

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- Audio Computer-Assisted Self Interviewing (ACASI) is an important data collection mode for many surveys, particularly when collecting very sensitive data.
- For many years Westat has had its own ACASI product (Westat Visual Blaise) but advances in Blaise products have led us toward using the Basil data-entry program to collect ACASI information.

- Using Basil for ACASI is fairly new, so we focused on the technical design and language constructs required for differing studies using a standardized set of tools, especially when using multiple spoken languages.
- Limitations in the use of human voice recordings to read questions during an ACASI interview (“voice talent”), made us investigate integrating text-to-speech (TTS) software into Basil applications using Visual Basic procedures.
- We conclude with thoughts on lessons learned and next steps.

Basic Basil – CASI

Basic Basil CASI



Westat

EXIT

IBUC 2013

Westat Basil ACASI 1

Touch NEXT to continue

BACK

NEXT

Our first example uses Basil without any additions. The program is CASI because we have no audio (no sound files).

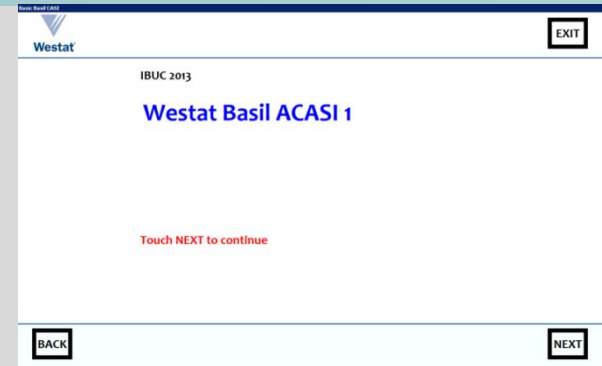
- *Basil is page-based*: screens are presented one page at a time, and the design of a page is dependent on a template (an application definition) and the questions appearing on that screen (the field definitions).
- *Basil is event-driven*: though moving between items on a page/screen is by user choice, moving from one page/screen to the next or previous requires selection of a specific item (usually a button).

Basic Basil – CASI

DATAMODEL BasicBasil

```
"<application name='app' title='Basic Basil CASI' canclose=false windowstate=maximized width=1280 minimumwidth=1280 clientheight=800
  minimumheight=800 resource='' icon='westat.ico' sizeable=false fontface='Candara' fontbold=true fontsize=20 fontcolor=black singleinstance=true>
<panel name='overall' align=client color=white>
  <panel name='global' height=100 align=top>
    <rectangle left=1160 top=10 height=70 width=90 color=#000000>
    <img src='Westat Standard Vert.gif' left=34 top=4 width=92 height=81 stretch=true onclick='http://www.Westat.com' hint='Westat website'>
    <speedbutton name='finish' left=1170 top=20 height=50 width=70 color=#000000 caption='EXIT' onclick='blaise:save();blaise:quit()'
      hint='Finish interview'>
    <line left=0 top=98 width=1280 height=2 color=#7E4500>
  </panel>
<content-area horizontalscrollbar=false verticalscrollbar=false >
<panel name='navigation' height=100 align=bottom color=#FFFFFF0>
  <line left=0 top=0 width=1280 height=2 color=#7E4500>
  <rectangle left=30 top=10 height=70 width=90 color=#000000>
  <rectangle left=1160 top=10 height=70 width=90 color=#000000>
  <speedbutton name='back' left=40 top=20 height=50 width=70 color=#000000 caption='BACK' onclick='blaise:previouspage()' hint='Previous page'>
  <speedbutton name='forward' left=1170 top=20 height=50 width=70 color=#000000 caption='NEXT' onclick='blaise:save();blaise:nextpage()'
    hint='Next page'>
  </panel>
</panel>
</application>"
LANGUAGES = BASIL "Basil"
```

Basic Basil – CASI



```
_StartField
  BASIL "<question>
    <label fontsize=20 halight=center width=1000 topmargin=20
      text='IBUC 2013 <br><br>
        <font color=blue size=40>Westat Basil ACASI 1</font>
        <br><br><br><br><br><br><br>
        <font color=red size=20>Touch NEXT to continue</font>'>
    </question>"
  : STRING[1], EMPTY
```

Basic Basil – CASI

Basic Basil CASI

Westat

Please enter your telephone number.

111-222-3333

Don't know

Rather not answer

BACK NEXT

```
Quest41
BASIL "<question>
  <label left=40 width=1200 topmargin=20 text='Please enter your telephone number.'>
  <input visible=true  halign=center left=200 top=200 width=300 height=100
    editmask='000\ -000\ -0000' fontcolor=black focusedcolor=#99FFFF
    showinputlineradiobutton=false fontcolor=black radiobuttonsize=40
    showdontknow=true showrefusal=true showfocusrect=false>
</question>
"
: STRING[10], DK, RF
```


Basic Basil – CASI

Westat

TELEPHONE NUMBER: 111-222-3333

Have you ever tried cigarette smoking, even 1 or 2 puffs?

Yes
 No
 Don't know
 Rather not answer

BACK NEXT

```
Quest1
BASIL "<question>
  <label height=600 width=1200 top=20 left=40
    text='<font color=blue>$Telephone</font>Have you ever tried cigarette
    smoking, even 1 or 2 puffs? '>
  <input visible=true left=200 top=200 width=400 fontcolor=black radiobuttonsize=40
    focusedcolor=#99FFFF showdontknow=true showrefusal=true showfocusrect=false>
</question>"
: (Yes, No), RF, DK
```

Basil CASI becomes ACASI

(and adds Maniplus)

```
"<application name='app' title='Basil ACASI -- Audio files'
```

```
...
```


```
    fontcolor=black setups='WBA.msu /Kmeta=WBA02;'  
    singleinstance=true>
```

```
...
```

```
<speedbutton name='forward' left=1170 top=20 height=50 width=70  
    color=#000000 caption='NEXT'  
    onclick='WBA.ErrorCheck;blaise:save();blaise:nextpage(); '  
    hint='Next page'>
```

Basil CASI becomes ACASI (and adds Maniplus)

Basil ACASI -- Audio files

 **Westat**

EXIT

TELEPHONE NUMBER: Rather not say

Which of these products did you use?

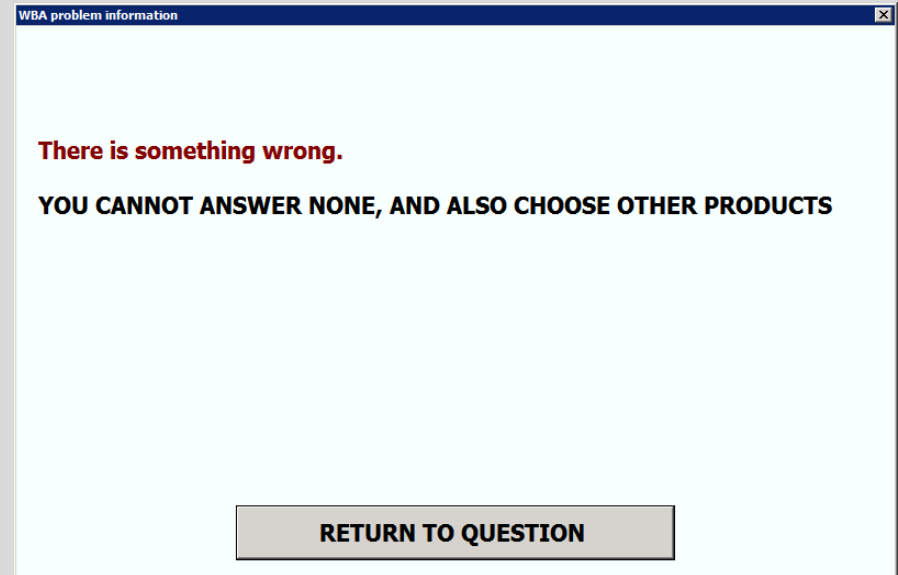
(Please select all that you used.)

- Cigarettes
- Pipes
- Cigars
- Snuff or Chewing tobacco
- Nicotine patches, gum, or other nicotine product
- None of these products
- Don't know
- Rather not answer

BACK **NEXT**

Basil CASI becomes ACASI (and adds Maniplus)

```
IF (None IN Quest60) AND  
  (Quest60.CARDINAL > 1) THEN  
  CHECK ERROR  
  BASIL  
  "YOU CANNOT ANSWER NONE,  
  AND ALSO CHOOSE OTHER  
  PRODUCTS"  
ENDIF
```



Basil CASI becomes ACASI (and adds Maniplus)

Basil ACASI -- Audio files

Westat

TELEPHONE NUMBER: Rather not answer

Which of these products did you use in the past 12 months?
(Please select all that you used.)

- Cigarettes
- Pipes
- Cigars
- Snuff or Chew
- Nicotine patch
- None of these
- Don't know
- Rather not answer

BACK

WBA missing information

There is something wrong.

Do not know

Rather not answer

RETURN TO QUESTION


Basil CASI becomes ACASI (and adds Maniplus)

Quest60

```
BASIL "<question>
  <label left=40 width=1200 topmargin=20
    text='<font color=blue>$Telephone</font>Which of these products did you
    use?<br><br>(Please select <u>all</u> that you used.)'>
  <audio name='Quest60Audio'
    src='Media\English\Quest60.wav, Media\English\Quest60-1.wav,
    Media\English\Quest60-2.wav, Media\English\Quest60-3.wav, Media\English\Quest60-4.wav,
    Media\English\Quest60-5.wav, Media\English\Quest60-6.wav, Media\English\DontKnow.wav,
    Media\English\Refusal.wav, Media\English\Silence.wav'
    loop=true stoponkey=true>
  <input visible=true left=200 top=200 width=800 checkboxsize=40 focusedcolor=#99FFFF
    showdontknow=true showrefusal=true onenter='blaise:playmedia(Quest60Audio)'
    onexit='blaise:stopmedia(Quest60Audio)'>
</question>
"
: SET OF TCigTypes, DK, RF
```

Language-aware Basil ACASI

Basil ACASI -- Audio files and language change



Cambiar a español

EXIT

IBUC 2013

Westat Basil ACASI 3

Touch NEXT to continue

BACK

NEXT

Language-aware Basil ACASI

Touch the button that changes to Spanish
[**Cambiar a español**] to get the right page.

Basil ACASI -- Audio files and language change

Westat®

Cambiar a español

EXIT

TELEPHONE NUMBER: 111-222-4444

Please enter your telephone number.

111-222-4444

- Do not know the answer
- Rather not answer

BACK

NEXT

Touch the button that changes to English
[**Change to English**] to get the left page.

Basil ACASI -- Audio files and language change

Westat®

Change to English

EXIT

TELEPHONE NUMBER: 111-222-4444

Por favor anote su número de teléfono.

111-222-4444

- No sé la respuesta
- Prefiero no contestar

BACK

NEXT

Language-aware Basil ACASI

DATAMODEL BasilACASIAudioLanguage

```
BASIL "<application name='app' title='Basil ACASI -- Audio files and language change'
```

...

```
  oncreate='WBA.ChangeLang(''ENG''); ... setups='WBA.msu /Kmeta=WBA03;' ...>
```

```
<panel name='overall' align=client color=white>
```

```
<panel name='language' height=100 align=top>
```

```
  <speedbutton left=480 top=20 height=50 width=300 caption='$ __Language_Fill'  
    onclick='WBA.GotoStart();WBA.ChangeLang(''OTHER'');WBA.GotoOldActive();'  
    hint='$ __Language_Fill'>
```

```
  <rectangle left=470 top=10 height=70 width=320 color=#000000>
```

...

```
LANGUAGES = BASIL "Basil", ENG "English", ESP "Spanish"
```

Language-aware Basil ACASI

Quest60

```
BASIL "<question>
```

```
<label left=40 width=1200 topmargin=20 text='$Quest60_Fill'>
```

```
<audio name='Quest60Audio' src='$__MediaPathLang_Fill\Quest60.wav,  
$__MediaPathLang_Fill\Quest60-1.wav, $__MediaPathLang_Fill\Quest60-2.wav,
```

```
...  
$__MediaPathLang_Fill\Silence.mp3' loop=true stoponkey=true>
```

```
<input visible=true left=200 top=300 width=800 checkboxsize=40 focusedcolor=#99FFFF  
showdontknow=true showrefusal=true showfocusrect=false dontknowcaption='%_DK_Fill'  
refusalcaption='%_RF_Fill' onenter='blaise:playmedia(Quest60Audio)'  
onexit='blaise:stopmedia(Quest60Audio)'\>
```

```
</question>
```

```
"
```

```
ENG "Which of these products did you use?<br><br>(Please select <u>all</u> that you used.)"
```

```
ESP "¿Cuál de los siguientes productos usó usted?<br><br>Por favor elija <u>todos</u> los que usó."
```

```
: SET OF TCigTypes, DK, RF
```

Language-aware Basil ACASI

WBA problem information

Which of these products did you use?
(Please select all that you used.)

You cannot answer **None of these products**, and also choose other products.

RETURN TO QUESTION

WBA problem information

¿Cuál de los siguientes productos usó usted?
Por favor elija todos los que usó.

No se puede responder **Ninguno de estos productos**, y también elegir otros productos.

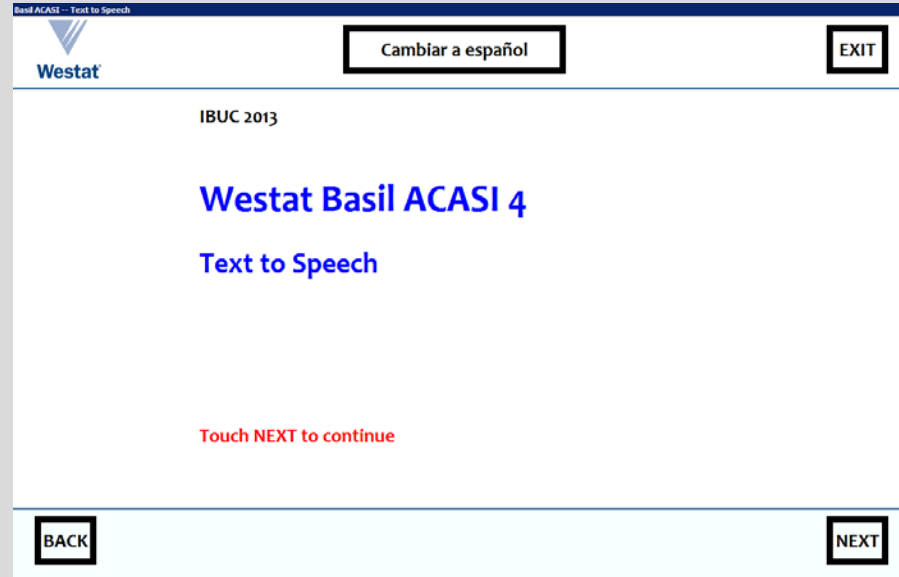
VOLVER A LA PREGUNTA

TTS and language-aware Basil ACASI

_StartField

```
BASIL "<question>  
  <label fontsize=20 halign=center  
    width=1000  
    topmargin=20  
    text='$_StartField_Fill'>  
  <input  
    onenter='WBA.Speak("""Touch  
    NEXT to continue""");'>  
</question>"
```

...
: STRING, EMPTY




TTS and language-aware Basil ACASI

Quest60

```
BASIL "<question>
  <label left=40 width=1200 topmargin=20 text='$Quest60_Fill'
    onclick='WBA.StopSpeaking("''");'>
  <input visible=true left=200 top=200 width=800 checkboxsize=40
...
    onenter='WBA.Speak("$Quest60_Fill . $tCigTypes_Type
  . $ _DK_Fill . $ _RF_Fill "''");'
    onchange='WBA.StopSpeaking("''"); WBA.SpeakValue("''");'>
</question>
"
ENG "Which of these products did you use?<br>(Please
  select <u>all</u> that you used.)"
ESP "¿Cuál de los siguientes productos usó usted?<br>Por favor
  elija <u>todos</u> los que usó."
: SET OF TCigTypes, DK, RF
```

TTS and language-aware Basil ACASI

Basil ACASI -- Text to Speech

 Cambiar a español EXIT

TELEPHONE NUMBER: Rather not say

How much do you smoke these cigarette brands?

	Much	Medium	Little
Marlboro	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Camel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Newport	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Benson and Hedges	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Which other brand is that?

Do not know the answer

Rather not answer

BACK NEXT

The potential of Basil for ACASI

- Because Basil has most of the flexibility of Blaise, with some useful extra features, appearance is very customizable and we can react to the desires of clients and methodologists.
- There are cost savings for text-to-speech as opposed to using voice talent and time savings in the development cycle by not having to record all questions, answers and fills, especially when using multiple languages.

The potential of Basil for ACASI

- Our previous ACASI tool of choice, Westat Visual Blaise, made use of the Blaise alien router feature to load a special WVB DLL. Though very successful, WVB had its limitations:
 - WVB allowed for pre-programmed screen types only, whereas Basil is much more flexible.
 - For WVB applications, either the alien DLL had control or the Blaise rules had control, and communication between the two was limited (especially when using TTS).
- With Basil/Maniplus we control layout and can respond to events within one control environment.

The potential of Basil for ACASI

- With TTS technology improving at a rapid pace its use for ACASI will become ever more sensible and cost-effective.
- While there are still some remaining challenges with regard to attaining the full flexibility we would like to achieve with integration of TTS within Basil ACASI, we believe that Basil/Maniplus already allows for more control over TTS events than its predecessor WVB did.