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

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Westat Basil ACASI 1

Touch NEXT to continue
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

_StartField
  BASIL "<question>
  <label fontsize=20 halign=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>
<font color=red size=20>Touch NEXT to continue</font>'
  </question>
: STRING[1], EMPTY
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
  showdon'tknow=true showrefusal=true showfocusrect=false>
</question>
": STRING[10], DK, RF
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 showdon'tknow=true showrefusal=true showfocusrect=false>
</question>"
: (Yes, No), RF, DK
"<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)
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
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)
Quest60

BASIL "<question>

<label left=40 width=1200 topmargin=20

text='\textcolor{blue}{$Telephone$} Which of these products did you

use?\textless;br\textgreater;<br>(Please select \textless\textit{all}\textgreater; that you used.)'\textgreater;

<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

Basil CASI becomes ACASI
(and adds Maniplus)
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Touch NEXT to continue
Language-aware Basil ACASI

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

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

Please enter your telephone number.

- 111-222-4444
- Do not know the answer
- Rather not answer

TELEPHONE NUMBER: 111-222-4444

Por favor anote su número de teléfono.

- 111-222-4444
- No sé la respuesta
- Prefiero no contestar
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"
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 showdon'tknow=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>(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
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.

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

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

: SET OF TCigTypes, DK, RF
### TTS and language-aware Basil ACASI

**How much do you smoke these cigarette brands?**

<table>
<thead>
<tr>
<th></th>
<th>Much</th>
<th>Medium</th>
<th>Little</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marlboro</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Camel</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Newport</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Benson and Hedges</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Which other brand is that?**

- Do not know the answer
- Rather not answer

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**TELEPHONE NUMBER: Rather not say**
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.
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.
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.