EB GUIDE Studio and EB GUIDE Speech Extension

Dan Henderlong
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Agenda

**Background Information**
EB GUIDE 6 Overview

**Speech Additions**
EB GUIDE Studio Speech Extension

**Important Use Cases**
Modelling with GUIDE Speech
# EB GUIDE product overview

<table>
<thead>
<tr>
<th>Plugins</th>
<th>Graphic UI</th>
<th>Voice UI</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>EB GUIDE Studio</td>
<td><strong>Graphic UI</strong></td>
<td><strong>Voice UI</strong></td>
<td><strong>Target</strong></td>
</tr>
<tr>
<td></td>
<td><strong>EB GUIDE Speech Extension</strong></td>
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<td><strong>EB GUIDE Graphics Target Framework (GTF)</strong></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Runtime environment for the graphical user interface</strong></td>
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<td></td>
<td><strong>EB GUIDE Speech Target Framework (STF)</strong></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Runtime environment for enabling speech dialog and additionally integrated customer applications. Additional easy-to-use services to the recognizer engine</strong></td>
</tr>
</tbody>
</table>

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The elements of an EB GUIDE model

- Views and widgets
  - Basic widgets
    - Container
    - Image
    - Instantiator
    - Label
    - Rectangle

- UML state charts

- Datapool
  - globalConstant
  - showSplash
  - clusterRunning
  - animation_main_running
  - cars_index_int
  - animation_welcome_running
  - battery_low
  - battery_charging

- Events
  - continue
  - reStart
  - splashTimeout
  - sys_off
  - sys_on
  - sys_sleep
  - sys_Home
  - volume_Up

- Scripting

- Commands and prompts
  (in case of EB GUIDE Speech Extension)
  - Basic spidgets
    - Prompt
    - Prompt container
    - Command
    - Command container

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UML illustrated state charts

Individual State charts for GUI and VUI model

One state describes the shown view

OR

One state describes one dialog step

The state charts describe GUI and VUI interaction

From Unified Modeling Language (UML) derived state charts
Native widgets for modeling

The EB GUIDE Studio Project editor manages the model hierarchy.

Views combine widgets in a widget tree.

WidgetTemplates allow reuse, building-blocks, and align with the wireframe pattern of the design departments.
Templates as reusable building blocks

Widgets for graphical UIs
- Views are composed from a tree of widgets
- Widgets represent rectangles, texts, images...

Spidgets for voice dialog UIs
- Speech dialogs are composed from spidgets
- Spidgets represent prompts, commands, recognizers...

Properties
- Widgets and spidgets are configured by properties

Templates
- Complex widget or spidget trees can be assembled to reusable templates
Datapool & Events: Interfacing

- Datapool:
  - globalConstant
  - showSplash
  - clusterRunning
  - animation_main_running
  - cars_index_int
  - animation_welcome_running
  - battery_low
  - battery_charging

- 3D model
- 3D model list
- Bool
- Boolean list
- Color
- Color list
- Conditional script
- Float
- Float list
- Font
- Font list
- Image
- Image list
- Integer
- Integer list
- SRGS grammar
- String
- String list

- Events:
  - continue
  - reStart
  - splashTimeout
  - sys_off
  - sys_on
  - sys_sleep
  - sys_Home
  - volume_Up

- Properties:
  - speechRecognitionFinished : Event
    - Configuration
      - Event ID: 4
      - Event group: Default
    - Parameters:
      - success: bool
      - errorCode: int
GTF Script

```plaintext
2 + 2 // Expression

ev:speechInitialized // Event Namespace
f:getTextLength // Function Namespace
dp:BackgroundImg // Datapool Namespace
v:this.x // Local Variable Namespace

while(!dp:whaleInSight) // While Loop
{
    dp:whaleInSight = "";
}

if(dp:whaleInSight && dp:user == "Captain Ahab") // If-Then-Else Statement
{
    dp:mode = "insane";
}
else
{
    dp:mode = "normal";
}
```
Modeling of animations along a timeline

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>Fade-in animation: Linear curve float</th>
</tr>
</thead>
<tbody>
<tr>
<td>enabled</td>
<td></td>
</tr>
<tr>
<td>delay</td>
<td>0</td>
</tr>
<tr>
<td>duration</td>
<td>1,000</td>
</tr>
<tr>
<td>repeat</td>
<td>1</td>
</tr>
<tr>
<td>alternating</td>
<td></td>
</tr>
<tr>
<td>relative</td>
<td></td>
</tr>
<tr>
<td>velocity</td>
<td>1.00</td>
</tr>
<tr>
<td>constant</td>
<td>0.00</td>
</tr>
<tr>
<td>target</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Animations are modeled directly in EB GUIDE Studio and applied to target widgets

Every widget property can be animated

Animations can be scripted as well

Different kinds of animations:
- Animate whole widgets
- Animate parts inside a widget
- Animate view transitions between views (*)

(*) new in EB GUIDE 6.2
Monitor the HMI with EB GUIDE Monitor

Challenge
- Manage complex dialog flows
- Automated testing of dialog flows
- Early evaluation of usability

Solution
- EB GUIDE Monitor is a graphical tool to monitor and control the runtime.
- EB GUIDE Monitor supports test automation on the command line via JavaScript.
Key features – Consistency to the graphics world

**Graphics and Haptic**

- **View**
  - View state

- **Widget**
  - e.g. Static Text Field
  - e.g. Button

- **Property**
  - Label
  - OnTouch

**Speech Input and Output**

- **Talk**
  - Talk state

- **Spidget**
  - Prompt
  - Command

- **Property**
  - Prompt text
  - OnRecognized
Talk Editor

- Talk editor for modeling dialog acts
- Define prompts when entering the talk state to query user input
- Define commands to collect user response
- Adapt properties to trigger model events or update datapool items
SRGS Grammar: Using proper syntax

```
// Tokens
navigate

// Alternative
cancel | stop
   cancel | close
   cancel | [stop]

// Optional
[enter] [hold]

// Parentheses
(show | display)

// Repeats
<n>
<m-n>
<m-1>

// Language
Tuner[en-US]
```

TOOLBOX

- SRGS use cases
  - Line numbers
  - Alternative phrases
  - Optional phrases
  - Sequence
  - Language tag
  - Comment
  - Digit sequence
Add-on: NLU Commands (External Grammar)

Challenge
• Numerous commands are hard to memorize
• Commands are not always intuitive enough for the end user to know what needs to be said

Solution
• EB GUIDE’s External Grammar Command Spidget allows for commands to be created by a third party that has experience with the natural language of the end user
Add-on: SSML (Speech Synthesis Markup Language) Prompts
Experience EB GUIDE 6 in the workshop today
Free download
EB GUIDE Studio – two editions

**Community Edition**
*for non commercial use cases*
- Limited Support & Services
- Limited Rights
- Limited Target Applications (win32, Android)
- No Warranty and Liability

**Enterprise Edition**
*for commercial use cases*
- Full Support & Services
- Rights for commercial usage
- Warranty and Liability

**Service Package**
- EB GUIDE TF Port
- HMI Consulting & Services

**EB GUIDE TF Runtime**
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automotive.elektrobit.com
dan.henderlong@elektrobit.com