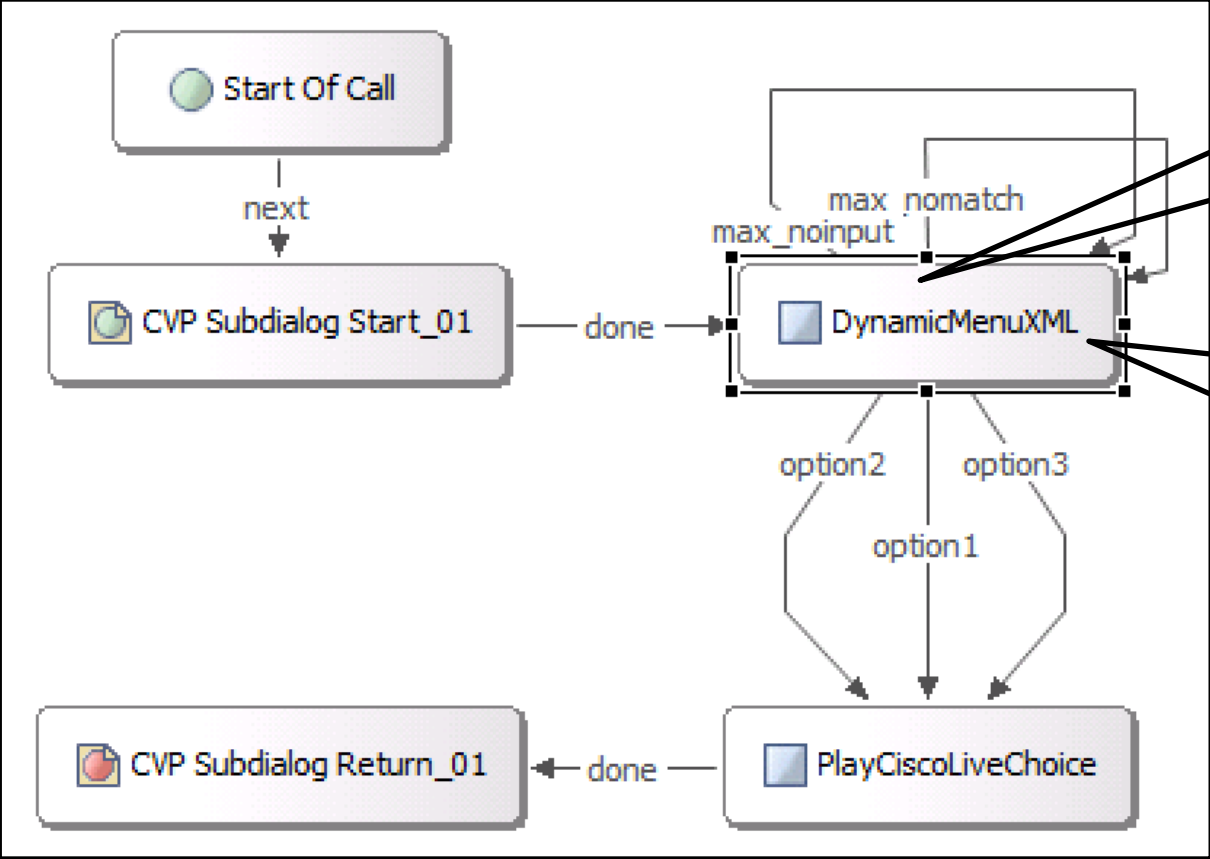# Dynamic Menus

Dynamic Menus

Use Case / Challenge

- Predictive IVR – presenting menus to the caller based on the most likely reasons for calling

  - Have they just made a booking and is this most likely a follow-up call?

  - Have they just been sent a monthly bill (possibly with exceptional charges)?

  - Derive possible reasons from back-end system caller profile/history

- Randomise the menu items

  - Possibly for tele-voting application candidate lists

- Personalised menus

  - Only offer the menu items relevant to a particular customer

  Problem: CVP Call Studio menu elements are statically configured with a preselected number of options

Dynamic Menus

Run-time Configuration (XML)

Voice Element - 3_Option_Menu

General | Settings | Audio | Data | Local Hotlinks

Name: DynamicMenuXML

☑ Dynamic Configuration

URI ▾ | http://10.58.16.180:7000/CVP/CiscoLiveMenuConfig.xml

☑ Create Base Configuration

Add To Log:

Name	Value	Create

Menu element settings configured with default values that can be overridden at run-time
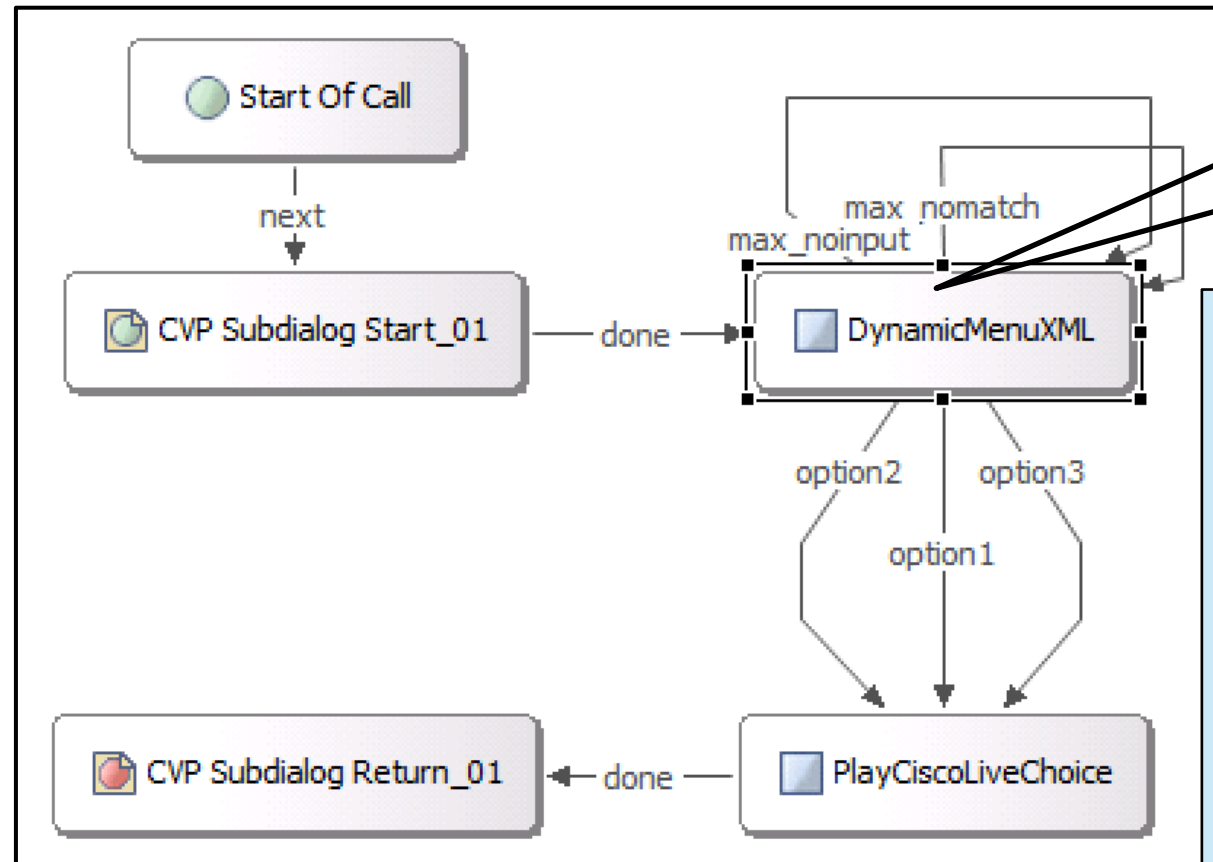
Flowchart:

- Start Of Call
  - next ↓
- CVP Subdialog Start_01 — done → DynamicMenuXML
  - max_nomatch
  - max_noinput
  - option2, option1, option3 ↓
- PlayCiscoLiveChoice — done → CVP Subdialog Return_01

Voice Element - 3_Option_

General | Settings | Audio | Data | Local Hotlinks

Name	Value
✱ Noinput Timeout	5s
✱ Max NoInput Count	3
✱ Max NoMatch Count	3
✱ Confidence Level	0.40
✱ Disable Hotlinks	false
⊞ Option 1 DTMF	*
⊞ Option 1 Voice	undefined
✱ Option 1 Value	0
⊞ Option 2 DTMF	*
⊞ Option 2 Voice	undefined
✱ Option 2 Value	0
⊞ Option 3 DTMF	*
⊞ Option 3 Voice	undefined
✱ Option 3 Value	0

3

Dynamic Menus

Run-time Configuration (XML)

Voice Element - 3_Option_Menu

General | Settings | Audio | Data | Local Hotlinks

Name: DynamicMenuXML

☑ Dynamic Configuration

URI ▼ | http://10.58.16.180:7000/CVP/CiscoLiveMenuConfig.xml

☑ Create Base Configuration

Add To Log:

Name	Value	Create

Flow diagram:

- Start Of Call
  - next → CVP Subdialog Start_01
    - done → DynamicMenuXML (max_nomatch, max_noinput self-loops)
      - option2, option3, option1 → PlayCiscoLiveChoice
        - done → CVP Subdialog Return_01

CiscoLiveMenuConfig.xml

```xml
<configuration class="com.audium.server.voiceElement.menu.MFoundation3OptionMenu">
    <setting name="inputmode">both</setting>

    <audio_group name="initial_audio_group" bargein="true">
        <audio name="audio item">Welcome to Cisco Live London. </audio>
        <audio name="audio item">Press 1 for Collaboration sessions,
                                  2 for Security or 3 for Data Centre</audio>
    </audio_group>

    <setting name="option1_dtmf">1</setting>
    <setting name="option1_voice">Collaboration</setting>
    <setting name="option1_value">collab</setting>

    <setting name="option2_dtmf">2</setting>
    <setting name="option2_voice">Security</setting>
    <setting name="option2_value">sec</setting>

    <setting name="option3_dtmf">3</setting>
    <setting name="option3_voice">Data Centre</setting>
    <setting name="option3_value">data</setting>
</configuration>
```

Configure audio

Override option 1 settings

Override option 2 settings

Override option 3 settings

Dynamic Menus
Run-time Configuration (XML)

Voice Element - 3_Option_Menu

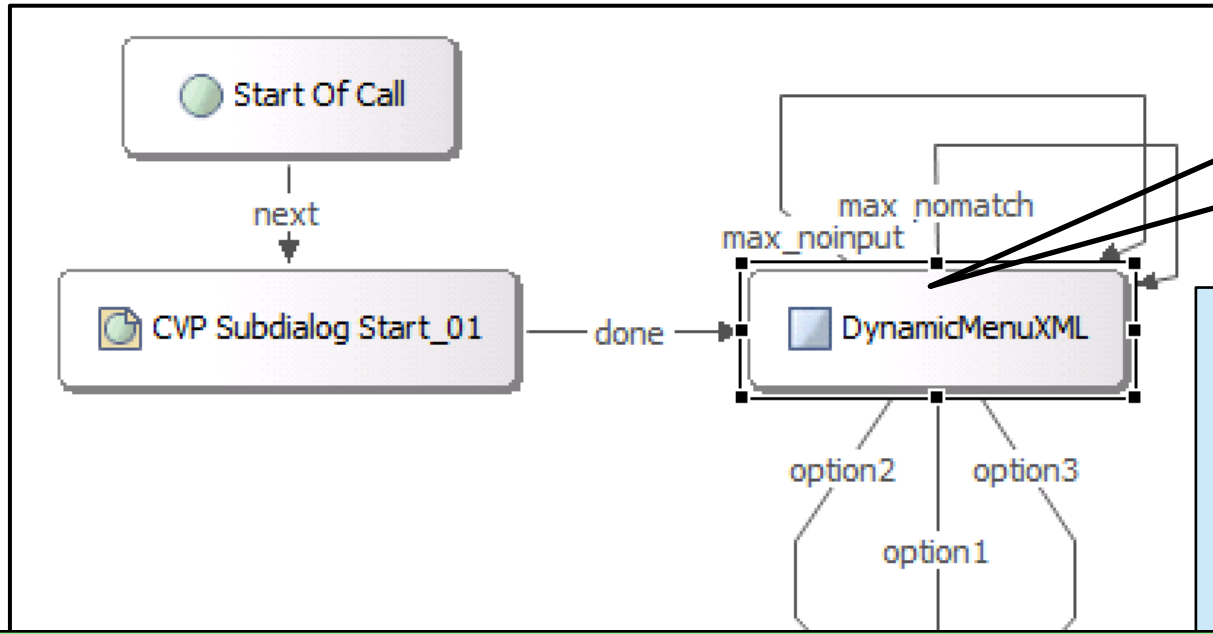General | Settings | Audio | Data | Local Hotlinks

Name: DynamicMenuXML

☑ Dynamic Configuration

URI ▾ `http://10.58.16.180:7000/CVP/CiscoLiveMenuConfig.xml`

☑ Create Base Configuration

Add To Log:

Name	Value	Create

Start Of Call

↓ next

CVP Subdialog Start_01 — done → DynamicMenuXML

max_nomatch
max_noinput

option2   option3
option1

CiscoLiveMenuConfig.xml

```
<configuration class="com.audium.server.voiceElement.menu.MFoundation3OptionMenu">
     <setting name="inputmode">both</setting>

     <audio_group name="initial_audio_group" bargein="true">
         <audio name="audio item">Welcome to Cisco Live London. </audio>
         <audio name="audio item">Press 1 for Collaboration sessions,
                       2 for Security or 3 for Data Centre</audio>
```

Configure audio

```
...f">1</setting>
...ce">Collaboration</setting>
...ue">collab</setting>
```

Override option 1 settings

```
...f">2</setting>
...ce">Security</setting>
...ue">sec</setting>
```

Override option 2 settings

```
...f">3</setting>
...ce">Data Centre</setting>
...ue">data</setting>
```

Override option 3 settings

```
<form id="start">
   <field name="choice_fld" modal="false">
      <property name="inputmodes" value="dtmf voice" />

      <prompt bargein="true">Welcome to Cisco Live London. Press 1 for
         Collaboration sessions, 2 for Security or 3 for Data Centre</prompt>

      <option value="collab" dtmf="1">Collaboration</option>
      <option value="sec" dtmf="2">Security</option>
      <option value="data" dtmf="3">Data Centre</option>

      <filled>
         ...
      </filled>
   </field>
</form>
```
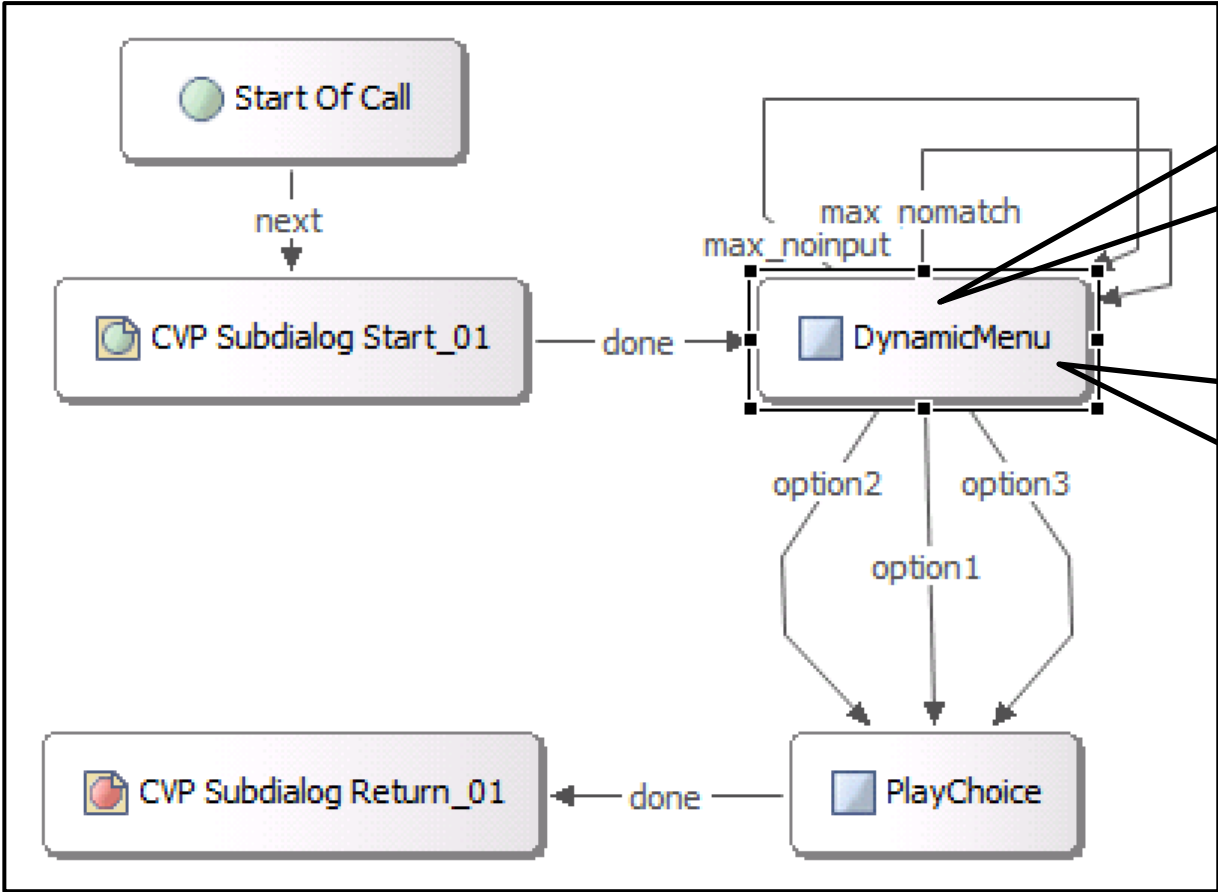
Dynamic Menus

Run-time Configuration (Java)

Voice Element - 3_Option_Menu

General | Settings | Audio | Data | Local Hotlinks

Name: DynamicMenu

☑ Dynamic Configuration

Class ▼ | com.cisco.pt.cvp.vxml.dynamic.CL13DynamicMenu

☑ Create Base Configuration

Add To Log:

Name	Value	Create

Voice Element - 3_Option_Menu

General | **Settings** | Audio | Data | Local Hotlinks

Name	Value
✱ Noinput Timeout	5s
✱ Max NoInput Count	3
✱ Max NoMatch Count	3
✱ Confidence Level	0.40
✱ Disable Hotlinks	false
⊞ Option 1 DTMF	*
⊞ Option 1 Voice	undefined
✱ Option 1 Value	0
⊞ Option 2 DTMF	*
⊞ Option 2 Voice	undefined
✱ Option 2 Value	0
⊞ Option 3 DTMF	*
⊞ Option 3 Voice	undefined
✱ Option 3 Value	0

Diagram:
- Start Of Call
- next → CVP Subdialog Start_01
- done → DynamicMenu (max_nomatch, max_noinput)
- option2, option3, option1 → PlayChoice
- PlayChoice → done → CVP Subdialog Return_01

Dynamic Menus

Voice Element - 3_Option_Menu

General | Settings | Audio | Data | Local Hotlinks

```
public class CL13DynamicMenu implements VoiceElementInterface {

// Dynamically configues the menu element from an array of data objects, each one
// specifying the items required for a single menu option. In this example the
// data is statically defined but it could be retrieved from anywhere.

    String prompt = "Please select one of the following options";

    MenuOption[ ] optList = new MenuOption[ ]{new MenuOption("booking", "Booking", "If you're calling about a booking you've just made, press "),
                                              new MenuOption("account", "Account", "If you'd like to talk to us about your frequent flyer account, press "),
                                              new MenuOption("baggage", "Baggage", "If you're trying to locate lost baggage, press ")};
```

> **Create configuration sample data as an array of menu option objects containing text strings. Data could come from anywhere you choose.**

Dynamic Menus

```java
public class CL13DynamicMenu implements VoiceElementInterface {

// Dynamically configues the menu element from an array of data objects, each one
// specifying the items required for a single menu option. In this example the
// data is statically defined but it could be retrieved from anywhere.

    String prompt = "Please select one of the following options";

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                                              new MenuOption("account", "Account", "If you'd like to talk to us about your frequent flyer account, press "),
                                              new MenuOption("baggage", "Baggage", "If you're trying to locate lost baggage, press ")};


    public VoiceElementConfig getConfig(String name,
                          ElementAPI elementAPI,
                          VoiceElementConfig cfg) throws AudiumException

    {
```

Create configuration sample data as an array of menu option objects containing text strings. Data could come from anywhere you choose.

Implement getConfig method

Dynamic Menus

Voice Element - 3_Option_Menu

General | Settings | Audio | Data | Local Hotlinks |

```java
public class CL13DynamicMenu implements VoiceElementInterface {

// Dynamically configues the menu element from an array of data objects, each one
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                                              new MenuOption("account", "Account", "If you'd like to talk to us about your frequent flyer account, press "),
                                              new MenuOption("baggage", "Baggage", "If you're trying to locate lost baggage, press ")};


    public VoiceElementConfig getConfig(String name,
                                        ElementAPI elementAPI,
                                        VoiceElementConfig cfg) throws AudiumException
    {
        AudioGroup init_audgrp = cfg.new AudioGroup("initial_audio_group", false);

        StaticAudio tts = cfg.new StaticAudio(prompt, null);
        init_audgrp.addAudioItem(tts);
        init_audgrp.setBargein(true);
        cfg.setAudioGroup(init_audgrp);
```

Create configuration sample data as an array of menu option objects containing text strings. Data could come from anywhere you choose.

Implement getConfig method

Create audio group and add the first prompt

Dynamic Menus

Voice Element - 3_Option_Menu

General | Settings | Audio | Data | Local Hotlinks |

```java
public class CL13DynamicMenu implements VoiceElementInterface {

// Dynamically configues the menu element from an array of data objects, each one
// specifying the items required for a single menu option. In this example the
// data is statically defined but it could be retrieved from anywhere.

    String prompt = "Please select one of the following options";

    MenuOption[ ] optList = new MenuOption[ ]{new MenuOption("booking", "Booking", "If you're calling about a booking you've just made, press "),
                                              new MenuOption("account", "Account", "If you'd like to talk to us about your frequent flyer account, press "),
                                              new MenuOption("baggage", "Baggage", "If you're trying to locate lost baggage, press ")};


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                                        ElementAPI elementAPI,
                                        VoiceElementConfig cfg) throws AudiumException
    {
        AudioGroup init_audgrp = cfg.new AudioGroup("initial_audio_group", false);

        StaticAudio tts = cfg.new StaticAudio(prompt, null);
        init_audgrp.addAudioItem(tts);
        init_audgrp.setBargein(true);
        cfg.setAudioGroup(init_audgrp);

        for (int i = 1; i <= optList.length; i++)
        {
            MenuOption m = optList[i - 1];

            StaticAudio opt_tts = cfg.new StaticAudio(m.prompt + i, null);
            init_audgrp.addAudioItem(opt_tts);



        }

        return cfg;
    }
}
```

Create configuration sample data as an array of menu option objects containing text strings. Data could come from anywhere you choose.

Implement getConfig method

Create audio group and add the first prompt

For each menu option add its audio prompt to the group

Dynamic Menus

Voice Element - 3_Option_Menu

General | Settings | Audio | Data | Local Hotlinks

```java
public class CL13DynamicMenu implements VoiceElementInterface {

// Dynamically configues the menu element from an array of data objects, each one
// specifying the items required for a single menu option. In this example the
// data is statically defined but it could be retrieved from anywhere.

    String prompt = "Please select one of the following options";

    MenuOption[ ] optList = new MenuOption[ ]{new MenuOption("booking", "Booking", "If you're calling about a booking you've just made, press "),
                                              new MenuOption("account", "Account", "If you'd like to talk to us about your frequent flyer account, press "),
                                              new MenuOption("baggage", "Baggage", "If you're trying to locate lost baggage, press ")};


    public VoiceElementConfig getConfig(String name,
                                        ElementAPI elementAPI,
                                        VoiceElementConfig cfg) throws AudiumException
    {
        AudioGroup init_audgrp = cfg.new AudioGroup("initial_audio_group", false);

        StaticAudio tts = cfg.new StaticAudio(prompt, null);
        init_audgrp.addAudioItem(tts);
        init_audgrp.setBargein(true);
        cfg.setAudioGroup(init_audgrp);

        for (int i = 1; i <= optList.length; i++)
        {
            MenuOption m = optList[i - 1];

            StaticAudio opt_tts = cfg.new StaticAudio(m.prompt + i, null);
            init_audgrp.addAudioItem(opt_tts);

            cfg.setSettingValue("option" + i + "_value", m.value);
            cfg.setSettingValue("option" + i + "_voice", m.voice);
            cfg.setSettingValue("option" + i + "_dtmf", Integer.toString(i));
        }

        return cfg;
    }
}
```

> **Create configuration sample data as an array of menu option objects containing text strings. Data could come from anywhere you choose.**

> **Implement getConfig method**

> **Create audio group and add the first prompt**

> **For each menu option add its audio prompt to the group**

> **For each menu option set the DTMF, voice and value settings**

Dynamic Menus

Voice Element - 3_Option_Menu

General | Settings | Audio | Data | Local Hotlinks |

```java
public class CL13DynamicMenu implements VoiceElementInterface {

    // Dynamically configures the menu element from an array of data objects, each one
    // specifying the items required for a single menu option. In this example the
    // data is statically defined but it could be retrieved from anywhere.

    String prompt = "Please select one of the following options";

    MenuOption[ ] optList = new MenuOption[ ]{new MenuOption("booking", "Booking", "If you're calling about a booking you've just made, press "),
                                new MenuOption("account", "Account", "If you'd like to talk to us about your frequent flyer account, press "),
                                new MenuOption("baggage", "Baggage", "If you're trying to locate lost baggage, press ")};
```

Create configuration sample data as an array of menu option objects containing text strings. Data could come from anywhere you choose.

```xml
<form id="start">
    <field name="choice_fld" modal="false">
        <property name="inputmodes" value="dtmf voice" />

        <prompt bargein="true">Please select one of the following options If you're calling about a booking you've just made, press 1 If
you'd like to talk to us about your frequent flyer account, press 2 If you're trying to locate lost baggage, press 3</prompt>

        <option value="booking" dtmf="1">Booking</option>
        <option value="account" dtmf="2">Account</option>
        <option value="baggage" dtmf="3">Baggage</option>

        <filled>
            ...
        </filled>
    </field>
</form>
```

In this case, the DTMF input mapping was assigned implicitly when we iterated through the menu options list

```java
        }

        return cfg;
    }
}
```

Cisco Public