Reallusion TTS Web Player

White Paper

For CT4 Web Player

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Embedding the TTS Web Player into HTML code

The TTS (Text-to-Speech) Web Player can be embedded in a web page by placing some code in the HTML for the page, an example of which is shown below. With an understanding of what each parameter controls, you can manually edit them to achieve the desired presentation within the HTML page itself. If you understand JavaScript or VB script, you can write routines to alter the parameter values by assigning or retrieving different values to call different Events.

Note: Teaching the use of JavaScript is beyond the scope of this user manual; however, further details regarding accessing properties, methods and events are discussed in the following pages.

The TTS Web Player uses an ActiveX control for Internet Explorer. The required code to add a TTS Web Player into a web page must be placed between the <body> and </body> tags of your HTML page.

```
<OBJECT ID="RLTTSPlayer" classid=" CLSID: B7A59580-B39D-4BF9-B968-1BFA25156691"
    codebase="http://plug-in.reallusion.com/CrazyTalk4.cab#version=1,0,0,0"
    width="256" height="24">
     <param name="BackColor" value="16711680">
     <param name="ForeColor" value="65535">
     <param name="FontName" value="Arial">
     <param name="FontSize" value="100">
     <param name="TTSEngine" value="Microsoft SAPI 4.1">
     <param name="Speed" value="50">
     <param name="Pitch" value="50">
     <param name="Volume" value="80">
     <param name="AutoLoop" value="0">
     <param name="TextContent" value="A torrential, record-setting downpour that drenched Mumbai
                and triggered landslides is being blamed for more than 400 deaths in the region,
                 police in India's commercial capital say.">

     TTS Engine<br>
     Please install TTS Web Player to see the Talking Head.<br>
     <a href="http://www.reallusion.com/plug-in/installct.asp">
     http://www.reallusion.com/plug-in/installct.asp</a>
</OBJECT>
```

For Microsoft Internet Explorer, the <object> tag embeds TTS Web Player which is indicated by "CLSID: B7A59580-B39D-4BF9-B968-1BFA25156691 " in the CLASSID attribute. CODEBASE represents the URL of Player and the Player version number, so that the IE browser will automatically install TTS Web Player to the user's computer and update the control if needed. The <PARAM> tag represents the property settings of the TTS Web Player. These property values control the behavior of the Player as follows:

- **Width & Height:** Sets the size of the Player within the web page.
- **BackColor:** Sets the background color of the Player.
- **ForeColor:** Sets the display font color of the Player.
- **FontName:** Sets the display font name of the Player, such as "Arial" and so on.
- **FontSize:** Sets the display font size, by pixel, of the Player.
- **TTSEngine:** Assigns the TTS Engine you want to use. Currently this property must be either "Microsoft SAPI 4.1" or "Microsoft SAPI 5.0".
- **Speed:** Sets the speech speed of the TTS Engine (0 ~ 100).
- **Pitch:** Sets the speech pitch of the TTS Engine (0 ~ 100).
- **Volume:** Sets the speech volume of the TTS Engine (0 ~ 100).
- **AutoLoop:** A value of 1 sets the speech to auto restart when finished, and 0 sets the speech to stop.

- **TextContent:** Sets the text that will be spoken by the TTS Engine.
- **VoiceID:** Sets the voice that you want to use in the TTS Engine.

You can copy and paste the above example into an existing web page. The TTS Engine assigned by the “TTSEngine” property, such as Microsoft SAPI4 and SAPI5, must be installed on your computer in order for the TTS Web Player to operate properly. Each TTS Engine includes various voices and names, and one can list these voices using Javascript. Readers can choose among them by using Javascript or through the TTS Web Player user interface.

Controlling the CrazyTalk Web Player

You can configure the “CrazyTalk4 Web Player” to show a viseme and expressions by placing a “CrazyTalk4 Web Player” ActiveX control in the same HTML document and linking it to the TTS Web Player ActiveX control. For operating any other ActiveX control in Microsoft Internet Explorer, you must write JavaScript or VBScript code in the HTML document to enable that function. An example of JavaScript code that will operate a CrazyTalk4 Web Player ActiveX control linked with the TTS Web Player ActiveX control is shown below:

```
<OBJECT CLASSID="CLSID: 13149882-F480-4F6B-8C6A-0764F75B99ED" id="CrazyTalkPlayer"
width="256" height="256">
  <param name="ModelName" value="Luka.ctm">
  <param name="ScriptName" value="Luka.cts">
</OBJECT>

< OBJECT CLASSID =" CLSID: B7A59580-B39D-4BF9-B968-1BFA25156691" id= "RLTTSComponent"
width="256" height="24">
  <param name="TTSEngine" value="Microsoft SAPI 5.0">
</OBJECT>

<SCRIPT language="javascript">
RLTTSComponent.AttachCtrl(CrazyTalkPlayer);
</SCRIPT>
```

Note that the above example does not set the parameters for each object; the user must set these parameters for any actual application. When you control a CrazyTalk Web Player with a TTS Web Player, the CrazyTalk Web Player will ignore some of the parameters set by users. For more information about using CrazyTalk Web Player, see the *CrazyTalk Web Player white paper*.

Accessing Properties

By assigning the open properties, you can initialize a TTS Web Player or control its interaction with users. To initialize the Player, specify the values of the properties between the <object> tags. The Player then starts with these values; these values can be changed by using JavaScript or VBScript to control the interaction.

Player Initialization

To initialize a TTS Player in Microsoft Internet Explorer, specify the properties in the <object> segment. Each assignment begins with a <PARAM> tag, after which a property is assigned to the *name* and *value* variables. For example, to set the Player to AutoPlay, add the following line to your script between the <object> and </object> tags.

```
<PARAM NAME="AutoLoop" VALUE="1">
```

Controlling the Interaction

JavaScript can be used to control the TTS Web Player properties. For example, if you have an object named "TTSComponent" in your web page, and want to access its property "**AutoLoop**", the script would be as follows:

```
TTSComponent.AutoLoop=1; // To set the value of the AutoLoop property
var AutoPlay= TTSComponent.AutoLoop; //To get the value of the AutoLoop property
```

For the details of all of the TTS Web Player properties, please refer to the [TTS Property Summary]

Invoking Methods

Follow the usual object model to invoke a method through the TTS Web Player for Internet Explorer. The following example defines Play and Stop buttons that invoke the **Play** and **Stop** methods of TTS Web Player.

```
<form>
     <input type=button name=playbtn value="Play" onclick="TTSComponent.Play()">
     <input type=button name=stopbtn value="Stop" onclick=" TTSComponent.Stop()">
</form>
```

The following codes have the same effect as the above. There are many situations where code could be written to invoke methods in this way.

```
<Script Lanaguage="JavaScript">
function Play() {
document.TTSComponent.Play();
// put other codes you want to do after invoking the Play method
}
function Stop() {
document. TTSComponent .Stop();
}
</Script>
… …
<form>
<input type=button name=playbtn value="Play" onclick="Play()">
<input type=button name=stopbtn value="Stop" onclick="Stop()">
</form>
```

For a full list of supported TTS Web Player methods, consult [TTS Web Player Method Summary]

Capturing Script Events from the TTS Web Player

The TTS Web Player in a web page sends specific messages to the browser to indicate that certain Events have occurred, e.g., Play or Stop. These messages are called "Events". Using JavaScript, you can capture these Events and manipulate them to invoke a response. The following example shows how to handle the Events in the TTS Web Player.

Capturing Script Events from the TTS Web Player

Syntax:

```
<Script Language="JavaScript" For="TTSComponent" Event="Event(Pn)">
      // code goes here
</script>
```

Description:

- ***TTSComponent:*** The ID specified in the <Object> section.
- ***Event(Pn):*** The Event to capture and its parameters (Pn)

Let's use the Pause Event as an example. The TTS Web Player fires a Pause Event whenever it is paused. The Pause Event carries no parameter. The following sample code will capture the Pause Event, and then prompt the user of this Event by using the Alert command of JavaScript.

Example:

```
<Script Language="JavaScript" For="TTSComponent" EVENT="Pause()">
      alert(''Pause');
</script>
```

For a full list of supported TTS Web Player Events, consult [Appendix D: TTS Web Player Event Summary]

TTS Web Player Property Summary

Property Name	Description
AutoLoop	Set to true in order to enable the TTS Player auto loop.
BackColor	Sets a value to specify the background color.
FontName	Sets the display font name.
FontSize	Sets the display font size.
FontStyle	Sets the display font style.
ForeColor	Sets the display font color.
Pitch	Sets the pitch of the TTS Engine.
Speed	Sets the speed of the TTS Engine.
TextContent	Sets the text to be read by the TTS Engine.
TTSEngine	Sets which TTS Engine to use.
VoiceID	Sets which Voice to use.
Volume	Sets the volume of TTS Engine.

AutoLoop

This property specifies the TTS Player auto loop or when not to play to the end.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.AutoLoop = bLoop;      // Set
    var bLoop = document.TTSComponent.AutoLoop;  // Get
</Script>
```

Possible Value

This property has a **Boolean** format and takes one of the following values:

Value	Description
True	The Player will auto loop.
False	The Player will not auto loop. (Default)

Remarks

None

Back to Property Summary

BackColor

This property specifies the background color of the TTS Web Player.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.BackColor=iColor;        //set
    var iColor=document. TTSComponent.BackColor;   //get
</Script>
```

Possible Value

This property is an **Integer** with a default value of #000000. It consists of an RGB color in 0XBBGGRR format.

Example:

Value	Description
0X00FF00	Green color
0XFF0000	Blue color
0X0000FF	Red color

Remarks

None

Back to Property Summary

FontName

This property specifies the display font name .

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.FontName=szFontFile;
</Script>
```

Possible Value

This property is a **String**, and can be set to any system truetype font name. If the specified font name is not existed, TTS Web Player will use the system default font name.

Remarks

None

Back to Property Summary

FontSize

This property specifies the display font size.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.FontSize=pxSize;        //set
    var pxSize = document.TTSComponent.FontSize; //get
</Script>
```

Possible Value

This property is an **Integer**, and specifies the font size in pixels.

Remarks

None

Back to Property Summary

FontStyle

This property specifies the display font style.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.FontStyle=nStyle;        //set
    var nStyle=document.TTSComponent.FontStyle;    //get
</Script>
```

Possible Value

This property is a **Integer** that includes one or a combination of the following values:

Value	Description
0	Regular
1	Bold
2	Italic
4	Underline

Remarks

A value 3 (1+2) for the FontStyle property indicates that the font style is Bold (1) and Italic (2).

Back to Property Summary

ForeColor

This property specifies the text color of the TTS Web Player.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.ForeColor=iColor;        //set
    var iColor=document. TTSComponent.ForeColor;   //get
</Script>
```

Possible Value

This property is an **Integer** with a default value of #000000. It consists of an RGB color in 0XBBGGRR format.

Example:

Value	Description
0X00FF00	Green color
0XFF0000	Blue color
0X0000FF	Red color

Remarks

None

Back to Property Summary

Pitch

This property specifies a value that indicates the speaking pitch of the TTS Engine.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.Pitch = nPitch;       //set
    var nPitch = document.TTSComponent.Pitch;   //get
</Script>
```

Possible Value

This property is an **Integer** that takes a value between 0 and 100.

Remarks

None

Back to Property Summary

Speed

This property specifies a value that indicates the speaking speed of the TTS Engine.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.Speed = nSpeed;       //set
    var nSpeed = document.TTSComponent.Speed;  //get
</Script>
```

Possible Value

This property is an **Integer** that takes a value between 0 and 100.

Remarks

None

Back to Property Summary

TextContent

This property specifies a text string that will be spoken by the TTS Engine.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.TextContent = strText;      //set
    var nstrText = document.TTSComponent.TextContent;  //get
</Script>
```

Possible Value

This property is a **String** value.

Remarks

None

Back to Property Summary

TTSEngine

This property specifies which TTS Engine will be used.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.TTSEngine = strTTSEngine;       //set
    var strTTSEngine = document.TTSComponent.TTSEngine;   //get
</Script>
```

Possible Value

This property is a **String** value, and the currently possible values are given below:

Value	Description
Microsoft SAPI 4.1	Use Microsoft SAPI 4.1 as the TTS Engine
Microsoft SAPI 5.0	Use Microsoft SAPI 5.0 as the TTS Engine

Remarks

Ensure that the specified TTS Engine is properly installed on your system.

Back to Property Summary

VoiceID

This property specifies the voice to be used by the TTS Engine.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.VoiceID=nVoiceID;          //set
    var nVoiceID=document.TTSComponent.nVoiceID;   //get
</Script>
```

Possible Value

This property is an **Integer** value, with a default value of 0.

Remarks

Since the number of voices in a TTS Engine varies, users can call the GetVoliceCount() method to get a count of the available voices.

Back to Property Summary

Volume

This property specifies a value that indicates the speaking volume of the TTS Engine.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.Volume = nVolume;       //set
    var nVolume = document.TTSComponent.Volume;   //get
</Script>
```

Possible Value

This property is an **Integer** that takes a value between 0 and 100.

Remarks

None

Back to Property Summary

TTS Web Player Method Summary

Method Name	Description
AboutBox	Shows information about this ActiveX control.
AttachCtrl	Attaches a CT4 Web Player control to this ActiveX control.
DetachCtrl	Detaches the attached control from this ActiveX control.
GetVoiceCount	Gets the voice count from the current TTS Engine.
GetVoiceString	Gets the voice name for each voice.
Pause	Pauses play.
Play	Starts play.
SetVoiceByName	Sets the Voice by assigning a voice name.
Stop	Stops play.

AboutBox

This method shows information about this ActiveX control.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.AboutBox();
</Script>
```

Parameters

None

Remarks

None.

Back to Method Summary

AttachCtrl

This method attaches an ActiveX control to the TTS Web Player.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.AttachCtrl( IDispatch *lpObject );
</Script>
```

Parameters

lpObject

An object that will be controlled by the TTS Web Player. Currently, only a CrazyTalk Web Player object can be assigned to this method.

Remarks

The result of assigning an object other than the CrazyTalk Web Player to this method is unpredictable.

Back to Method Summary

DetachCtrl

This method detaches the attached object from the TTS Web Player Object.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.DetachCtrl();
</Script>
```

Parameters

None

Remarks

None

Back to Method Summary

GetVoiceCount

This method returns the voice count for the current TTS Engine.

Syntax

```
<Script Language=Javascript>
    var nCount = document.TTSComponent.GetVoiceCount();
</Script>
```

Parameters

None

Remarks

None

Back to Method Summary

GetVoiceString

This method returns the name of the specified voice.

Syntax

```
<Script Language=Javascript>
    var strName = document.TTSComponent.GetVoiceString(int nIndex);
</Script>
```

Parameters

nIndex

An **Integer** value that specifies the voice from its index in the TTS Engine. This value must be between 0 and the value obtained from calling ***GetVoiceCount()***.

Remarks

None.

Back to Method Summary

Pause

This method suspends the current playback at the current position.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.Pause()l
</Script>
```

Parameters

None

Remarks

This method performs the same action as clicking the Pause button on the control bar. Calling this method will cause a **Pause** Event to occur.

Back to Method Summary

Play

This method starts the speech playback.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.Play();
</Script>
```

Parameters

None

Remarks

This method performs the same action as clicking the Play button on the control bar. Calling this method will cause a **Play** Event and many **WordPositionChange** Events to occur.

Back to Method Summary

SetVoiceByName

This method specifies the voice for the TTS Engine by name.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.SetVoiceByName (String strName);
</Script>
```

Parameters

strName

A text **String** that gives the name of the specified voice in the TTS Engine. You can get a voice's name by using the ***GetVoiceString()*** method.

Remarks

Since the same voice from the same TTS Engine may have different IDs in different systems, one should specify the voice by name in order to make sure that the TTS Engine will use the same voice in each system.

Back to Method Summary

Stop

This method stops playback of the content.

Syntax

```
<Script Language=Javascript>
    document.TTSComponent.Stop()
</Script>
```

Parameters

None

Remarks

This method performs the same action as clicking the Stop button on the control bar. To halt a Play operation without changing the current position, you must use the **Pause** method. Calling this method will cause a **Stop** Event to occur.

Back to Method Summary

TTS Web Player Event Summary

Event Name	Description
Play	Occurs when the TTS Web Player begins to play.
Pause	Occurs when the TTS Web Player is paused.
Stop	Occurs when the TTS Web Player is stopped.
WordPositionChange	Occurs when the current sentence is spoken.
EOF	Occurs when the end of the text is reached.

Play

This Event occurs when the TTS Web Player begins to play.

Syntax

```
<Script FOR=" TTSComponent"
    Event="Play()"
    Language="JavaScript">
    <!-- insert script commands -->
</Script>
```

Parameters

None

Remarks

Calling the Play method causes this Event to occur.

Back to Event Summary

Pause

This Event occurs when the TTS Web Player is paused.

Syntax

```
<Script FOR=" TTSComponent"
    Event="Pause()"
    Language="JavaScript">
    <!-- insert script commands -->
</Script>
```

Parameters

None

Remarks

Calling the Pause method causes this Event to occur.

Back to Event Summary

Stop

This Event occurs when the TTS Web Player is stopped.

Syntax

```
<Script FOR=" TTSComponent"
    Event="Stop()"
    Language="JavaScript">
    <!-- insert script commands -->
</Script>
```

Parameters

None

Remarks

Calling the Stop method causes this Event to occur.

Back to Event Summary

WordPositionChange

This Event occurs when the current sentence is spoken.

Syntax

```
<Script FOR=" TTSComponent"
    Event="WordPositionChange(strSentence)"
    Language="JavaScript">
    <!-- insert script commands -->
</Script>
```

Parameters

strSentence

A text **String** which is the sentence currently being spoken by the TTS Engine.

Remarks

This Event occurs multiple times during the speaking period.

Back to Event Summary

EOF

This Event occurs when the end of the file is reached.

Syntax

```
<Script FOR="TTSComponent"
    Event="EOF()"
    Language="JavaScript">
    <!-- insert script commands -->
</Script>
```

Parameters

None

Remarks

None

Back to Event Summary