

# LiveArea™ Specifications

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# 1 Overview

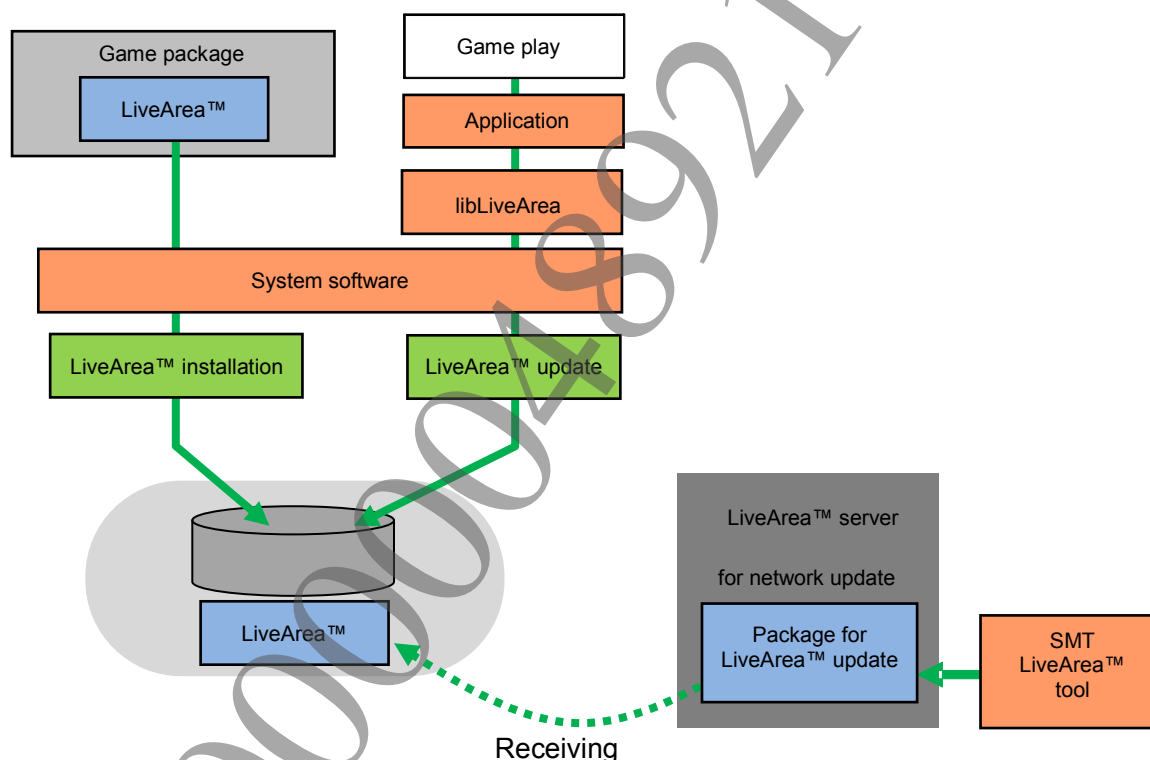
## Introduction to LiveArea™

LiveArea™ is an application's top screen that is prepared for each application. An application can be started from LiveArea™; it is also possible to read a software manual and to terminate the application from LiveArea™. Moreover, LiveArea™ provides an interactive communication method; for example, an application's latest information can be obtained via a network and displayed in LiveArea™ and gameplay progress of other users using the same application can be exchanged through activity feeds in LiveArea™. LiveArea™ is an area provided for each game which enables the enjoyment of a game to be shared among users, thereby facilitating more active communication.

## LiveArea™ System Overview

Figure 1 shows the LiveArea™ system configuration.

**Figure 1 LiveArea™ System Configuration**



Explanation on the installation and update of each LiveArea™ is provided below.

### Package Installation

LiveArea™ included in a package is installed at the time of the installation of the package. LiveArea™ installed from a package will be displayed immediately after the installation or when the LiveArea™ update is cleared.

### Distribution from SMT

It is possible to upload LiveArea™ to the server with LiveArea™ tool of Server Management Tool (SMT). LiveArea™ on the server is installed to PlayStation®Vita through automatic or manual update.

## Update from an Application

An application can update content information zone of LiveArea™ by making use of libLiveArea.

## Update Timing

The installed LiveArea™ may be updated at the following timing.

### Automatic Update

Update processing is started up by opening LiveArea™ with the network connection established. Also, the update processing is automatically performed once a day for six titles that have been started up most recently if **Settings -> System -> Auto-Start Settings -> Refresh LiveArea™ Screen** is enabled.

### Manual Update

Tapping the update button of LiveArea™ () starts up the update processing.

### Update from within an Application

Update processing can be performed from within an application by making use of libLiveArea.

#### Note

The installed LiveArea™ is stored in the internal flash memory of PlayStation®Vita even if LiveArea™ is updated. Note that LiveArea™ may be returned to the state at the time of the installation through user operations, etc. For the timing at which the LiveArea™ update is cleared, refer to the "Conditions by Which LiveArea™ Returns to the State at the Time of Installation" section in the chapter 7: Precautions.

## Sample Programs

The following programs are provided as sample programs for reference purposes:

- sample\_code/system/api\_livearea/template\_files/  
A sample LiveArea™ resource XML file.
- sample\_code/system/api\_livearea/application\_bootup/  
A sample that starts up the application from LiveArea™ with the psla scheme's URI. In the application, start-up event parameters are parsed by using the application utility library's functions. For details on the application utility library, refer to the "Application Utility Overview" document.

## Reference Materials

Refer to the following documents to use LiveArea™.

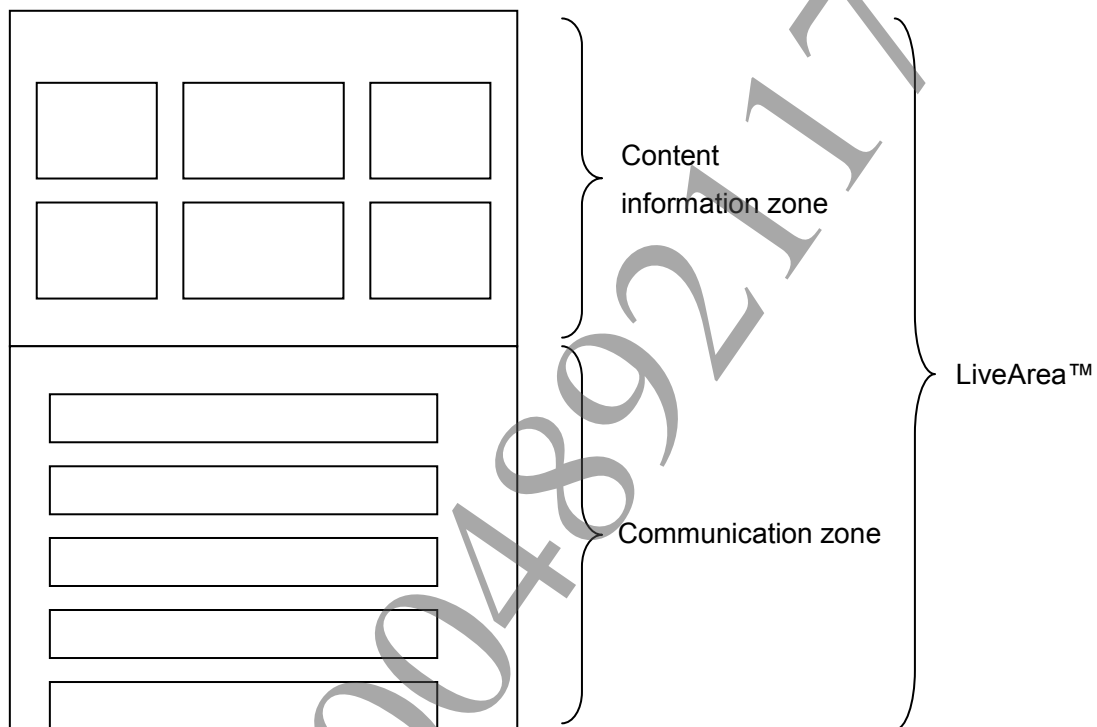
- LiveArea™ Authoring Tool User's Guide  
This is a document of the LiveArea™ Authoring Tool for creating/checking the screen configurations of content information zones for LiveArea using a GUI.
- libLiveArea Overview, libLiveArea Reference  
These documents describe the library used to update LiveArea™ from applications.
- Server Management Tools NP LiveArea™ Tool User's Guide  
This document describes the Web tool used to update LiveArea™ from the server.
- Technical Requirements Checklist for PlayStation®Vita  
This document summarizes regulations regarding the design and operation of LiveArea™.
- Package Generator User's Guide  
For the methods to create packages or specific packages used to update LiveArea™, refer to this document.

## 2 Screen Configuration

LiveArea™ consists of two screens that are changeable by flicking vertically.

- Content information zone  
This area displays the application-related information. For details, refer to Chapter 3 "Content Information Zone."
- Communication zone  
This area is for application-related communication. For details, refer to Chapter 4 "Communication Zone."

**Figure 2 LiveArea™ Screen Configuration**



### 3 Content Information Zone

The content information zone consists of a "background image", a "gate" and "live items".

A screenshot of the application is displayed in the gate while the application is running. A predefined image included in the application resources is displayed before the application is started and after the application is terminated.

When the gate is tapped, the application goes into full screen mode.

Live item content that is statically described in the configuration file (XML) is the default state, but it can be updated from the application API or backend server.

Live item content is assumed to consist of the following.

- Notification of additional content  
Links to relevant PlayStation®Store content pages
- Notification of events  
Links to relevant web browser pages

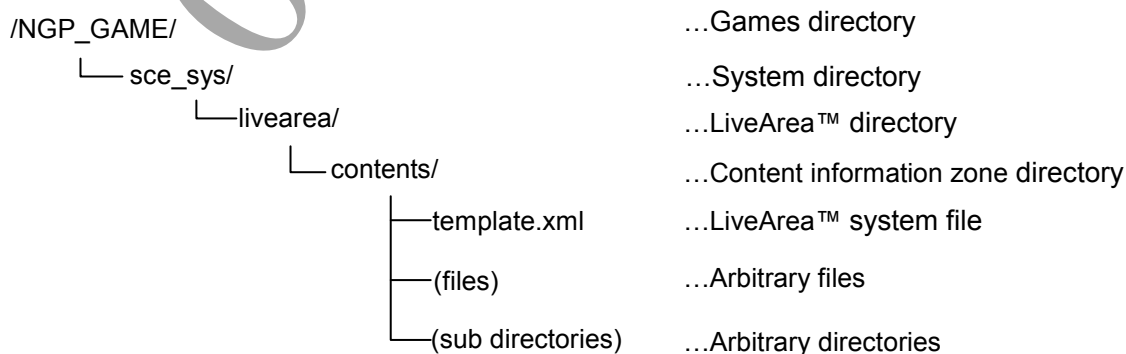
**Figure 3 Content Information Zone**



#### File Configuration

Content information zone files are arranged as follows.

**Figure 4 Content Information Zone**



**LiveArea™ system file**

This is the content information zone definition file. Images and text can be specified. For details, refer to Chapter 5 "Content Information Zone XML Specifications."

**Arbitrary files**

File names must not exceed 32 bytes.

**Arbitrary directories**

Directory names must not exceed 16 bytes. Also, folders can only be created on one level.

000004892117

## 4 Communication Zone

The communication zone displays information such as the progress of a game or the purchase history at a store as status. Status can be posted with comments or remarks such as "Like", which can facilitate communication between users. The system which allows status to be shared in this manner among users for the purpose of facilitating communication is called as the "activity system".

For details about the activity system, refer to the "Activity System Overview" document.

**Figure 5 Communication Zone**





## 5 Content Information Zone XML Specifications

The supported character code of the XML file is UTF-8 and the linefeed code is CRLF.

The file size must not exceed 32KB.

### Overall XML Structure

```
<livearea style="a1" format-ver="01.03" content-rev="1">
  <livearea-background>
    ...
  </livearea-background>
  <gate>
    ...
  </gate>
  <frame id="frameXXX" >
    <liveitem>
      <target>...</target>
      <background>...</ background>
      <image>...<image>
      <text>...</text>
    </liveitem>
    <liveitem>
      ...
    </liveitem>
    ...
  </frame>
</livearea>
```

The content information zone contains the following items.

- livearea-background
- gate
- frame

"frame" contains the following item.

- liveitem

"liveitem" contains the following items.

- target
- background
- image
- text

Styles

The content information zone has the following five styles, any of which can be selected.

Figure 6 LiveArea™ Type a1

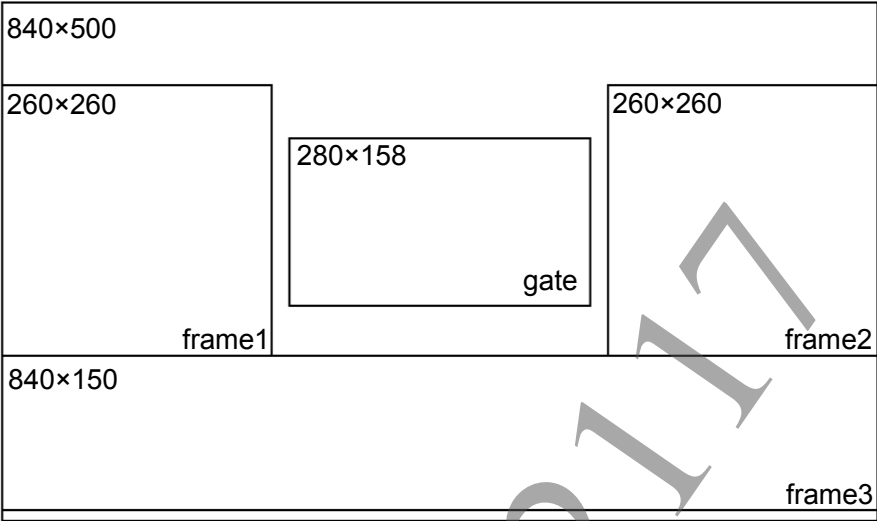
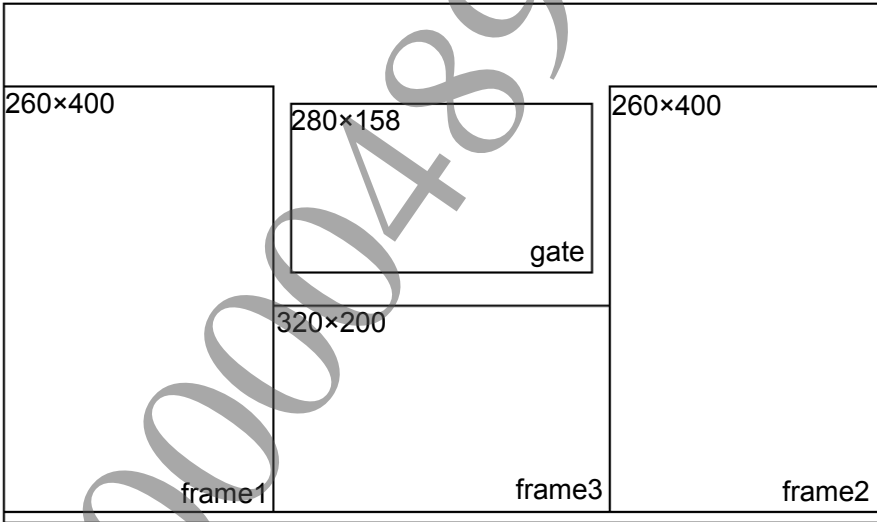
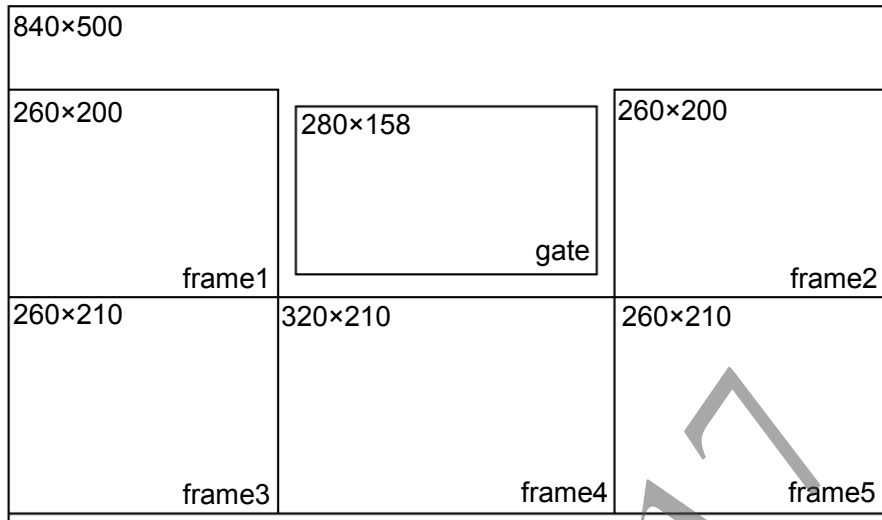
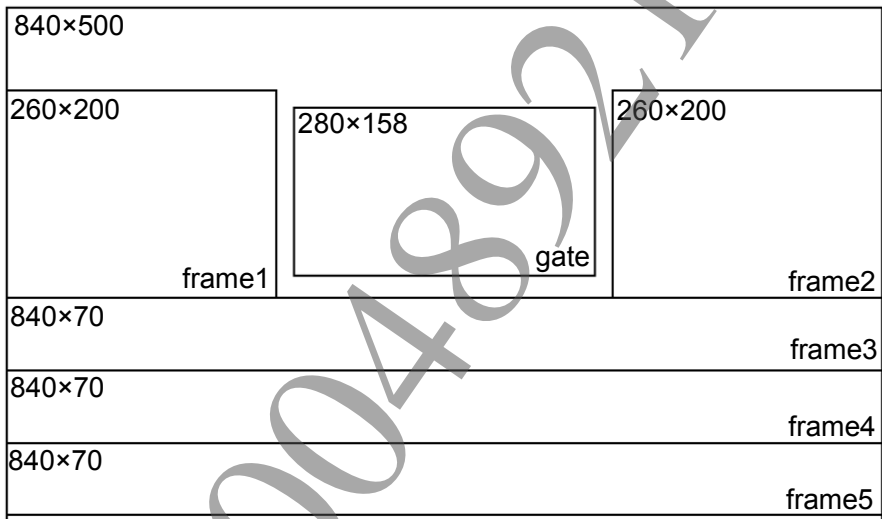
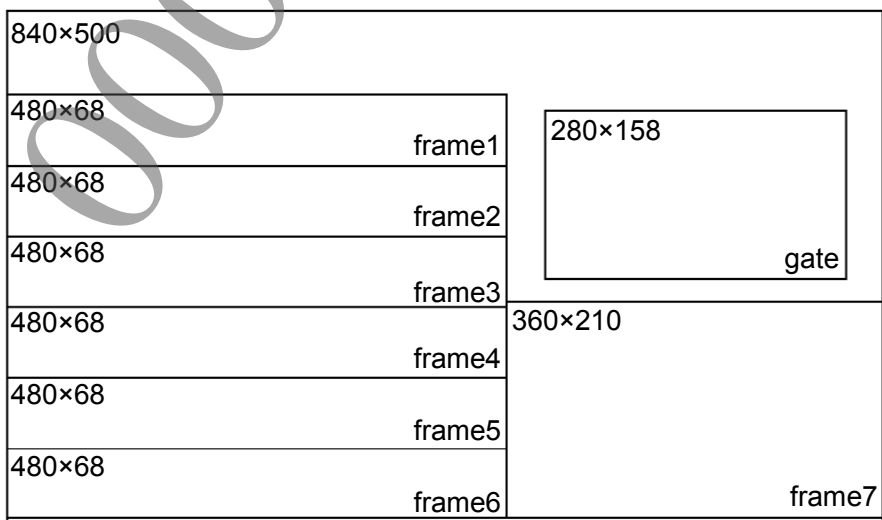


Figure 7 LiveArea™ Type a2



**Figure 8 LiveArea™ Type a3****Figure 9 LiveArea™ Type a4****Figure 10 LiveArea™ Type a5**

## Basic Values of Tags and Attributes

### File path

Refer to "Arbitrary files" and "Arbitrary directories" items described in the "File Configuration" section of Chapter 3 "Content Information Zone."

### Layout specification

#### Size

The width is defined to be the horizontal size of the content unless it is specified by the "width" attribute.

The height is defined to be the vertical size of the content unless it is specified by the "height" attribute.

#### Reference space

The "origin" attribute determines where the origin of an item is located. The <image> and <text> items have this attribute. For example, if "frame" is specified for the "origin" attribute when placing an <image> item, the origin of the item will be located at the center of the "frame". If "background" is specified, the "background" will become the origin.

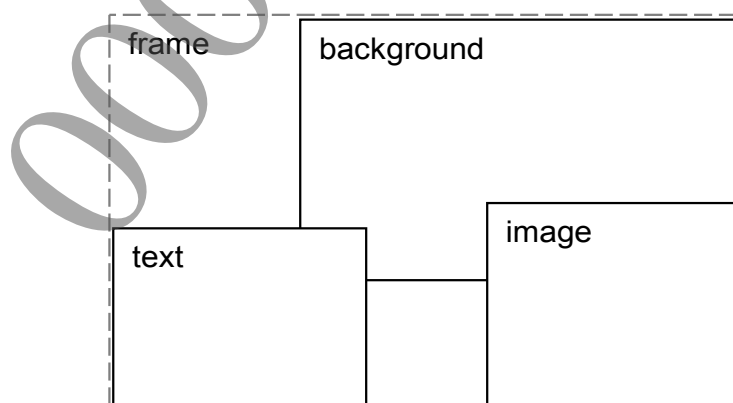
#### Position

The horizontal position will be equal to the value of the "x" attribute, if it is specified. If the "x" attribute is not specified, then the horizontal position will automatically be calculated according to the value specified by the "align" attribute. The initial value will differ depending on the item. The values that can be specified for the "align" attribute are "left", "center" and "right". If the item has an "origin" attribute and something other than "frame" has been entered for its value, "outside-left" and "outside-right" can also be specified for the "align" attribute.

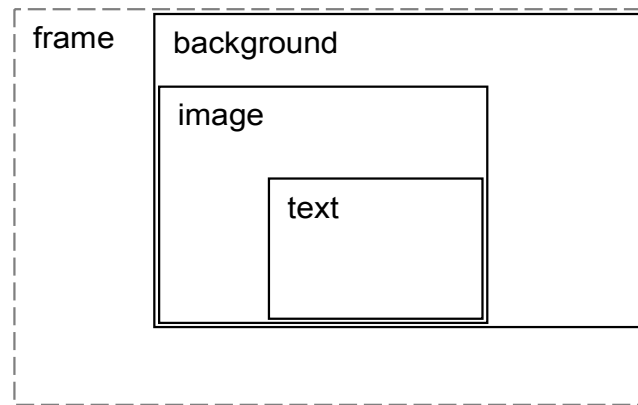
The vertical position will be equal to the value of the "y" attribute, if it is specified. If the "y" attribute is not specified, the position will automatically be calculated according to the value specified by the "valign" attribute. The initial value will differ depending on the item. The values that can be specified for the "valign" attribute are "top", "center" and "bottom". If the item has an "origin" attribute and something other than "frame" has been entered for its value, "outside-top" and "outside-bottom" can also be specified for the "valign" attribute.

Some examples in which "liveitem" contains "background", "image" and "text" are shown below.

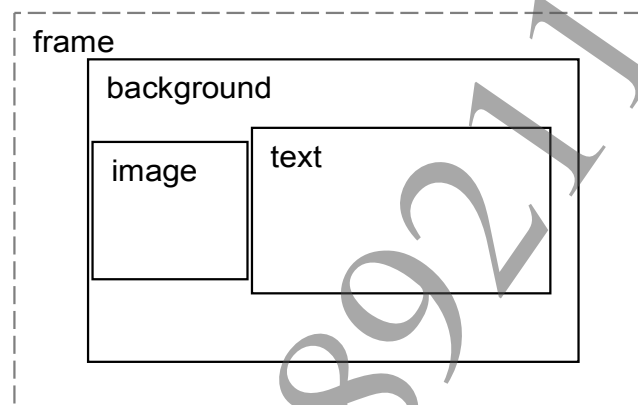
```
<background align="right" valign="top">...</background>
<image align="right" valign="bottom" origin="frame">...</image>
<text align="left" valign="bottom" origin="frame">...</text>
```



```
<background align="right" valign="top">...</background>
<image align="left" valign="bottom" origin=" background">...</image>
<text align="right" valign="bottom" origin="image">...</text>
```



```
<background align="center" valign="center">...</background>
<image align="left" valign="center" origin="background">...</image>
<text align="outside-right" valign="center" origin="image">...</text>
```



### Limit processing

As a basic rule, an object cannot have a layout position outside of "frame". No matter what values are entered for "x", "y", "width", and "height", the object will always be positioned inside "frame".

When "origin" is specified, the layout will be inside of the object specified by "origin". Note that if "outside-left", "outside-right", "outside-top", or "outside-bottom" are specified, the layout will be adjusted so that it will be inside of the object specified with "origin" of the object specified with the "origin" object.

In the example below, the objects will be positioned as shown in Figure 11.

```
<background align="center" valign="center">...</background>
<image align="left" valign="center" origin="background">...</image>
<text align="outside-right" valign="center" origin="image">...</text>
```

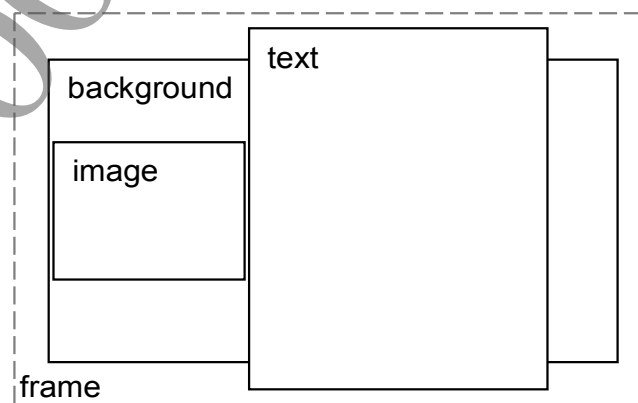
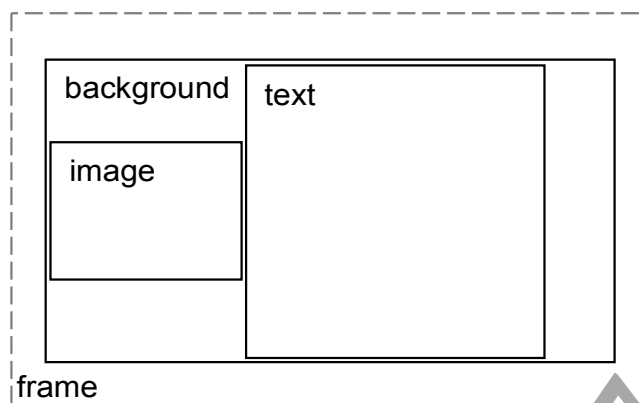


Figure 11



The "background" object is specified as the "image" object's origin. The "image" object is specified as the "text" object's origin. The "text" object itself will be positioned inside of the "background" object.

### XML country/region and language specifications provided in LiveArea™

It is possible to set the enabled or disabled country/region and language for an item.

Multiple <cntry> and <lang> tags can be specified.

#### Language specification

```
<livearea-background>
  <image>bg0.png
    <lang>en</lang>
  </image>
  <image>bg1.png
    <lang>ja</lang>
  </image>
  <image>bg2.png
    <exclude-lang>en</exclude-lang>
    <exclude-lang>ja</exclude-lang>
  </image>
</livearea-background>
```

In the above example, bg0.png and bg1.png will be displayed when the system languages are "English (United States)" and "Japanese", respectively. Also, bg2.png will be displayed when the system language is not "English (United States)" or "Japanese".

Table 1 List of Languages

Data	Language
ja	Japanese
en	English (United States)
fr	French
es	Spanish
de	German
it	Italian
nl	Dutch
pt	Portuguese (Portugal)
ru	Russian
ko	Korean
ch	Chinese (traditional)
zh	Chinese (simplified)
fi	Finnish

Data	Language
sv	Swedish
da	Danish
no	Norwegian
pl	Polish
en-gb	English (United Kingdom)
pt-br	Portuguese (Brazil)
tr	Turkish

### Country/region specification

```
<livearea-background>
  <image>bg0.png
    <cntry>us</cntry>
  </image>
  <image>bg1.png
    <cntry>jp</cntry>
  </image>
  <image>bg2.png
    <exclude-cntry>us</exclude-cntry>
    <exclude-cntry>jp</exclude-cntry>
  </image>
</livearea-background>
```

In the above example, bg0.png and bg1.png will be displayed when the specified countries/regions are "United States" and "Japan", respectively. Also, bg2.png will be displayed when other countries/regions than "United States" and "Japan" are specified.

### Country/region and language specification

```
<livearea-background>
  <image>bg0.png
    <cntry lang="en">us</cntry>
  </image>
  <image>bg1.png
    <cntry lang="ja">jp</cntry>
  </image>
  <image>bg2.png
    <exclude-cntry lang="en">us</exclude-cntry>
    <exclude-cntry lang="ja">jp</exclude-cntry>
  </image>
</livearea-background>
```

In the above example, bg0.png and bg1.png will be displayed when the specified countries/regions and system languages are "United States, English (United States)" and "Japan, Japanese", respectively. Also, bg2.png will be displayed when country/region and system language are not "United States, English (United States)" or "Japan, Japanese".

For the list of countries/regions, refer to `SceNpCountryCode` in the "NP Library Reference" document. In addition, "all" (all countries/regions) can be specified in LiveArea™.

```
<livearea-background>
  <image>bg0.png
    <cntry lang="pt">br</cntry>
    <cntry lang="pt-br">all</cntry>
  </image>
</livearea-background>
```

In the above example, bg0.png will be displayed when the specified countries/regions and system languages are "Brazil, Portuguese (Portugal)" or "all, Portuguese (Brazil)".

**default specification**

```

<livearea-background>
  <image>bg0.png
    <cntry lang="en">us</cntry>
  </image>
  <image>bg1.png
    <cntry lang="ja">jp</cntry>
  </image>
  <image default="on">bg2.png</image>
</livearea-background>

```

In the above example, bg0.png will be selected when the specified countries/regions and system languages are "United States, English (United States)" and bg1.png will be selected when the specified countries/regions and system languages are "Japan, Japanese". Since there does not exist any images to be selected for other countries/regions and system languages than "United States, English (United States)" and "Japan, Japanese", bg2.png whose "default" attribute is set to "on" will be selected.

**"default" specification example of liveitem's country/region and language**

```

<frame id="frame1">
  <liveitem>
    <cntry lang="en">us</cntry>
    <background>bg0.png</background>
  </liveitem>
  <liveitem>
    <cntry lang="ja">jp</cntry>
    <background>bg1.png</background>
  </liveitem>
  <liveitem default="on">
    <background>bg2.png</background>
  </liveitem>
</frame>

```

In the above example, bg0.png will be selected when the specified countries/regions and system languages are "United States, English (United States)" and bg1.png will be selected when the specified countries/regions and system languages are "Japan, Japanese". Since there does not exist any images to be selected for other countries/regions and system languages than "United States, English (United States)" and "Japan, Japanese", bg2.png whose "default" attribute is set to "on" will be selected.

**Note**

LiveArea™ display by language and country/region can be checked by switching the following settings:

**Languages:** display is switched based on the system language

**Settings > Language > System Language**

**Countries/Regions:** display is switched based on the Sony Entertainment Network account's country/region

**Settings > ★Debug Settings > PSN™ > Account Selection**

**livearea Tag**

This is the top level tag of LiveArea™. This tag is required.

**style attribute**

Specify one of a1 to a5. This attribute is required.

**format-ver attribute**

Currently, set this to "01.03." This attribute is required.



**content-rev attribute**

Revision for user content. This value is not used by the system and can be freely set by the user. This attribute is optional.

**livearea-background Tag**

This tag describes the LiveArea™ background image.

**Image tag**

Specify the file path of the background image. Country/region and language can be specified for this object. Since only one background image is permitted, a country/region and language check is performed sequentially from the top and the matching image is used (if one exists).

**default attribute, cntry tag, exclude-cntry tag, lang tag, exclude-lang tag**

Refer to the "XML country/region and language specifications provided in LiveArea™" of the "Basic Values of Tags and Attributes" section.

**gate Tag**

This is the gate button tag for starting the application.

**startup-image tag**

Specifies the file path of the image that is displayed in the gate before the application is started.

If the application process is suspended, an application screenshot is displayed.

**default attribute, cntry tag, exclude-cntry tag, lang tag, exclude-lang tag**

Refer to the "XML country/region and language specifications provided in LiveArea™" of the "Basic Values of Tags and Attributes" section.

**frame Tag**

This tag specifies the layout space.

**id attribute**

Specifies the string that corresponds to the style. This attribute is required (Example: id="frame1").

**multi attribute**

Display method used when multiple liveitems are set in a frame.

"o" : Perform flip display of multiple liveitems in the XML description sequence.

"r" : Perform flip display of multiple liveitems sequentially after shuffling them.

**autoflip attribute**

Interval (in seconds) for flipping multiple liveitems. Flipping is not done when "0" is specified.

**rev attribute**

Revision for user content. This value is not used by the system and can be freely set by the user. This attribute is optional.

**userdata attribute**

Character string for user content. This value is not used by the system and can be freely set by the user. The maximum number of characters is 1023. This attribute is optional.

**liveitem Tag**

This describes the live item contents.

The maximum number of liveitems permitted in one frame is 5.

**from attribute**

Used to specify the display starting date and time of a liveitem, in RFC3339 format. This attribute is optional. If it does not exist, the setting indicating that the liveitem should not be displayed before a specific date and time will be off.

**until attribute**

Used to specify the display ending date and time of a liveitem, in RFC3339 format. This attribute is optional. If it does not exist, the setting indicating that the liveitem should not be displayed after a specific date and time will be off.

**default attribute, cntry tag, exclude-cntry tag, lang tag, exclude-lang tag**

Refer to the "XML country/region and language specifications provided in LiveArea™" of the "Basic Values of Tags and Attributes" section.

**target tag**

Only one can be specified per liveitem. This tag is optional. The following link information can be specified.

Link Operation	Link Format	Parameter	Parameter Contents
Start a browser	http: https:	URL	URL
Start Title Store application with a product ID specification	psts:browse?product=PRODUCT_ID	PRODUCT_ID	Product ID of a product distributed by PlayStation®Store (Title Store)
Start Title Store application with a category ID specification	psts:browse?category=CATEGORY_ID	CATEGORY_ID	PlayStation®Store (Title Store) category ID
Start the product code input screen of Title Store application	psts:redeem		
Start an application	psla:arg *The argument's arg part is an arbitrary character string. The argument can be obtained by using the application utility library.		

**req-appver attribute**

When both the target tag link operation is "Start an application" (psla:) and the livearea tag format-ver attribute is 01.03 or greater, if the installed application version is older than the req-appver attribute value, patch checking will be performed instead of application startup.

**background tag**

Specifies the file path of the live item background image. Only one tag can be specified per liveitem. This tag is optional.

**align attribute, valign attribute, width attribute, height attribute, x attribute, and y attribute**

Refer to "Layout specification" under the "Basic Values of Tags and Attributes" section. These attributes are optional.

**image tag**

Specifies the file path of the live item image. Only one tag can be specified per liveitem. This tag is optional.

**align attribute, valign attribute, width attribute, height attribute, x attribute, and y attribute**

Refer to "Layout specification" under the "Basic Values of Tags and Attributes" section. These attributes are optional.

**origin attribute**

Specifies the reference object used when calculating the layout. The following values can be specified. Any other value is ignored.

- frame : The frame object will be used as the reference object.
- background : The background object will be used as the reference object.

The initial value is "background." This attribute is optional.

**text tag**

Enables live item text to be specified. The text tag attributes described below and the text style can be specified. Only one tag can be specified per liveitem. This tag is optional. The maximum string size is 512 bytes.

**align attribute, valign attribute, width attribute, height attribute, x attribute, and y attribute**

Refer to the "Layout specification" item under the "Basic Values of Tags and Attributes" section. These attributes are optional.

**origin attribute**

Specifies the reference object used when calculating the layout. The following values can be specified. Any other value is ignored.

- frame : The frame object will be used as the reference object.
- background : The background object will be used as the reference object.
- image : The image object will be used as the reference object.

The initial value is "background." This attribute is optional.

**text-align attribute**

Enables the horizontal alignment of the text to be specified. The following values can be specified. This attribute is optional.

- left : Align left
- center : Center
- right : Align right

**text-valign attribute**

Enables the vertical alignment of the text to be specified. The following values can be specified. This attribute is optional.

top : Align top  
center : Center  
bottom : Align bottom

**line-align attribute**

Enables the line alignment of the text to be specified. The following values can be specified. This attribute is optional.

left : Align left  
center : Center  
right : Align right

**line-space attribute**

Enables the line spacing to be specified in pixels (decimal number). A negative value cannot be used. This attribute is optional. This attribute will become valid from format-ver 01.01 and later.

**line-break attribute**

Enables hyphenation to be enabled or disabled. The following values can be specified. This attribute is optional.

off : Disables hyphenation.  
on : Enables hyphenation.

The initial value is "on."

**word-wrap attribute**

Enables you to specify whether word-wrapping (automatic linefeed) is allowed. When this attribute is enabled, a newline due to a delimiter such as a space takes precedence. When this attribute is disabled, a newline occurs only if there is a linefeed character. The following values can be specified. This attribute is optional.

off : Disable word-wrapping.  
on : Enable word-wrapping.

The initial value is "on."

**ellipsis attribute**

Enables you to specify whether to insert an ellipsis "..." when the text cannot fit in the layout frame. The following values can be specified. This attribute is optional.

off : Disable ellipsis insertion.  
on : Enable ellipsis insertion.

The initial value is "off."

**word-scroll attribute**

Enables you to specify whether to enable or disable automatic scrolling when the text cannot fit in the layout frame. If the text is one line, it will scroll horizontally. If it is more than one line, it will scroll vertically. The following values can be specified. This attribute is optional.

off : Disable text scrolling.  
on : Enable text scrolling.

The initial value is "off."

**pre-br attribute**

Enables you to specify whether a linefeed code within the <text> tag is to be reflected directly in the display. The following values can be specified. This attribute is optional.

- off : Do not reflect a linefeed code directly in the display.
- on : Reflect a linefeed code directly in the display.

The initial value is "on".

The specification <str>Play&#xA;Station</str> will appear as follows.

```
on:Play
    Station
```

```
off:PlayStation
```

**margin-top attribute**

Enables the top margin to be specified in pixels (decimal number). This attribute is optional. A negative value cannot be used.

**margin-bottom attribute**

Enables the bottom margin to be specified in pixels (decimal number). This attribute is optional. A negative value cannot be used.

**margin-left attribute**

Enables the left margin to be specified in pixels (decimal number). This attribute is optional. A negative value cannot be used.

**margin-right attribute**

Enables the right margin to be specified in pixels (decimal number). This attribute is optional. A negative value cannot be used.

**str tag**

Specifies the string and font style.

**color attribute**

Enables the color to be specified. The format is shown below. Black is "#000000" and red is "#FF0000".

prefix	Red	Green	Blue
#	2-digit hexadecimal number	2-digit hexadecimal number	2-digit hexadecimal number

**size attribute**

Enables the font size to be specified in pixels. It should be specified as a decimal number.

**bold attribute**

The following values can be specified. This attribute is optional.

- off : Bold off
- on : Bold on

The initial value is "off".

**oblique attribute**

The following values can be specified. This attribute is optional.

- off : Italic off
- on : Italic on

The initial value is "off".

**underline attribute**

The following values can be specified. This attribute is optional.

- off : Underline off
- on : Underline on

The initial value is "off".

**shadow attribute**

The following values can be specified. This attribute is optional.

- off : Shadow off
- on : Shadow on

The initial value is "off".

**emboss attribute**

The following values can be specified. This attribute is optional.

- off : Emboss off
- on : Emboss on

The initial value is "off".

**List of XML Tags Defined in LiveArea™****Table 2 livearea Tag**

Lv1 Tag	Attribute	Description	Value	Required	Multiple
<livearea>		LiveArea™ top level tag		Yes	No
	style	Layout style	a1 to a5	Yes	
	format-ver	LiveArea™ format Ver	01.03	Yes	
	content-rev	Content revision	SceInt64 (decimal notation) (ex:content-ver="1")		

**Table 3 livearea-background Tag**

Lv2 Tag	Lv3 Tag	Lv4 Tag	Attribute	Description	Value	Required	Multiple
<livearea-background>				Live item background image		Yes	No
	<image>			Image file	File path	Yes	No
			default	Default image	on off	No	
		<cntry>		Country/region for which an image is displayed		No	Yes
			lang	Optional language specification		No	
		<exclude-cntry>		Country/region for which an image is not displayed		No	Yes
			lang	Optional language specification		No	
		<lang>		Language for which an image is displayed		No	Yes
		<exclude-lang>		Language for which an image is not displayed		No	Yes

**Table 4 gate Tag**

LV2 Tag	Lv3 Tag	Lv4 Tag	Attribute	Description	Value	Required	Multiple
<gate>				Gate		Yes	No
	<startup-image>			Gate initial image	File path	Yes	No
			default	Default image	on off	No	
		<cntry>		Country/region for which an image is displayed		No	Yes
			lang	Optional language specification		No	
		<exclude-cntry>		Country/region for which an image is not displayed		No	Yes
			lang	Optional language specification		No	
		<lang>		Language for which an image is displayed		No	Yes
		<exclude-lang>		Language for which an image is not displayed		No	Yes

Table 5 frame Tag

LV2 Tag	Attribute	Description	Value	Required	Multiple
<frame>				No	Yes
	id	Space ID	frame1 to frame7	Yes	
	multi	Flip method	o r	No	
	autoflip	Flip interval	Seconds	No	
	rev	Revision	SceInt64 (decimal notation)	No	
	userdata	User data	Arbitrary character string	No	

Table 6 liveitem Tag

Lv3 Tag	Lv4 Tag	Lv5 Tag	Attribute	Description	Value	Required	Multiple
<liveitem>						No	Yes
			from	Display starting date/time	RFC3339	No	
			until	Display ending date/time	RFC3339	No	
			default	Default image	on off	No	
	<cntry>			Country/region for which an image is displayed		No	Yes
			lang	Optional language specification		No	
	<exclude-cntry>			Country/region for which an image is not displayed		No	Yes
			lang	Optional language specification		No	
	<lang>			Language for which an image is displayed		No	Yes
	<exclude-lang>			Language for which an image is not displayed		No	Yes
	<target>				URI	No	No
			req-appver	Application version required for application startup (psla:)	XX.XX (ex:01.01)	No	No
	<background>				File path	No	No
			align	Horizontal alignment	left center right	No	
			valign	Vertical alignment	to center bottom	No	



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Lv3 Tag	Lv4 Tag	Lv5 Tag	Attribute	Description	Value	Required	Multiple
			width	Width	SceInt32 (decimal notation)	No	
			height	Height	SceInt32 (decimal notation)	No	
			x	Horizontal position	SceInt32 (decimal notation)	No	
			y	Vertical position	SceInt32 (decimal notation)	No	
	<image>				File path	No	No
			align	Horizontal alignment	left center right outside-left outside-right	No	
			valign	Vertical alignment	top center bottom outside-top outside-bottom	No	
			width	Width	SceInt32 (decimal notation)	No	
			height	Height	SceInt32 (decimal notation)	No	
			x	Horizontal position	SceInt32 (decimal notation)	No	
			y	Vertical position	SceInt32 (decimal notation)	No	
			origin	Reference object	frame background	No	
	<text>					No	No
			align	Horizontal alignment	left center right outside-left outside-right	No	
			valign	Vertical alignment	top center bottom outside-top outside-bottom	No	
			width	Width	SceInt32 (decimal notation)	No	

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Lv3 Tag	Lv4 Tag	Lv5 Tag	Attribute	Description	Value	Required	Multiple
			height	Height	SceInt32 (decimal notation)	No	
			x	Horizontal position	SceInt32 (decimal notation)	No	
			y	Vertical position	SceInt32 (decimal notation)	No	
			origin	Reference object	frame background image	No	
			text-align	Text horizontal alignment	left center right	No	
			text-valign	Text vertical alignment	top center bottom	No	
			line-align	Line horizontal alignment	left center right	No	
			line-space	Line spacing (format-ver=01.01 and later)	SceInt32 (decimal notation)	No	
			line-break	Hyphenation	off on	No	
			word-wrap	Word wrapping	off on	No	
			ellipsis	Ellipsis	off on	No	
			word-scroll	Character scrolling	off on	No	
			pre-br	Linefeed code reflection	off on	No	
			margin-top	Text top margin	SceInt32 (decimal notation)	No	
			margin-bottom	Text bottom margin	SceInt32 (decimal notation)	No	
			margin-left	Text left margin	SceInt32 (decimal notation)	No	
			margin-right	Text right margin	SceInt32 (decimal notation)	No	
		<str>				No	Yes
			color	Font color	ex:#808080	No	
			size	Font size	float	No	
			bold	bold	off on	No	
			oblique	Italic	off on	No	

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Lv3 Tag	Lv4 Tag	Lv5 Tag	Attribute	Description	Value	Required	Multiple
			underline	Underline	off on	No	
			shadow	Shadow	off on	No	
			emboss	Emboss	off on	No	

### LiveArea™ Image Data

- PNG is the only image format that is supported in the current version. Indexing (color reduced) is recommended. Interlaced format PNG is not supported.
- Support of PVRTC and DXT image formats, which are native compression formats, is planned in future versions.
- The image size must be within 1 MiB as the combined size for all live items and background images. In this case, the image size is not the file size, but the size following loading into memory. PlayStation®Vita can natively handle indexed images. Image indexing allows size reduction, and size reduction can be achieved also through the use of PVRTC or DXT. In some cases, the image cannot be loaded due to memory fragmentation even if the total size of the image is within 1 MiB at update of differences. In such a case, an indexed image is also useful to reduce the file size, and as a result, it is possible to make memory fragmentation unlikely to occur.
- An image will not display if it exceeds the limit size.
- The limitation on image size applies to one screen, and images that are not simultaneously displayed (when multiple images are specified for one frame) are not included in the size restriction.
- The size of an image file must be within 420 KiB.

## 6 XML Specifications for LiveArea™ Update

When updating LiveArea™ using APIs provided for update of all LiveArea™ by libLiveArea, or via network through the LiveArea™ server, make sure to prepare the resource files according to the methods described below.

### File Configuration

The file configuration for packages used to update LiveArea™ is the same configuration as the LiveArea™ configuration for the main game. Refer to the "File Configuration" section of Chapter 3 "Content Information Zone" for creation. Include the XML for update (template.xml) and the image files referred to by the XML.

In addition, compatibility with upgradable applications is also possible. For details, refer to the "Upgradable Applications" section in the "Games" chapter of the "Application Development Process Overview" document.

For the methods to create specific packages used to update LiveArea™, refer to the "Package Generator User's Guide" document.

### How to Describe XML for Update

LiveArea™ update is performed in the form of differential update. When only frame1 needs to be updated, it is enough to solely describe frame1. Update only for gate or livearea-background is also possible.

Description example: with frame1, 2, 3 present, frame2 is deleted and frame4 is added through an update

```
<livearea style='a3' format-ver='01.03' content-rev='1'>
  <frame id='frame1'>
    <liveitem><!-- contents of the frame to be updated --></liveitem>
  </frame>
  <frame id='frame2'>
    <!-- update with an empty frame - meaning that frame2 disappears -->
  </frame>
  <!-- frame3 remains as before -->
  <frame id='frame4' multi='o' autoflip='0' >
    <liveitem><!-- contents of the frame to be added --></liveitem>
  </frame>
</livearea>
```

#### Note

The same result as above can be obtained without using update XML by controlling the display period with the from/until attribute in the original frame's liveitem.

#### Description example: switching display period with the from/until attribute

```
<frame id='frame1' autoflip='0'>
  <liveitem from='2012-03-01T00:00:00'> ... </liveitem>
  <liveitem until='2012-03-01T00:00:00'> ... </liveitem>
</frame>
<frame id='frame2'>
  <liveitem until='2012-03-01T00:00:00'> ... </liveitem>
</frame>
<frame id='frame4'>
  <liveitem from='2012-03-01T00:00:00'> ... </liveitem>
</frame>
```

## Debugging Feature

A debugging feature used for LiveArea™ network update is provided in the development environment. With this debugging feature, by placing a file in a specific location under host0: or ux0: and then tapping the update button of LiveArea™ (🔄), the update processing will be started up, referencing the file under host0: or ux0: instead of the server. This feature can only be used when the **Release Check Mode** of the Development Kit is **Development Mode**.

### Where to Locate the LiveArea™ Update File for Debugging

Place the file under either of the following directories to reference the file instead of the server (listed in the order to be referenced).

- host0:livearea\_update/contents
- ux0:data/livearea\_update/contents

### Examples of update file placement

- host0:livearea\_update/contents/template.xml
- host0:livearea\_update/contents/xxx.png (a file to be referenced from template.xml)
- host0:livearea\_update/contents/yyy.png (a file to be referenced from template.xml)

## 7 Precautions

### Conflict Between frames When Updating LiveArea™

The system does not manage the versions of differential update, and the latest update is only valid. When displaying the stage clear or game clear information in frame1 from an application, if a description of frame1 exists in the XML file to be placed on the server, the frame1 updated from an application will be overwritten through network update. In such a case, therefore, it is recommended to place the frame to be updated from an application in a different location from the frame to be updated through network update.

### Upgradable Contents

For upgradable contents, two kinds of LiveArea™, Trail and Full, are provided. Switches between Trail and Full occur according to the following conditions.

- When license is purchased in the Trial state, LiveArea™ is switched to the Full state. The contents of updates carried out before switching will be discarded.
- When **Upgradable App Debug** is changed from **★Debug Settings** of the setting application.
  - If it is changed from **Trial** to **Full**, LiveArea™ is switched to the Full state.
  - When the state is changed from **Trial** to **Off**, LiveArea™ is not switched with the original state maintained.
  - If it is changed from **Full** to **Trial**, LiveArea™ is switched to the Trial state.
  - If it is changed from **Full** to **Off**, LiveArea™ is switched to the Trial state.

### Precautions for the Simultaneous Update of LiveArea™ from libLiveArea and Store Checkout Dialog library

If upgrading to the full version by using the Store Checkout Dialog library, LiveArea™ will be upgraded to its full version during upgrade processing; however, the timing in which this occurs is unknown to the game.

For this reason, if LiveArea™ is updated with libLiveArea during upgrade processing, the game will not understand the order in which updates of LiveArea™ have been applied, causing status of LiveArea™ after the update to become undefined.

In order to solve this problem, avoid performing upgrade processing to the full version and update processing of LiveArea™ with libLiveArea simultaneously on the game side.

For the Store Checkout Dialog library, refer to the "Store Checkout Dialog Overview" document. For libLiveArea, refer to the "libLiveArea Overview" document.

### Resuming an Application With a psla Scheme's URI

In addition to starting an application, a psla scheme's URI can be executing as a resume of an application. When a psla scheme's URI is tapped, an application event with `SCE_APPUTIL_APPEVENT_TYPE_LIVEAREA` for the event notification type will occur, so process it appropriately. For methods for obtaining the application event, refer to the "Application Utility Overview" and "Application Utility Reference" documents.

## Conditions by Which LiveArea™ Returns to the State at the Time of Installation

LiveArea™ of an application returns to the state right after installation under any of the following conditions (including some user operations)

- When the user changes the system language (the selected language is reflected)
- When the user removes or inserts the memory card (only for the application installed as a package)
- When the user restores PlayStation®Vita
- When the user rebuilds the database in the safe mode
- When the user switches accounts (Development Kits/Testing Kits only)
- When the data cache for LiveArea™ on the internal flash memory overflows (system software 3.100 or later)

### Note

Installed LiveArea™ is cached to the system's internal flash memory. This cache enables the display of LiveArea™ even when a PlayStation®Vita card or memory card is not inserted; moreover, it is used to accelerate LiveArea™ display as well as for updates from the application or network.

However, because there is a size limit to the cache, in an environment of system software 3.100 or later where many applications are installed, LiveArea™ data will be deleted in order from the least recently accessed data. LiveArea™ that has been deleted from the cache will return to the state immediately after installation when it is next opened.

## XML's Special Symbols

The following characters cannot be described directly because of the XML specifications. It is possible to display these characters by describing codes called entity reference.

Special Symbols	Entity Reference
<	&lt;
>	&gt;
&	&amp;
"	&quot;
'	&apos;