FSDL 3.0 Recap – Elements and Attributes

This document provides a brief presentation of the elements and attributes defined in the Frogans Slide Description Language 3.0. The elements and attributes described here are still subject to minor changes.

Location

This document is accessible at the following permanent URL:
https://www.frogans.org/en/resources/fsdl/access.html

Copyright Statement

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Terminology

- **Frogans site**
  - A set of Frogans pages, called "slides", hyperlinked to each other, available online on the Internet or in an intranet, at a Frogans address.
  - A Frogans site can be published by any individual or organization, from anywhere in the world, in any language.
  - A Frogans site can contain an unlimited number of Frogans slides, which can be either static or generated dynamically (i.e. on the fly) by the server hosting the Frogans site.
- **Frogans address**
  - The Frogans technology introduces a new software layer on the Internet alongside existing layers such as E-mail or the Web.
  - Thus new Internet identifiers are required, just like the Web has URLs, and E-mail has specific addresses using the @ character.
  - A Frogans address is a string of characters serving as the identifier of a Frogans site. Frogans addresses feature an original, easy-to-identify address pattern with two main levels separated by the **asterisk** character: **network-name*site-name**. Frogans addresses may contain international characters and may be written either from left to right or from right to left, depending on the writing system.
  - Frogans addresses are registered with the Frogans Core Registry (FCR) and are resolved by the FCR Operator using the Frogans Network System (FNS). The address resolution process returns administrative as well as technical information about the Frogans site, including its location on the network.
  - Frogans addresses are grouped by their network name in Frogans networks.
- **Frogans Player**
  - Frogans Player is a free-of-charge, easy-to-use, secure, and fast-loading software that is used to browse Frogans sites.
  - Frogans Player is developed and updated by the OP3FT, a non-profit organization, for as many devices as possible that are connected to the Internet, such as desktop and laptops, tablets, and smartphones.
  - Frogans Player is available for download free of charge at **https://get.frogans/**. The OP3FT collects no personal data when end users download or use Frogans Player.
  - Currently the only version of Frogans Player is intended for developers and it is available for Windows, Mac OS X, and Linux only.

Key concepts

Frogans slide layout

- The **Frogans slide rendering canvas** is used to position the layers defined in a Frogans slide.
  - The size of the Frogans slide rendering canvas is 640 x 480 visible pixels.
  - Each pixel is represented using 32 bits: 8 bits each for the R, G, and B color components, plus 8 bits for transparency.
  - The visible pixels in the Frogans slide rendering canvas are referenced using an x,y coordinate system, where 0,0 refers to the pixel at the top-left corner and 639,479 refers to the pixel at the bottom-right corner.
  - Parts of resources used in layers can be positioned outside the Frogans slide rendering canvas.
- Each Frogans slide has two representations:
  - **Lead representation**: displayed when the end user resizes the Frogans slide to between 100% and 50% (inclusive) of its nominal size.
  - **Vignette representation**: displayed when the end user resizes the Frogans slide to between 50% and 25% of its nominal size.
- Both representations are made up of superimposed layers, each one being added on top of the others defined previously in the FSDL document. It is possible to select the representation(s) in which the layer appears (see the "leapout" attribute of the <layer> element in the FSDL document).
- Scaling factor
  - Frogans slides are rendered using the resolution of the Frogans slide rendering canvas. But different end-user devices can offer very different screen sizes with various pixel densities. Therefore Frogans Player automatically adapts the display of Frogans slides after rendering, by scaling both the width and height of the Frogans slides from 50% to 200%, depending on the device and the end user's preferences. Developers can disable the application of the scaling factor to facilitate the development of Frogans slides.

Frogans site root directory

- The Frogans site root directory contains all the FSDL documents and auxiliary files for all the Frogans slides in a given Frogans site.
- Each Frogans slide is made up of an **FSDL document** and its **auxiliary files** which, in FSDL 3.0, are image files.
- The Frogans site root directory can be located:
  - on a server accessible over the public Internet
  - for test purposes, on a local drive (see test Frogans addresses)
  - on a server accessible over an Intranet (corresponding Frogans addresses not yet available)
- The location of the Frogans site root directory is defined via a UCSR path in the settings of the Frogans address.
- All the FSDL documents located in the Frogans site root directory use the same version of the FSDL specification and the same character encoding method, which are defined in the settings of the Frogans address.
- The Frogans site root directory contains exactly one home slide, which is always rendered when the Frogans site is opened. The name of the home slide file is defined in the settings of the Frogans address.
- Since all the contents of given Frogans slide are located in the Frogans site root directory, any content aggregation from various sources must be carried out on the server hosting the Frogans site (the aggregation cannot be carried out on the end-user side, as can be done for Web pages), under the control and the responsibility of the Frogans site publisher. This includes advertising, images, etc.
- A Frogans site can include static slides, as well as dynamic slides which are generated on the fly by the server. For information on when and how data is sent by Frogans Player to the server hosting the Frogans site, see FSDL-Request documents.
- The file names of the FSDL documents and auxiliary files located in the Frogans site root directory are all relative to the Frogans site root directory. For the syntax of file names, see the "name" attribute of the <file> element in the FSDL document.
- The Frogans site root directory can contain subdirectories.

Going online via Frogans addresses

- Going online using a **Frogans address of a public Frogans network**
  - Pattern of a Frogans address of a public Frogans network: **network-name*site-name** where:
    - 'network-name' is either:
      - **"frogans"**, the network name of the public Frogans network, which is used for the languages of the Latin writing system, corresponding to the LC-Latin linguistic category, or
      - the **transcription** of the Frogans name into other writing systems or other languages, corresponding to the other available linguistic categories.
    - 'site-name' is compliant with the IFAP specification version 1.1 (https://www.frogans.org/en/resources/ifap/access.html). As a result of section 4.4. concerning connector characters:
      - '-' cannot be the first nor the last character of 'site-name'
      - Two or more consecutive '-' cannot be included in 'site-name'
  - The Frogans addresses of a public Frogans network are registered with the **Frogans Core Registry (FCR)** and are resolved using the **Frogans Network System (FNS)**.
  - The settings of each Frogans address are defined by the Frogans site publisher and are stored in the FCR. They include, among other things:
    - the intended audience of the Frogans site, in terms of age and location.
    - whether indexing is authorized for the Frogans site.
    - the location of the Frogans site root directory, provided as a UCSR path. Example (corresponding to frogans*HelloWorld):

```
<ucsr-path network='IP_DNS_TCP_HTTP'>
      <location>public</location>
      <domain-name>p7526.test.lab.op3ft.org</domain-name>
      <port>80</port>
     <directory>/public/op3ft/demo/helloworld-live</directory>
</ucsr-path>
```

    - the FSDL specification version of all the FSDL documents of the Frogans site.
    - the character encoding method used for all the FSDL documents of the Frogans site.
    - the file name of the home slide file in the Frogans site root directory. The syntax for name is the same as for the "name" attribute of the <file> element.

- Going online using a **test Frogans address**
  - Pattern of a test Frogans address: network-name*site-name where:
    - 'network-name' is '**test**'
    - 'site-name' can contain up to 28 ASCII characters in the range from 'a' to 'z', from '0' to '9' (inclusive), and the '-' character (no spaces allowed)
    - 'site-name' is compliant with the IFAP specification version 1.1 (https://www.frogans.org/en/resources/ifap/access.html). As a result of section 4.4. concerning connector characters:
      - '-' cannot be the first nor the last character of 'site-name'
      - Two or more consecutive '-' cannot be included in 'site-name'
  - Test Frogans addresses are not registered in the FCR, and are not resolved using the Frogans Network System (FNS). They are stored locally in the **configuration-for-testing.xml** file located in the Frogans Player directory. They are used free of charge.
  - For more information on how to configure test Frogans addresses, see the guidelines in the detailed comments provided in this configuration file.

Rules for protecting the interests of end users

These rules are introduced so that:

- Frogans sites can be used on all end-user devices, from desktops to mobile phones, including devices with limited memory and processing capabilities.
- Frogans sites are easy to use and navigate for end users

Network usage rules

In order to limit the impact of Frogans sites on the end user's data plans, and to avoid slow navigation due to a low-speed network connection, the following limits are defined:

- Maximum size of an FSDL document: 64 KB
- Maximum size of an FSDL document and all its auxiliary files: 256 KB

Memory usage rules

In order to limit the amount of memory required to render Frogans slides on end-user devices, and to increase the maximum number of applications or Frogans sites opened at the same time, the following limits are defined:

- Maximum width and height of a pre-authored image (in an image file): 1024x1024 pixels
- Maximum number of pixels in all the pre-authored images of a given Frogans slide: 3,072,000 pixels (=10*640*480).
- Total amount of memory required to render all the prepared resources, all the parts of all merge resources, and all the layers not used to assemble buttons in a given Frogans slide: 18,432,000 bytes (=15*4*640*480)
- Total amount of memory required to render all the layers used to assemble buttons in a given Frogans slide: 6,144,000 bytes (=5*4*640*480)

Usability rules

In order to ensure that end users can easily see and interact with Frogans slides, the following rules are defined.

Notes:

- These usability rules are applied after the Frogans slide has been rendered and before it is displayed on the end-user device.
- The values defined in these rules are designed to handle the worst-case situation for end users, i.e. when they resize the Frogans slide (lead representation in Medium size and vignette representation in Small size) while Frogans Player is using the XXS scaling factor.
- In these rules, "sufficiently opaque pixels" refers to pixels, in a rendered Frogans slide, for which the value of the Alpha component is greater than or equal to 0x40 (64 decimal).

- **To make the Frogans slide easy to see:**

  Minimum number of sufficiently opaque pixels in the lead representation: 76,800 pixels (= 25% of 640*480)

  Minimum number of sufficiently opaque pixels in the vignette representation: 76,800 pixels (= 25% of 640*480)

- **To make the selection effect of a button easy to see:**

  In the lead representation with a size of 640*480: for each button, the selection effect score must be greater than or equal to 2,964 (the selection effect score of a button reflects the ability for an end user to see that the button is selected).

- **To make it easy to move the Frogans slide when using a pointing device:**

  In the lead representation: a 40x40 square of sufficiently opaque pixels must be available for moving the Frogans slide (in the part of the Frogans slide that is always accessible during any selection effect).

  In the vignette representation: an 80x80 square of sufficiently opaque pixels must be available for moving the Frogans slide.

- **To make it easy to select a button when using a pointing device:**

  In the lead representation: for each button, when the button is not

selected, a 20x20 square of sufficiently opaque pixels must be available for selecting the button.

Tip for advanced FSDL authors: In order to achieve compliance with the usability rules concerning devices with a pointing device, it is possible to artificially increase or decrease the reactivity of a layer by adjusting the value of the "reactivity" attribute of the corresponding <layer> element.

FSDL documents

FSDL documents are based on the Extensible Markup Language (XML) 1.0 Fifth Edition.

File encoding

FSDL documents are encoded using the character encoding method defined for the FSDL documents of the Frogans site (either UTF-8 or UTF-16) via its Frogans address. A Byte Order Mark (BOM) can be included at the start of the file.

When UTF-16 is used:

- if a BOM is included: both little-endian serialization (UTF-16LE) and big-endian serialization (UTF-16BE) are supported
- if no BOM is included: UTF-16LE is applied.

Depending on the encoding method used, the FSDL document starts with one of the following declarations (on the first line of the FSDL document):

- <?xml version='1.0' encoding='utf-8' ?>
- <?xml version='1.0' encoding='utf-16' ?>

File size limitations

See the Network usage rules.

Unique identifiers

A unique identifier is a case-sensitive string containing between 1 and 24 characters (inclusive).

Each character in the string is in the range from 'A' to 'Z' (inclusive), in the range from 'a' to 'z' (inclusive), in the range from '0' to '9' (inclusive), or is the '_' character. As a result, the string does not contain the ' ' (space) character.

Legend

The remainder of this section presents FSDL elements and attributes, using the following typographical convention:

<element>

Description of the element, if necessary

"*attribute*" *(mandatory | optional | applicable if <condition>)*

Description of the attribute, if necessary

- 'value' | description of a value (comment on the value, if necessary)

<frogans-fsdl>

The root element of the FSDL document.

Can contain a combined total of up to 128 of the following elements: <resimage>, <respixels>, <resdraw>, <respath>, <restext>, <resmerge>.

Can contain from 0 to 32 of each of the following elements: <setfont>, <setfilter>, <setrelief>, <setshadow>.

Can contain from 0 to 128 <layer> elements (including <layer> elements contained in <button> elements).

Can contain from 0 to 64 <file> elements.

Can contain from 0 to 32 <button> elements.

Can contain either 0 or 1 <next> elements.

Can contain from 0 to 32 <setdata> elements.

Can contain either 0 or 1 <session> element.

Can contain from 0 to 16 <entry> elements.

Can contain exactly one <redirect> element.

Note: If the FSDL document contains a <redirect> element, then the Frogans slide is a **Frogans redirection slide** which is not rendered by Frogans Player. In that case, the <frogans-fsdl> element can only contain <file>, <setdata> and <session> elements.

"*version*" *(mandatory)*

- '3.0'

<file>

A file (an FSDL document or an image file) in the Frogans site root directory.

The content can optionally be the image file encoded in Base64 (if the value of the "nature" attribute equals 'embedded').

"*fileid*" *(mandatory)*

- unique identifier

"*nature*" *(mandatory)*

- 'static'
- 'dynamic'
- 'embedded'

"*name*" *(applicable if "nature"='static' or 'dynamic'; mandatory in that case)*

- complete name of the file in the Frogans site root directory

The file name is a UCSR target name, but where the number of characters is limited to 128.

As a result:

- The string contains at least 2 characters. Each of the characters is either in the range from 'a' to 'z' (inclusive), in the range from '0' to '9' (inclusive), or is any of the following characters: the '_' character, the '-' character, the '.' character, or the '/' character.
- The string starts with the '/' character.
- The string cannot end with any of the following characters: '_' character, '-' character, '.' character, '/' character.
- The string cannot contain any of the following sequences: two successive '.' characters, a '.' character followed by a '/' character, a '/' character followed by a '.' character, or two successive '/' characters.
- The string cannot contain the ' ' (space) character or the '\' character.

"*cache*" *(applicable if "nature"='static'; optional in that case)*

- 'on'
- 'off' (default value)

"*dataref*" *(applicable if "nature"='dynamic'; optional in that case)*

- "dataid" of a previously defined <setdata>; default value: '' (the empty string)

<resimage>

Defines a resource based on a jpeg, png, or gif image file. Maximum dimensions of the pre-authored image (in pixels): 1,024 x 1,024.

"*resid*" *(mandatory)*

- unique identifier

"*size*" *(mandatory)*

- width,height width from 1 to 640, height from 1 to 480

"*fileref*" *(mandatory)*

- "fileid" of a previously defined <file>

"*selection*" *(optional)*

- 'entire' (default value)
- 'extract'

"*bounds*" *(applicable if "selection"='extract'; mandatory in that case)*

- left,top,right,bottom
  left,top from 0 to 1023, right,bottom from 1 to 1024

"*aspect*" *(optional)*

- 'base' (default value)
- 'spread'
- 'zoom'
- 'echo'
- 'tile'

"*adjust*" *(applicable if "aspect"='base', 'zoom' or 'echo'; optional in that case)*

- integer from -100 to 100; default value: '0'

"*origin*" *(applicable if "aspect"='tile'; optional in that case)*

- x,y x from 0 to 1023, y from 0 to 1023; default value: '0,0'

<respixels>

The content is a list of (columns*rows) semi-colon-separated values in the following patterns (depending on the value of the "pix" attribute):

- if "pix"='rgba': #rrggbbaa '#' followed by 4 pairs of hexadecimal digits
- if "pix"='rgb': #rrggbb '#' followed by 3 pairs of hexadecimal digits
- if "pix"='a': #aa '#' followed by 1 pair of hexadecimal digits
- if "pix"='y': #yy '#' followed by 1 pair of hexadecimal digits
- if "pix"='ya': #yyaa '#' followed by 2 pairs of hexadecimal digits

"*resid*" *(mandatory)*

- unique identifier

"*size*" *(mandatory)*

- width,height width from 1 to 640, height from 1 to 480

"*columns*" *(mandatory)*

- integer from 1 to 16

"*rows*" *(mandatory)*

- integer from 1 to 16

"*pix*" *(mandatory)*

- 'rgba'
- 'rgb'
- 'a'
- 'y'
- 'ya'

"*color*" *(applicable if "pix"='a': optional in that case)*

- #rrggbb '#' followed by 3 pairs of hexadecimal digits;
  default value: '#0000ff'

"*alpha*" *(applicable if "pix"='rgb' or 'y'; optional in that case)*

- #aa '#' followed by 1 pair of hexadecimal digits;
  default value: '#ff'

<resdraw>

"*resid*" *(mandatory)*

- unique identifier

"*size*" *(mandatory)*

- width,height width from 1 to 640, height from 1 to 480

"*figure*" *(mandatory)*

- 'rect'
- 'roundrect'
- 'ellipse'

"*stroke*" *(mandatory)*

- 'on'
- 'off'

"*thick*" *(applicable if "stroke"='on'; optional in that case)*

- integer from 1 to 64; default value: '8'

"*round*" *(applicable if "figure"='roundrect'; optional in that case)*

- width,height width from 1 to 640, height from 1 to 480;
  default value: '16,16'

"*color*" *(optional)*

- #rrggbb '#' followed by 3 pairs of hexadecimal digits;
  default value: '#0000ff'

<respath>

The content is a list of between 2 and 512 semi-colon-separated items in any of the following patterns, where each x,y coordinate is between 0 and 2048:

- Ju:xp,yp jump item, which corresponds to the starting point of a simple or composite Bezier curve, where xp,yp are the coordinates of the starting point. This item is the first item in the list; it cannot be the last item in the list; and there cannot be two consecutive jump items in the list.
- Li:xp,yp linear item, which corresponds to the ending point of a linear Bezier curve, where xp,yp are the coordinates of the ending point.
- Co:xp,yp,x1,y1 conic item, which corresponds to the ending point of a conic Bezier curve, where xp,yp are the coordinates of the ending point and x1,y1 are the coordinates of the control point.
- Cu:xp,yp,x1,y1,x2,y2 cubic item, which corresponds to the ending point of a cubic Bezier curve, where xp,yp are the coordinates of the ending point, and x1,y1 and x2,y2 are the coordinates of the first and second control points, respectively.

"*resid*" *(mandatory)*

- unique identifier

"*size*" *(mandatory)*

- width,height width from 1 to 640, height from 1 to 480

"*crop*" *(mandatory)*

- 'none'
- 'auto'
- 'custom'

"*corners*" *(applicable if "crop"='custom'; mandatory in that case)*

- xtl,ytl,xbr,ybr
  xtl,ytl from 0 to 2047, xbr,ybr from 1 to 2048

"*stroke*" *(mandatory)*

- 'on'
- 'off'

"*thick*" *(applicable if "stroke"='on'; optional in that case)*

- integer from 1 to 64; default value: '8'

"*close*" *(applicable if "stroke"='on'; optional in that case)*

- 'on'
- 'off' (default value)

"*fill*" *(applicable if "stroke"='off'; optional in that case)*

- 'non-zero' (default value)
- 'even-odd'

"*spread*" *(mandatory)*

- 'on'
- 'off'

"*adjust*" *(applicable if "spread"='off'; optional in that case)*

- integer from -100 to 100; default value: '0'

"*color*" *(optional)*

- #rrggbb '#' followed by 3 pairs of hexadecimal digits; default value: '#0000ff'

<setfont> and <font>

<setfont>

Can contain from 1 to 16 <font> elements.

The value of the "scripts" attribute of the first <font> element equals 'default'.

In any given <setfont> element, each script included in the comma-separated list in the value of the "scripts" attribute of all <font> elements is unique among all those <font> elements.

"*fontid*" *(mandatory)*

- unique identifier

<font>

"*scripts*" *(mandatory)*

- either 'default' or a comma-separated list of between 1 and 16 unique script names. For a list of available script names, see Appendix 1: "scripts" attribute of the <font> element.

"*pfont*" *(mandatory)*

- name of the physical font. For a list of all available physical fonts, see Appendix 2: "pfont" attribute of the <font> element.

"*height*" *(mandatory)*

- numeric with one optional digit after the decimal point, from 8.0 to 72.0

"*spacing*" *(optional)*

- integer from -100 to 100; default value: '0'

"*stretching*" *(optional)*

- integer from -100 to 100; default value: '0'

"*xbold*" *(optional)*

- integer from 0 to 100; default value: '0'

"*xitalic*" *(optional)*

- integer from -100 to 100; default value: '0'

"***underline***" *(optional)*

- 'on'
- 'off' (default value)

"***strikeout***" *(optional)*

- 'on'
- 'off' (default value)

"***opacity***" *(optional)*

- integer from 0 to 100; default value: '100'

"***color***" *(optional)*

- #rrggbb '#' followed by 3 pairs of hexadecimal digits; default value: '#0000ff'

<restext> and <text>

<restext>

Can contain from 1 to 16 <text> elements.

"*resid*" *(mandatory)*

- unique identifier

"*size*" *(mandatory)*

- width,height width from 1 to 640, height from 1 to 480

"*orientation*" *(mandatory)*

- 'h-ttb-ltr'
- 'h-ttb-rtl'
- 'h-btt-ltr'
- 'h-btt-rtl'
- 'v-ltr-ttb'
- 'v-ltr-btt'
- 'v-rtl-ttb'
- 'v-rtl-btt'

"*fontref*" *(mandatory)*

- "fontid" of a previously defined <setfont>

"*talign*" *(optional)*

- 'begin' (default value)
- 'end'
- 'center'
- 'justify'

"*linespace*" *(optional)*

- integer from -100 to 100; default value: '0'

"*vstyle*" *(applicable if "orientation" starts with 'v-'; optional in that case)*

- 'natural' (default value)
- 'opposite'
- 'upright'

"*join*" *(optional)*

- 'none' (default value)
- 'space'
- 'nospace'

<text>

The content is a string of up to 768 Unicode characters representing the text.

"*fontref*" *(optional)*

- "fontid" of a previously defined <setfont>

default value: the "fontref" attribute value of the parent

"*talign*" *(optional)*

- 'begin'
- 'end'
- 'center'
- 'justify'

default value: the "talign" attribute value of the parent

"*linespace*" *(optional)*

integer from -100 to 100; default value: the "linespace" attribute value of the parent

"*vstyle*" *(applicable if the "orientation" attribute value of the parent starts with 'v-'; optional in that case)*

- 'natural'
- 'opposite'
- 'upright'

default value: the "vstyle" attribute value of the parent

"*join*" *(optional)*

- 'none'
- 'space'
- 'nospace'

default value: the "join" attribute value of the parent

<setfilter> and <filter>

<setfilter>

Can contain from 1 to 8 <filter> elements.

"*filterid*" *(mandatory)*

- unique identifier

<filter>

"*effect*" *(mandatory)*

- 'light'
- 'contrast'
- 'saturation'
- 'hue'
- 'solarize'
- 'addcolor'
- 'mixcolor'
- 'negative'
- 'lumakey'
- 'chromakey'
- 'lumatoalpha'
- 'alphatoluma'

"*level*" *(applicable if "effect"='light', 'contrast', 'saturation', 'solarize', 'addcolor', or 'mixcolor'; mandatory in that case)*

- integer from -100 to 100; if "effect"='solarize' or 'mixcolor', then the filter is active only for values greater than zero

"*angle*" *(applicable if "effect"='hue'; mandatory in that case)*

- integer from -180 to 180

"*tolerance*" *(applicable if "effect"='lumakey' or 'chromakey'; mandatory in that case)*

- integer from 0 to 100

"*color*" *(applicable if "effect"='addcolor', 'mixcolor', 'lumakey', or 'chromakey'; mandatory in that case)*

- #rrggbb '#' followed by 3 pairs of hexadecimal digits; default value: '#0000ff'

<setrelief> and <relief>

<setrelief>

Can contain from 1 to 4 <relief> elements.

"*reliefid*" *(mandatory)*

- unique identifier

<relief>

"*rpos*" *(mandatory)*

- x,y x from -64 to 64, y from -64 to 64

"*color*" *(optional)*

- #rrggbb '#' followed by 3 pairs of hexadecimal digits; default value: '#ffffff'

"*blur*" *(optional)*

- xradius,yradius xradius from 0 to 32, yradius from 0 to 32; default value: '0,0'

"*opacity*" *(optional)*

- integer from 0 to 100; default value: '100'

<setshadow> and <shadow>

<setshadow>

Can contain from 1 to 4 <shadow> elements.

"*shadowid*" *(mandatory)*

- unique identifier

<shadow>

"*rpos*" *(mandatory)*

- x,y x from -64 to 64, y from -64 to 64

"*color*" *(optional)*

- #rrggbb '#' followed by 3 pairs of hexadecimal digits; default value: '#000000'

"*blur*" *(optional)*

- xradius,yradius xradius from 0 to 32, yradius from 0 to 32; default value: '0,0'

"*opacity*" *(optional)*

- integer from 0 to 100; default value: '100'

<resmerge> and <merge>

<resmerge>

Can contain from 1 to 16 <merge> elements.

"*resid*" *(mandatory)*

- unique identifier

"*size*" *(mandatory)*

- width,height width from 1 to 640, height from 1 to 480

<merge>

"*resref*" *(mandatory)*

- "resid" of the prepared resource. Cannot refer to the parent <resmerge> element.

"*align*" *(optional)*

- 'left-top'
- 'left-middle'
- 'left-bottom'
- 'center-top'
- 'center-middle' (default value)
- 'center-bottom'
- 'right-top'
- 'right-middle'
- 'right-bottom'

"*pos*" *(mandatory)*

- x,y x from -640 to 1280, y from -480 to 960

"*flip*" *(optional)*

- 'none' (default value)
- 'xdir'
- 'ydir'
- 'xydir'

"*filterref*" *(optional)*

- "filterid" of a previously defined <setfilter>; default value: '' (the empty string)

"*reliefref*" *(optional)*

- "reliefid" of a previously defined <setrelief>; default value: '' (the empty string)

"*blur*" *(optional)*

- xradius,yradius xradius from 0 to 32, yradius from 0 to 32; default value: '0,0'

"*angle*" *(optional)*

- integer from -180 to 180; default value: '0'

"*sharpness*" *(optional)*

- integer from 0 to 8; default value: '0'

"*opacity*" *(optional)*

- integer from 0 to 100; default value: '100'

"*combine*" *(mandatory)*

- 'add'
- 'clip'
- 'cutout'
- 'inter'

"*shadowref*" *(optional)*

- "shadowid" of a previously defined <setshadow>; default value: '' (the empty string)

<layer>

The <layer> element is a child of the <frogans-fsdl> or of a <button> element.

"*layerid*" *(mandatory)*

- unique identifier

"*leapout*" *(mandatory)*

- 'all'
- 'lead' *(only possible value if child of <button>)*
- 'vignette'

"*resref*" *(mandatory)*

- "resid" of a previously prepared resource

"*align*" *(optional)*

- 'left-top'
- 'left-middle'
- 'left-bottom'
- 'center-top'
- 'center-middle' (default value)
- 'center-bottom'
- 'right-top'
- 'right-middle'
- 'right-bottom'

"*pos*" *(mandatory)*

- x,y x from -640 to 1280, y from -480 to 960

"*flip*" *(optional)*

- 'none' (default value)
- 'xdir'
- 'ydir'
- 'xydir'

"*filterref*" *(optional)*

- "filterid" of a previously defined <setfilter>; default value: '' (the empty string)

"*reliefref*" *(optional)*

- "reliefid" of a previously defined <setrelief>; default value: '' (the empty string)

"*blur*" *(optional)*

- xradius,yradius xradius from 0 to 32, yradius from 0 to 32; default value: '0,0'

"*angle*" *(optional)*

- integer from -180 to 180; default value: '0'

"*sharpness*" *(optional)*

- integer from 0 to 8; default value: '0'

"*opacity*" *(optional)*

- integer from 0 to 100; default value: '100'

"*combine*" *(mandatory)*

- 'add'
- 'clip' *(only possible value if child of <button> and if the value of the "visible" attribute is not 'always')*
- 'cutout'
- 'inter'

"*shadowref*" *(optional)*

- "shadowid" of a previously defined <setshadow>; default value: '' (the empty string)

"*visible*" *(applicable if child of <button>; mandatory in that case)*

- 'always'
- 'not-selected'
- 'selected'

"*reactivity*" *(optional)*

- #rr '#' followed by 1 pair of hexadecimal digits; default value: '#7f'

<button>

Contains from 1 to 16 <layer> elements.

"*buttonid*" *(mandatory)*

- unique identifier

"*goto*" *(mandatory)*

- 'slide'
- 'frogans-site'
- 'way-out'

"*fileref*" *(applicable if "goto"='slide'; mandatory in that case)*

- "fileid" of a previously defined <file>

"*entryref*" *(applicable if "goto"='slide'; optional in that case)*

- "entryid" of a previously defined <entry>; default value: '' (the empty string)

"*address*" *(applicable if "goto"='frogans-site'; mandatory in that case)*

- Frogans address of another Frogans site (e.g. 'network-name*site-name')

"*uri*" *(applicable if "goto"='way-out'; mandatory in that case)*

- URI. The URI starts with one of the following scheme names: 'http', 'https', or 'mailto'.

<next>

Slide of the Frogans site to be loaded automatically after a defined period.

"***delay***" *(mandatory)*

- integer from 5 to 86400, in seconds

"***fileref***" *(mandatory)*

- "fileid" of a previously defined <file>

<entry>

"*entryid*" *(mandatory)*

- unique identifier

"*key*" *(mandatory)*

- Field key name identifying the entry.

The value is a field key name.

As a result:

> The value is a case-sensitive string containing between 1 and 24 characters (inclusive). Each character in the string is in the range from 'A' to 'Z' inclusive(inclusive), in the range from 'a' to 'z' inclusive(inclusive), in the range from '0' to '9' (inclusive), or is either the '_' character or the '-' character. The string cannot contain the ' ' (space) character.

"*input*" *(mandatory)*

- 'text'
- 'concealed-text'

"*max*" *(applicable if "input"='text' or "input"='concealed-text'; mandatory in that case)*

- integer from 1 to 256

"*preset*" *(applicable if "input"='text'; optional in that case)*

- Preset value of the entry; default value: '' (the empty string)

The value is a string of up to 256 Unicode characters representing the preset value for the entry. The number of Unicode characters in the string cannot exceed the value of the "max" attribute.

<setdata> and <data>

<setdata>

Can contain from 1 to 16 <data> elements.

"*dataid*" *(mandatory)*

- unique identifier

<data>

The content is a string containing between 1 and 256 Unicode characters (inclusive) representing the value of the data key.

"*key*" *(mandatory)*

- Field key name.

The value is a field key name.

As a result:

> The value is a case-sensitive string containing between 1 and 24 characters (inclusive). Each character in the string is in the range from 'A' to 'Z' (inclusive), in the range from 'a' to 'z' (inclusive), in the range from '0' to '9' (inclusive), or is either the '_' character or the '-' character. The string cannot contain the ' ' (space) character.

<session>

"*dataref*" *(mandatory)*

- "dataid" of a previously defined <setdata>

"*remember*" *(mandatory)*

- 'on'
- 'off'

<redirect>

Slide of the Frogans site to be loaded and rendered immediately.

Element to be used only if the FSDL document corresponds to a Frogans redirection slide (see the **<frogans-fsdl>** element).

Note: In order to avoid redirect loops, Frogans Player ensures that a Frogans redirection slide does not redirect to another Frogans redirection slide.

"*fileref*" *(mandatory)*

- "fileid" of a previously defined <file>

FSDL-Request documents

Note: FSDL-Request documents are not written by the author of the FSDL documents, but rather are generated automatically by Frogans Player and sent to the server hosting the Frogans site.

FSDL-Request documents are based on the Extensible Markup Language (XML) 1.0 Fifth Edition.

FSDL-Request documents are encoded using the character encoding method defined for the FSDL documents of the Frogans site (either UTF-8 or UTF-16) via its Frogans address. A Byte Order Mark (BOM) is always used at the start of the file. If UTF-16 is used, then little-endian serialization (UTF-16LE) is applied, regardless of the serialization used in the FSDL document (UTF-16LE or UTF-16BE).

The size of an FSDL-Request document cannot exceed 64KB.

FSDL-Request documents are organized as follows:

```
<?xml version='1.0' encoding='...'?>

<frogans-fsdl-request version='3.0'>

    <request wanted='...' navigation='...' kind='...'/>

    <session-fields>
        <field key='...'>...</field>
        ...
    </session-fields>

    <file-fields>
        <field key='...'>...</field>
        ...
    </file-fields>

    <entry-fields>
        <field key='...'>...</field>
    </entry-fields>

</frogans-fsdl-request>
```

FSDL-Request documents are sent in order to fetch an FSDL document or an auxiliary file only if the "nature" attribute of the corresponding <file> element equals 'dynamic'.

If an FSDL-Request document is to be sent to the server hosting the Frogans site, then Frogans Player uses the UCSR fetch mode "invoke" to send the FSDL-Request document (corresponding to the HTTP POST method when using the UCSR networks 'IP_DNS_TCP_HTTP' or 'IP_DNS_TCP_TLS_HTTP').

If no FSDL-Request document is to be sent to the server hosting the Frogans site, then Frogans Player uses the UCSR fetch mode "retrieve" (corresponding to the HTTP GET method when using the UCSR networks 'IP_DNS_TCP_HTTP' or 'IP_DNS_TCP_TLS_HTTP').

Five situations can trigger Frogans Player to generate an FSDL-Request document and send it to the server. The content of the FSDL-Request document changes accordingly.

1) The end user triggers a button leading to a Frogans slide of the Frogans site

- Conditions for generating the FSDL-Request document:
  - The value of the "goto" attribute of the <button> element in the FSDL document corresponding to the triggered button equals 'slide'
  - The <button> element refers to a <file> element where the "nature" attribute equals 'dynamic'.
- <request> element - An FSDL document is wanted:

```
<request wanted='fsdl-document' navigation='button'/>
```

- <session-fields> element:
  - If the FSDL document includes a <session> element, then there is a <field> element for each <data> child element of the <setdata> element referred to by the <session> element:

```
<session-fields>
   <field key='...'>...</field>
   ...
</session-fields>
```

    - Otherwise:

```
<session-fields/>
```

- <file-fields> element:
  - If the <file> element referred to by the <button> element refers to a <setdata> element, then there is a <field> element for each <data> child element of the <setdata> element:

```
<file-fields>
   <field key='...'>...</field>
   ...
</file-fields>
```

  - Otherwise:

```
<file-fields/>
```

- <entry-fields> element:
  - If the <button> element refers to an <entry> element, then there is a <field> element for the <entry> element:

```
<entry-fields>
    <field key='...'> //user input// </field>
</entry-fields>
```

  - Otherwise:

```
<entry-fields/>
```

2) The end user takes no action before the next Frogans slide begins to load

- Conditions for generating the FSDL-Request document:
  - The end user does not trigger a button on the Frogans slide, reload the Frogans slide, or close the Frogans site before the next Frogans slide begins to load (after the number of seconds defined by the "delay" attribute of the <next> element in the FSDL document), and
  - The <next> element in the FSDL document refers to a <file> element where the "nature" attribute equals 'dynamic'.
- <request> element - An FSDL document is wanted:

```
<request wanted='fsdl-document' navigation='next'/>
```

- <session-fields> element:
  - If the FSDL document includes a <session> element, then there is a <field> element for each <data> child element of the <setdata> element referred to by the <session> element:

```
<session-fields>
   <field key='...'>...</field>
   ...
</session-fields>
```

  - Otherwise:

```
<session-fields/>
```

- <file-fields> element:
  - If the <file> element referred to by the <next> element refers to a <setdata> element, then there is a <field> element for each <data> child element of the <setdata> element:

```
<file-fields>
   <field key='...'>...</field>
   ...
</file-fields>
```

  - Otherwise:

```
<file-fields/>
```

- <entry-fields> element:

```
<entry-fields/>
```

3) The FSDL document corresponds to a Frogans redirection slide

- Condition for generating the FSDL-Request document:
  - The <redirect> element included in the FSDL document refers to a <file> element where the "nature" attribute equals 'dynamic'.
- <request> element - An FSDL document is wanted:

```
<request wanted='fsdl-document' navigation='redirect'/>
```

- <session-fields> element:
  - If the FSDL document includes a <session> element, then there is a <field> element for each <data> child element of the <setdata> element referred to by the <session> element:

```
<session-fields>
   <field key='...'>...</field>
   ...
</session-fields>
```

  - Otherwise:

```
<session-fields/>
```

- <file-fields> element:
  - If the <file> element referred to by the <redirect> element refers to a <setdata> element, then there is a <field> element for each <data> child element of the <setdata> element:

```
<file-fields>
   <field key='...'>...</field>
   ...
</file-fields>
```

  - Otherwise:

```
<file-fields/>
```

- <entry-fields> element:

```
<entry-fields/>
```

4) An image file is required to render the Frogans slide

- Condition for generating the FSDL-Request document:
  - The <resimage> element refers to a <file> element where the "nature" attribute equals 'dynamic.
- <request> element - An auxiliary file is wanted:

```
<request wanted='auxiliary-file' kind='image'/>
```

- <session-fields> element:
  - If the FSDL document containing the <resimage> element includes a <session> element, then there is a <field> element for each <data> child element of the <setdata> element referred to by the <session> element:

```
<session-fields>
   <field key='...'>...</field>
   ...
</session-fields>
```

  - Otherwise:

```
<session-fields/>
```

- <file-fields> element:
  - If the <file> element referred to by the <resimage> element refers to a <setdata> element, then there is a <field> element for each <data> child element of the <setdata> element:

```
<file-fields>
   <field key='...'>...</field>
   ...
</file-fields>
```

  - Otherwise:

```
<file-fields/>
```

- <entry-fields> element:

```
<entry-fields/>
```

5) The end user opens a Frogans site

- Conditions for generating the FSDL-Request document:
  - The request is the first request made after the resolution of the Frogans address, and only if one the two following cases apply:
    - the Frogans address is of a Frogans network with individual sessions AND the Frogans address is listed in the end user's Favorites AND there is a session remembered for that Frogans address
    - the Frogans address is of a Frogans network with collective sessions AND at least one Frogans address of that Frogans network is listed in the end user's Favorites AND there is a session remembered for that Frogans network (i.e. for all Frogans addresses of that Frogans network)
- <request> element - An FSDL document is wanted:

```
<request wanted='fsdl-document' navigation='open'/>
```

- <session-fields> element:
  - There is a <field> element for each <data> child element of the <setdata> element referred to by the last <session> element that was saved for the Frogans site, or for another Frogans site in the same Frogans network:

```
<session-fields>
   <field key='...'>...</field>
   ...
</session-fields>
```

- <file-fields> element:

```
<file-fields/>
```

- <entry-fields> element:

```
<entry-fields/>
```

Appendix 1: "scripts" attribute of the <font> element

The first column of the following table provides the list of case-sensitive values that can be used for defining the "scripts" attribute of the <font> element.

Each value is either a generic script (e.g. 'Cyrillic') or a language-localized scripts (e.g. 'Cyrillic:Macedonian').

The second column provides a means for choosing a suitable physical font ("pfont" attribute). For each generic script or language-localized script in the first column, relevant physical fonts are listed with their corresponding coverage according to the **CLDR** exemplar characters. If the CLDR does not provide sufficient information for a given script, then the coverage corresponds to the Unicode characters that can be rendered for that script using the physical font.

Generic script or language-localized script	**Physical fonts and coverage (in %)**
Common	101-1-serif-r (36%), 102-1-serif-r (13%), 102-2-serif-b (39%), 102-3-serif-bi (39%), 102-4-serif-r (39%), 102-5-serif-i (39%), 103-1-sans-r (19%), 104-1-serif-b (33%), 104-2-serif-r (33%), 105-1-serif-r (84%), 105-2-serif-r (84%), 105-3-serif-r (84%), 105-4-serif-r (84%), 106-1-serif-r (59%), 107-1-serif-r (43%), 108-1-sans-r (35%), 109-1-mono-r (38%), 109-2-mono-b (38%), 110-1-mono-r (32%), 110-2-mono-b (32%), 111-1-sans-r (38%), 111-2-sans-b (38%), 112-1-mono-r (41%), 112-2-sans-r (45%), 112-3-sans-r (45%), 112-4-sans-r (39%), 112-5-serif-b (42%), 112-6-serif-bi (42%), 112-7-serif-i (42%), 112-8-serif-r (42%), 112-9-serif-r (42%), 112-10-serif-b (42%), 112-11-serif-bi (42%), 112-12-serif-i (42%), 112-13-mono-b (41%), 112-14-sans-b (45%), 113-1-serif-i (34%), 113-2-serif-r (36%), 114-1-sans-r (10%), 115-1-serif-r (32%), 116-1-serif-r (32%), 117-1-serif-r (32%), 118-1-serif-r (67%), 119-1-serif-r (42%), 120-1-serif-r (24%), 121-1-sans-r (23%), 121-2-sans-r (23%), 122-1-sans-b (3%), 122-2-sans-r (3%), 122-3-sans-b (12%), 122-4-sans-r (12%), 122-5-serif-r (15%), 122-6-sans-r (91%), 122-7-sans-r (91%), 122-8-sans-r (91%), 122-9-sans-r (91%), 122-10-sans-r (1%), 122-11-sans-b (22%), 122-12-sans-r (22%), 122-13-sans-b (22%), 122-14-sans-r (22%), 122-15-sans-b (24%), 122-16-sans-r (24%), 122-17-sans-b (22%), 122-18-sans-r (22%), 122-19-sans-b (22%), 122-20-sans-r (22%), 122-21-sans-b (22%), 122-22-sans-r (22%), 122-23-sans-b (1%), 122-24-sans-r (1%), 122-25-sans-b (18%), 122-26-sans-r (18%), 122-27-serif-b (1%), 122-28-serif-r (1%), 122-29-sans-b (91%), 122-30-sans-b (91%), 122-31-sans-b (91%), 122-32-sans-b (91%), 122-33-sans-b (32%), 123-1-sans-b (23%), 123-2-sans-r (23%), 124-1-sans-r (15%), 125-1-serif-b (60%), 125-2-serif-r (60%), 126-1-serif-r (24%), 127-1-sans-r (31%), 128-1-serif-b (43%), 128-2-serif-bi (43%), 128-3-serif-i (43%), 128-4-serif-r (43%)
Latin	101-1-serif-r (28%), 102-2-serif-b (60%), 102-3-serif-bi (60%), 102-4-serif-r (60%), 102-5-serif-i (60%), 103-1-sans-r (11%), 104-1-serif-b (34%), 104-2-serif-r (34%), 105-1-serif-r (91%), 105-2-serif-r (91%), 105-3-serif-r (91%), 105-4-serif-r (91%), 106-1-serif-r (99%), 107-1-serif-r (97%), 108-1-sans-r (56%), 109-1-mono-r (99%), 109-2-mono-b (99%), 110-1-mono-r (55%), 110-2-mono-b (55%), 111-1-sans-r (100%), 111-2-sans-b (100%), 112-1-mono-r (89%), 112-2-sans-r (100%), 112-3-sans-r (100%), 112-4-sans-r (99%), 112-5-serif-b (100%),

Generic script or language-localized script	Physical fonts and coverage (in %)
	112-6-serif-bi (100%), 112-7-serif-i (100%), 112-8-serif-r (100%), 112-9-serif-r (100%), 112-10-serif-b (100%), 112-11-serif-bi (100%), 112-12-serif-i (100%), 112-13-mono-b (89%), 112-14-sans-b (100%), 113-1-serif-i (89%), 113-2-serif-r (90%), 115-1-serif-r (27%), 116-1-serif-r (27%), 117-1-serif-r (27%), 118-1-serif-r (93%), 119-1-serif-r (36%), 120-1-serif-r (11%), 122-6-sans-r (55%), 122-7-sans-r (55%), 122-8-sans-r (55%), 122-9-sans-r (55%), 122-15-sans-b (12%), 122-16-sans-r (12%), 122-29-sans-b (55%), 122-30-sans-b (55%), 122-31-sans-b (55%), 122-32-sans-b (55%), 122-33-sans-b (27%), 123-1-sans-b (11%), 123-2-sans-r (11%), 125-1-serif-b (18%), 125-2-serif-r (18%), 126-1-serif-r (53%), 127-1-sans-r (16%), 128-1-serif-b (100%), 128-2-serif-bi (100%), 128-3-serif-i (100%), 128-4-serif-r (100%)
Greek	101-1-serif-r (1%), 105-1-serif-r (36%), 105-2-serif-r (36%), 105-3-serif-r (36%), 105-4-serif-r (36%), 106-1-serif-r (100%), 107-1-serif-r (100%), 108-1-sans-r (36%), 109-1-mono-r (36%), 109-2-mono-b (36%), 111-1-sans-r (100%), 111-2-sans-b (100%), 112-1-mono-r (100%), 112-2-sans-r (100%), 112-3-sans-r (100%), 112-4-sans-r (100%), 112-5-serif-b (100%), 112-6-serif-bi (100%), 112-7-serif-i (100%), 112-8-serif-r (100%), 112-9-serif-r (100%), 112-10-serif-b (100%), 112-11-serif-bi (100%), 112-12-serif-i (100%), 112-13-mono-b (100%), 112-14-sans-b (100%), 113-2-serif-r (100%), 118-1-serif-r (6%), 119-1-serif-r (1%), 122-6-sans-r (24%), 122-7-sans-r (24%), 122-8-sans-r (24%), 122-9-sans-r (24%), 122-29-sans-b (24%), 122-30-sans-b (24%), 122-31-sans-b (24%), 122-32-sans-b (24%), 122-33-sans-b (1%), 125-1-serif-b (24%), 125-2-serif-r (24%), 128-1-serif-b (100%), 128-2-serif-bi (100%), 128-3-serif-i (100%), 128-4-serif-r (100%)
Cyrillic	105-1-serif-r (49%), 105-2-serif-r (49%), 105-3-serif-r (49%), 105-4-serif-r (49%), 106-1-serif-r (98%), 108-1-sans-r (70%), 109-1-mono-r (100%), 109-2-mono-b (100%), 111-1-sans-r (100%), 111-2-sans-b (100%), 112-1-mono-r (94%), 112-2-sans-r (100%), 112-3-sans-r (100%), 112-4-sans-r (83%), 112-5-serif-b (95%), 112-6-serif-bi (95%), 112-7-serif-i (95%), 112-8-serif-r (95%), 112-9-serif-r (95%), 112-10-serif-b (95%), 112-11-serif-bi (95%), 112-12-serif-i (95%), 112-13-mono-b (94%), 112-14-sans-b (100%), 113-1-serif-i (14%), 113-2-serif-r (82%), 118-1-serif-r (53%), 122-6-sans-r (49%), 122-7-sans-r (49%), 122-8-sans-r (49%), 122-9-sans-r (49%), 122-29-sans-b (49%), 122-30-sans-b (49%), 122-31-sans-b (49%), 122-32-sans-b (49%), 125-1-serif-b (49%), 125-2-serif-r (49%), 128-1-serif-b (100%), 128-2-serif-bi (100%), 128-3-serif-i (100%), 128-4-serif-r (100%)
Cyrillic:Macedonian	112-2-sans-r (100%), 112-3-sans-r (100%), 112-5-serif-b (100%), 112-6-serif-bi (100%), 112-7-serif-i (100%), 112-8-serif-r (100%), 112-9-serif-r (100%), 112-10-serif-b (100%), 112-11-serif-bi (100%), 112-12-serif-i (100%), 112-14-sans-b (100%), 113-1-serif-i (61%), 113-2-serif-r (100%)
Cyrillic:Serbian	112-1-mono-r (100%), 112-2-sans-r (100%), 112-3-sans-r (100%), 112-5-serif-b (100%), 112-6-serif-bi (100%), 112-7-serif-i (100%), 112-8-serif-r (100%), 112-9-serif-r (100%), 112-10-serif-b (100%), 112-11-serif-bi (100%), 112-12-serif-i (100%), 112-13-mono-b (100%), 112-14-sans-b (100%), 113-1-serif-i (55%), 113-2-serif-r (100%)
Armenian	106-1-serif-r (97%), 112-1-mono-r (100%), 112-2-sans-r (100%), 112-3-sans-r (100%), 112-4-sans-r (100%), 112-5-serif-b (100%), 112-6-serif-bi (100%), 112-7-serif-i (100%), 112-8-serif-r (100%), 112-9-serif-r (100%), 112-10-serif-b (100%), 112-11-serif-bi (100%), 112-12-serif-i (100%), 112-13-mono-b (100%), 112-14-sans-b (100%)
Hebrew	106-1-serif-r (100%), 111-1-sans-r (100%), 111-2-sans-b (100%), 112-2-sans-r (97%), 112-3-sans-r (97%), 112-14-sans-b (97%), 122-10-sans-r (100%), 122-33-sans-b (93%), 128-1-serif-b (100%), 128-2-serif-bi (100%), 128-3-serif-i

Generic script or language-localized script	Physical fonts and coverage (in %)
	(100%), 128-4-serif-r (100%)
Arabic	102-1-serif-r (56%), 102-2-serif-b (100%), 102-3-serif-bi (100%), 102-4-serif-r (100%), 102-5-serif-i (100%), 112-1-mono-r (60%), 112-2-sans-r (83%), 112-3-sans-r (83%), 112-13-mono-b (60%), 112-14-sans-b (83%), 122-1-sans-b (100%), 122-2-sans-r (100%), 122-3-sans-b (100%), 122-4-sans-r (100%), 122-5-serif-r (87%)
Arabic:Kurdish	112-2-sans-r (97%), 112-3-sans-r (97%), 112-14-sans-b (97%)
Arabic:Sindhi	102-1-serif-r (56%), 102-2-serif-b (100%), 102-3-serif-bi (100%), 102-4-serif-r (100%), 102-5-serif-i (100%), 112-2-sans-r (100%), 112-3-sans-r (100%), 112-14-sans-b (100%), 122-3-sans-b (100%), 122-4-sans-r (100%), 122-5-serif-r (98%)
Arabic:Urdu	102-1-serif-r (74%), 102-2-serif-b (100%), 102-3-serif-bi (100%), 102-4-serif-r (100%), 102-5-serif-i (100%), 112-2-sans-r (87%), 112-3-sans-r (87%), 112-14-sans-b (87%), 122-1-sans-b (82%), 122-2-sans-r (82%), 122-3-sans-b (94%), 122-4-sans-r (94%), 122-5-serif-r (89%)
Syriac	
Thaana	
Devanagari	104-1-serif-b (100%), 104-2-serif-r (100%), 121-1-sans-r (100%), 121-2-sans-r (100%)
Bengali	114-1-sans-r (100%), 120-1-serif-r (100%), 124-1-sans-r (100%), 126-1-serif-r (98%)
Gurmukhi	
Gujarati	
Oriya	122-17-sans-b (100%), 122-18-sans-r (100%)
Tamil	122-19-sans-b (100%), 122-20-sans-r (100%)
Telugu	122-21-sans-b (100%), 122-22-sans-r (100%)
Kannada	122-11-sans-b (100%), 122-12-sans-r (100%)
Malayalam	103-1-sans-r (91%), 122-13-sans-b (100%), 122-14-sans-r (100%)
Thai	106-1-serif-r (100%), 122-23-sans-b (100%), 122-24-sans-r (100%), 122-27-serif-b (100%), 122-28-serif-r (100%)
Lao	112-1-mono-r (70%), 112-2-sans-r (100%), 112-3-sans-r (100%), 112-13-mono-b (70%), 112-14-sans-b (100%)
Tibetan	119-1-serif-r (97%)
Myanmar	122-15-sans-b (100%), 122-16-sans-r (100%), 123-1-sans-b (100%), 123-2-sans-r (100%), 127-1-sans-r (100%)
Georgian	112-1-mono-r (53%), 112-2-sans-r (100%), 112-3-sans-r (100%), 112-4-sans-r (53%), 112-5-serif-b (100%), 112-6-serif-bi (100%), 112-7-serif-i (100%), 112-8-

Generic script or language-localized script	Physical fonts and coverage (in %)
	serif-r (100%), 112-9-serif-r (100%), 112-10-serif-b (100%), 112-11-serif-bi (100%), 112-12-serif-i (100%), 112-13-mono-b (53%), 112-14-sans-b (100%)
Hangul	118-1-serif-r (0.596%), 122-6-sans-r (100%), 122-7-sans-r (100%), 122-8-sans-r (100%), 122-9-sans-r (100%), 122-29-sans-b (100%), 122-30-sans-b (100%), 122-31-sans-b (100%), 122-32-sans-b (100%), 125-1-serif-b (99%), 125-2-serif-r (99%)
Ethiopic	101-1-serif-r (100%), 115-1-serif-r (74%), 116-1-serif-r (74%), 117-1-serif-r (74%)
Cherokee	106-1-serif-r (100%), 118-1-serif-r (25%)
Canadian_Aboriginal	112-2-sans-r (56%), 112-3-sans-r (56%), 112-14-sans-b (56%)
Ogham	106-1-serif-r (100%), 112-2-sans-r (100%), 112-3-sans-r (100%), 112-4-sans-r (100%), 112-14-sans-b (100%)
Runic	106-1-serif-r (90%), 107-1-serif-r (90%)
Khmer	122-25-sans-b (100%), 122-26-sans-r (100%)
Mongolian	
Hiragana	105-1-serif-r (100%), 105-2-serif-r (100%), 105-3-serif-r (100%), 105-4-serif-r (100%), 106-1-serif-r (100%), 118-1-serif-r (100%), 122-6-sans-r (100%), 122-7-sans-r (100%), 122-8-sans-r (100%), 122-9-sans-r (100%), 122-29-sans-b (100%), 122-30-sans-b (100%), 122-31-sans-b (100%), 122-32-sans-b (100%), 125-1-serif-b (97%), 125-2-serif-r (97%)
Katakana	105-1-serif-r (100%), 105-2-serif-r (100%), 105-3-serif-r (100%), 105-4-serif-r (100%), 106-1-serif-r (100%), 118-1-serif-r (100%), 122-6-sans-r (100%), 122-7-sans-r (100%), 122-8-sans-r (100%), 122-9-sans-r (100%), 122-29-sans-b (100%), 122-30-sans-b (100%), 122-31-sans-b (100%), 122-32-sans-b (100%), 125-1-serif-b (97%), 125-2-serif-r (97%)
Bopomofo	105-1-serif-r (94%), 105-2-serif-r (94%), 105-3-serif-r (94%), 105-4-serif-r (94%), 106-1-serif-r (2%), 111-1-sans-r (2%), 111-2-sans-b (2%), 118-1-serif-r (71%), 122-6-sans-r (97%), 122-7-sans-r (97%), 122-8-sans-r (97%), 122-9-sans-r (97%), 122-29-sans-b (97%), 122-30-sans-b (97%), 122-31-sans-b (97%), 122-32-sans-b (97%), 128-1-serif-b (2%), 128-2-serif-bi (2%), 128-3-serif-i (2%), 128-4-serif-r (2%)
Han:Chinese_Simplified	105-1-serif-r (100%), 105-2-serif-r (100%), 105-3-serif-r (100%), 105-4-serif-r (100%), 118-1-serif-r (100%), 122-6-sans-r (100%), 122-7-sans-r (100%), 122-8-sans-r (100%), 122-9-sans-r (100%), 122-29-sans-b (100%), 122-30-sans-b (100%), 122-31-sans-b (100%), 122-32-sans-b (100%), 125-1-serif-b (61%), 125-2-serif-r (61%)
Han:Chinese_Traditional	105-1-serif-r (100%), 105-2-serif-r (100%), 105-3-serif-r (100%), 105-4-serif-r (100%), 118-1-serif-r (100%), 122-6-sans-r (100%), 122-7-sans-r (100%), 122-8-sans-r (100%), 122-9-sans-r (100%), 122-29-sans-b (100%), 122-30-sans-b (100%), 122-31-sans-b (100%), 122-32-sans-b (100%), 125-1-serif-b (89%), 125-2-serif-r (89%)
Han:Japanese	105-1-serif-r (94%), 105-2-serif-r (94%), 105-3-serif-r (94%), 105-4-serif-r (94%), 118-1-serif-r (100%), 122-6-sans-r (100%), 122-7-sans-r (100%), 122-8-sans-r (100%), 122-9-sans-r (100%), 122-29-sans-b (100%), 122-30-sans-b

Generic script or language-localized script	Physical fonts and coverage (in %)
	(100%), 122-31-sans-b (100%), 122-32-sans-b (100%), 125-1-serif-b (84%), 125-2-serif-r (84%)
Han:Korean	105-1-serif-r (99%), 105-2-serif-r (99%), 105-3-serif-r (99%), 105-4-serif-r (99%), 118-1-serif-r (100%), 122-6-sans-r (100%), 122-7-sans-r (100%), 122-8-sans-r (100%), 122-9-sans-r (100%), 122-29-sans-b (100%), 122-30-sans-b (100%), 122-31-sans-b (100%), 122-32-sans-b (100%), 125-1-serif-b (99%), 125-2-serif-r (99%)
Yi	118-1-serif-r (0.172%)
Buhid	
Limbu	
Braille	112-2-sans-r (100%), 112-3-sans-r (100%), 112-5-serif-b (100%), 112-6-serif-bi (100%), 112-7-serif-i (100%), 112-8-serif-r (100%), 112-9-serif-r (100%), 112-10-serif-b (100%), 112-11-serif-bi (100%), 112-12-serif-i (100%), 112-14-sans-b (100%), 118-1-serif-r (0.4%)
Buginese	
Coptic	106-1-serif-r (10%), 107-1-serif-r (4%), 109-1-mono-r (10%), 109-2-mono-b (10%), 111-1-sans-r (10%), 111-2-sans-b (10%), 112-2-sans-r (10%), 112-3-sans-r (10%), 112-14-sans-b (10%), 128-1-serif-b (10%), 128-2-serif-bi (10%), 128-3-serif-i (10%), 128-4-serif-r (10%)
Tifinagh	112-2-sans-r (100%), 112-3-sans-r (100%), 112-14-sans-b (100%)
Phags_Pa	
Nko	112-2-sans-r (91%), 112-3-sans-r (91%), 112-14-sans-b (91%)

Appendix 2: "pfont" attribute of the <font> element

The first column of the following table provides the list of case-sensitive values that can be used for defining the "pfont" attribute of the <font> element.

Each value represent a physical font (e.g. '112-2-sans-r').

The second column provides the name of the physical font.

The third column provides a means for determining which generic scripts (e.g. 'Cyrillic') and language-localized scripts (e.g. 'Cyrillic:Macedonian') are supported by the physical font. Relevant generic scripts and language-localized scripts are listed with their corresponding coverage according to the **CLDR** exemplar characters. If the CLDR does not provide sufficient information for a given script, then the coverage corresponds to the Unicode characters that can be rendered for that script using the physical font.

Physical font	Physical font name	Generic scripts/language-localized scripts and coverage (in %)
101-1-serif-r	Abyssinica SIL, Regular	Common (36%), Latin (28%), Greek (1%), Ethiopic (100%)
102-1-serif-r	Amiri Quran, Regular	Common (13%), Arabic (56%), Arabic:Sindhi (56%), Arabic:Urdu (74%)
102-2-serif-b	Amiri, Bold	Common (39%), Latin (60%), Arabic (100%), Arabic:Sindhi (100%), Arabic:Urdu (100%)
102-3-serif-bi	Amiri, Bold Slanted	Common (39%), Latin (60%), Arabic (100%), Arabic:Sindhi (100%), Arabic:Urdu (100%)
102-4-serif-r	Amiri, Regular	Common (39%), Latin (60%), Arabic (100%), Arabic:Sindhi (100%), Arabic:Urdu (100%)
102-5-serif-i	Amiri, Slanted	Common (39%), Latin (60%), Arabic (100%), Arabic:Sindhi (100%), Arabic:Urdu (100%)
103-1-sans-r	AnjaliOldLipi, Regular	Common (19%), Latin (11%), Malayalam (91%)
104-1-serif-b	Annapurna SIL, Bold	Common (33%), Latin (34%), Devanagari (100%)
104-2-serif-r	Annapurna SIL, Regular	Common (33%), Latin (34%), Devanagari (100%)
105-1-serif-r	AR PL Ukai CN, Regular	Common (84%), Latin (91%), Greek (36%), Cyrillic (49%), Hiragana (100%), Katakana (100%), Bopomofo (94%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (94%), Han:Korean (99%)
105-2-serif-r	AR PL Ukai HK, Regular	Common (84%), Latin (91%), Greek (36%), Cyrillic (49%), Hiragana (100%), Katakana (100%), Bopomofo (94%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (94%), Han:Korean (99%)
105-3-serif-r	AR PL Ukai TW MBE, Regular	Common (84%), Latin (91%), Greek (36%), Cyrillic (49%),

Physical font	Physical font name	Generic scripts/language-localized scripts and coverage (in %)
		Hiragana (100%), Katakana (100%), Bopomofo (94%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (94%), Han:Korean (99%)
105-4-serif-r	AR PL Ukai TW, Regular	Common (84%), Latin (91%), Greek (36%), Cyrillic (49%), Hiragana (100%), Katakana (100%), Bopomofo (94%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (94%), Han:Korean (99%)
106-1-serif-r	Caslon, Roman	Common (59%), Latin (99%), Greek (100%), Cyrillic (98%), Armenian (97%), Hebrew (100%), Thai (100%), Cherokee (100%), Ogham (100%), Runic (90%), Hiragana (100%), Katakana (100%), Bopomofo (2%), Coptic (10%)
107-1-serif-r	Caudex, Regular	Common (43%), Latin (97%), Greek (100%), Runic (90%), Coptic (4%)
108-1-sans-r	Comic Relief, Regular	Common (35%), Latin (56%), Greek (36%), Cyrillic (70%)
109-1-mono-r	Consola Mono, Book	Common (38%), Latin (99%), Greek (36%), Cyrillic (100%), Coptic (10%)
109-2-mono-b	Consola Mono, Bold	Common (38%), Latin (99%), Greek (36%), Cyrillic (100%), Coptic (10%)
110-1-mono-r	Courier Prime, Regular	Common (32%), Latin (55%)
110-2-mono-b	Courier Prime, Bold	Common (32%), Latin (55%)
111-1-sans-r	Cousine, Regular	Common (38%), Latin (100%), Greek (100%), Cyrillic (100%), Hebrew (100%), Bopomofo (2%), Coptic (10%)
111-2-sans-b	Cousine, Bold	Common (38%), Latin (100%), Greek (100%), Cyrillic (100%), Hebrew (100%), Bopomofo (2%), Coptic (10%)
112-1-mono-r	DejaVu Sans Mono, Book	Common (41%), Latin (89%), Greek (100%), Cyrillic (94%), Cyrillic:Serbian (100%), Armenian (100%), Arabic (60%), Lao (70%), Georgian (53%)
112-2-sans-r	DejaVu Sans, Book	Common (45%), Latin (100%), Greek (100%), Cyrillic (100%), Cyrillic:Macedonian (100%), Cyrillic:Serbian (100%), Armenian (100%), Hebrew (97%), Arabic (83%), Arabic:Kurdish (97%), Arabic:Sindhi (100%), Arabic:Urdu (87%), Lao (100%), Georgian (100%), Canadian_Aboriginal (56%), Ogham (100%), Braille (100%), Coptic (10%), Tifinagh (100%), Nko (91%)
112-3-sans-r	DejaVu Sans, Condensed	Common (45%), Latin (100%), Greek (100%), Cyrillic (100%), Cyrillic:Macedonian (100%), Cyrillic:Serbian (100%), Armenian (100%), Hebrew (97%), Arabic (83%), Arabic:Kurdish (97%), Arabic:Sindhi (100%), Arabic:Urdu (87%), Lao (100%), Georgian (100%), Canadian_Aboriginal (56%), Ogham (100%), Braille (100%), Coptic (10%), Tifinagh (100%), Nko (91%)
112-4-sans-r	DejaVu Sans, ExtraLight	Common (39%), Latin (99%), Greek (100%), Cyrillic (83%), Armenian (100%), Georgian (53%), Ogham (100%)
112-5-serif-b	DejaVu Serif, Bold	Common (42%), Latin (100%), Greek (100%), Cyrillic

Physical font	Physical font name	Generic scripts/language-localized scripts and coverage (in %)
		(95%), Cyrillic:Macedonian (100%), Cyrillic:Serbian (100%), Armenian (100%), Georgian (100%), Braille (100%)
112-6-serif-bi	DejaVu Serif, Bold Italic	Common (42%), Latin (100%), Greek (100%), Cyrillic (95%), Cyrillic:Macedonian (100%), Cyrillic:Serbian (100%), Armenian (100%), Georgian (100%), Braille (100%)
112-7-serif-i	DejaVu Serif, Italic	Common (42%), Latin (100%), Greek (100%), Cyrillic (95%), Cyrillic:Macedonian (100%), Cyrillic:Serbian (100%), Armenian (100%), Georgian (100%), Braille (100%)
112-8-serif-r	DejaVu Serif, Book	Common (42%), Latin (100%), Greek (100%), Cyrillic (95%), Cyrillic:Macedonian (100%), Cyrillic:Serbian (100%), Armenian (100%), Georgian (100%), Braille (100%)
112-9-serif-r	DejaVu Serif, Condensed	Common (42%), Latin (100%), Greek (100%), Cyrillic (95%), Cyrillic:Macedonian (100%), Cyrillic:Serbian (100%), Armenian (100%), Georgian (100%), Braille (100%)
112-10-serif-b	DejaVu Serif, Condensed Bold	Common (42%), Latin (100%), Greek (100%), Cyrillic (95%), Cyrillic:Macedonian (100%), Cyrillic:Serbian (100%), Armenian (100%), Georgian (100%), Braille (100%)
112-11-serif-bi	DejaVu Serif, Condensed Bold Italic	Common (42%), Latin (100%), Greek (100%), Cyrillic (95%), Cyrillic:Macedonian (100%), Cyrillic:Serbian (100%), Armenian (100%), Georgian (100%), Braille (100%)
112-12-serif-i	DejaVu Serif, Condensed Italic	Common (42%), Latin (100%), Greek (100%), Cyrillic (95%), Cyrillic:Macedonian (100%), Cyrillic:Serbian (100%), Armenian (100%), Georgian (100%), Braille (100%)
112-13-mono-b	DejaVu Sans Mono, Bold	Common (41%), Latin (89%), Greek (100%), Cyrillic (94%), Cyrillic:Serbian (100%), Armenian (100%), Arabic (60%), Lao (70%), Georgian (53%)
112-14-sans-b	DejaVu Sans, Bold	Common (45%), Latin (100%), Greek (100%), Cyrillic (100%), Cyrillic:Macedonian (100%), Cyrillic:Serbian (100%), Armenian (100%), Hebrew (97%), Arabic (83%), Arabic:Kurdish (97%), Arabic:Sindhi (100%), Arabic:Urdu (87%), Lao (100%), Georgian (100%), Canadian_Aboriginal (56%), Ogham (100%), Braille (100%), Coptic (10%), Tifinagh (100%), Nko (91%)
113-1-serif-i	EB Garamond, 08 Italic	Common (34%), Latin (89%), Cyrillic (14%), Cyrillic:Macedonian (61%), Cyrillic:Serbian (55%)
113-2-serif-r	EB Garamond, 08 Regular	Common (36%), Latin (90%), Greek (100%), Cyrillic (82%), Cyrillic:Macedonian (100%), Cyrillic:Serbian (100%)
114-1-sans-r	Ekushey Lohit, Normal	Common (10%), Bengali (100%)

Physical font	Physical font name	Generic scripts/language-localized scripts and coverage (in %)
115-1-serif-r	Ethiopic Fantuwua, Regular	Common (32%), Latin (27%), Ethiopic (74%)
116-1-serif-r	Ethiopic Wookianos, Regular	Common (32%), Latin (27%), Ethiopic (74%)
117-1-serif-r	Ethiopic Yigezu Bisrat Gothic, Regular	Common (32%), Latin (27%), Ethiopic (74%)
118-1-serif-r	HanaMinA, Regular	Common (67%), Latin (93%), Greek (6%), Cyrillic (53%), Hangul (0.596%), Cherokee (25%), Hiragana (100%), Katakana (100%), Bopomofo (71%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (100%), Han:Korean (100%), Yi (0.172%), Braille (0.391%)
119-1-serif-r	Jomolhari, Regular	Common (42%), Latin (36%), Greek (1%), Tibetan (97%)
120-1-serif-r	Kalpurush, Regular	Common (24%), Latin (11%), Bengali (100%)
121-1-sans-r	Lohit Devanagari, Regular	Common (23%), Devanagari (100%)
121-2-sans-r	Lohit Marathi, Regular	Common (23%), Devanagari (100%)
122-1-sans-b	Noto Kufi Arabic, Bold	Common (3%), Arabic (100%), Arabic:Urdu (82%)
122-2-sans-r	Noto Kufi Arabic, Regular	Common (3%), Arabic (100%), Arabic:Urdu (82%)
122-3-sans-b	Noto Naskh Arabic, Bold	Common (12%), Arabic (100%), Arabic:Sindhi (100%), Arabic:Urdu (94%)
122-4-sans-r	Noto Naskh Arabic, Regular	Common (12%), Arabic (100%), Arabic:Sindhi (100%), Arabic:Urdu (94%)
122-5-serif-r	Noto Nastaliq Urdu Draft, Regular	Common (15%), Arabic (87%), Arabic:Sindhi (98%), Arabic:Urdu (89%)
122-6-sans-r	Noto Sans CJK JP, Regular	Common (91%), Latin (55%), Greek (24%), Cyrillic (49%), Hangul (100%), Hiragana (100%), Katakana (100%), Bopomofo (97%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (100%), Han:Korean (100%)
122-7-sans-r	Noto Sans CJK KR, Regular	Common (91%), Latin (55%), Greek (24%), Cyrillic (49%), Hangul (100%), Hiragana (100%), Katakana (100%), Bopomofo (97%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (100%), Han:Korean (100%)
122-8-sans-r	Noto Sans CJK SC, Regular	Common (91%), Latin (55%), Greek (24%), Cyrillic (49%), Hangul (100%), Hiragana (100%), Katakana (100%), Bopomofo (97%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (100%), Han:Korean (100%)
122-9-sans-r	Noto Sans CJK TC, Regular	Common (91%), Latin (55%), Greek (24%), Cyrillic (49%), Hangul (100%), Hiragana (100%), Katakana (100%), Bopomofo (97%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (100%), Han:Korean (100%)

Physical font	Physical font name	Generic scripts/language-localized scripts and coverage (in %)
122-10-sans-r	Noto Sans Hebrew, Regular	Common (1%), Hebrew (100%)
122-11-sans-b	Noto Sans Kannada, Bold	Common (22%), Kannada (100%)
122-12-sans-r	Noto Sans Kannada, Regular	Common (22%), Kannada (100%)
122-13-sans-b	Noto Sans Malayalam, Bold	Common (22%), Malayalam (100%)
122-14-sans-r	Noto Sans Malayalam, Regular	Common (22%), Malayalam (100%)
122-15-sans-b	Noto Sans Myanmar, Bold	Common (24%), Latin (12%), Myanmar (100%)
122-16-sans-r	Noto Sans Myanmar, Regular	Common (24%), Latin (12%), Myanmar (100%)
122-17-sans-b	Noto Sans Oriya, Bold	Common (22%), Oriya (100%)
122-18-sans-r	Noto Sans Oriya, Regular	Common (22%), Oriya (100%)
122-19-sans-b	Noto Sans Tamil UI, Bold	Common (22%), Tamil (100%)
122-20-sans-r	Noto Sans Tamil UI, Regular	Common (22%), Tamil (100%)
122-21-sans-b	Noto Sans Telugu, Bold	Common (22%), Telugu (100%)
122-22-sans-r	Noto Sans Telugu, Regular	Common (22%), Telugu (100%)
122-23-sans-b	Noto Sans Thai, Bold	Common (1%), Thai (100%)
122-24-sans-r	Noto Sans Thai, Regular	Common (1%), Thai (100%)
122-25-sans-b	Noto Sans, Bold [Khmer]	Common (18%), Khmer (100%)
122-26-sans-r	Noto Sans, Regular [Khmer]	Common (18%), Khmer (100%)
122-27-serif-b	Noto Serif Thai, Bold	Common (1%), Thai (100%)
122-28-serif-r	Noto Serif Thai, Regular	Common (1%), Thai (100%)
122-29-sans-b	Noto Sans CJK JP, Bold	Common (91%), Latin (55%), Greek (24%), Cyrillic (49%), Hangul (100%), Hiragana (100%), Katakana (100%), Bopomofo (97%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (100%), Han:Korean (100%)
122-30-sans-b	Noto Sans CJK KR, Bold	Common (91%), Latin (55%), Greek (24%), Cyrillic (49%), Hangul (100%), Hiragana (100%), Katakana (100%), Bopomofo (97%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (100%), Han:Korean (100%)
122-31-sans-b	Noto Sans CJK SC, Bold	Common (91%), Latin (55%), Greek (24%), Cyrillic (49%), Hangul (100%), Hiragana (100%), Katakana (100%), Bopomofo (97%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (100%), Han:Korean (100%)

Physical font	Physical font name	Generic scripts/language-localized scripts and coverage (in %)
122-32-sans-b	Noto Sans CJK TC, Bold	Common (91%), Latin (55%), Greek (24%), Cyrillic (49%), Hangul (100%), Hiragana (100%), Katakana (100%), Bopomofo (97%), Han:Chinese_Simplified (100%), Han:Chinese_Traditional (100%), Han:Japanese (100%), Han:Korean (100%)
122-33-sans-b	Noto Sans Hebrew, Bold	Common (32%), Latin (27%), Greek (1%), Hebrew (93%)
123-1-sans-b	Padauk, Bold	Common (23%), Latin (11%), Myanmar (100%)
123-2-sans-r	Padauk, Regular	Common (23%), Latin (11%), Myanmar (100%)
124-1-sans-r	Rupali, Regular	Common (15%), Bengali (100%)
125-1-serif-b	SeoulHangang, B	Common (60%), Latin (18%), Greek (24%), Cyrillic (49%), Hangul (99%), Hiragana (97%), Katakana (97%), Han:Chinese_Simplified (61%), Han:Chinese_Traditional (89%), Han:Japanese (84%), Han:Korean (99%)
125-2-serif-r	SeoulHangang, M	Common (60%), Latin (18%), Greek (24%), Cyrillic (49%), Hangul (99%), Hiragana (97%), Katakana (97%), Han:Chinese_Simplified (61%), Han:Chinese_Traditional (89%), Han:Japanese (84%), Han:Korean (99%)
126-1-serif-r	SolaimanLipi, Normal	Common (24%), Latin (53%), Bengali (98%)
127-1-sans-r	TharLon, Regular	Common (31%), Latin (16%), Myanmar (100%)
128-1-serif-b	Tinos, Bold	Common (43%), Latin (100%), Greek (100%), Cyrillic (100%), Hebrew (100%), Bopomofo (2%), Coptic (10%)
128-2-serif-bi	Tinos, Bold Italic	Common (43%), Latin (100%), Greek (100%), Cyrillic (100%), Hebrew (100%), Bopomofo (2%), Coptic (10%)
128-3-serif-i	Tinos, Italic	Common (43%), Latin (100%), Greek (100%), Cyrillic (100%), Hebrew (100%), Bopomofo (2%), Coptic (10%)
128-4-serif-r	Tinos, Regular	Common (43%), Latin (100%), Greek (100%), Cyrillic (100%), Hebrew (100%), Bopomofo (2%), Coptic (10%)