Gigaset

Info Screensaver

XHTML Gigaset Profile 1.0

Protocol Specification

Version 1.2

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1 Introduction

1.1 Purpose of the Document

The purpose of this document is to define an overview of the Gigaset Remote Application Protocol (Gigaset RAP). Since it defines a subset of XHTML-Mobile Profile (XHTML-GP) [1] elements and attributes suitable for Gigaset RAP clients, it is called XHTML Gigaset Profile (XHTML GP).

1.2 Validity of the document

This document is valid for the specification of the interface to the Gigaset RAP client for the realization of Gigaset RAP services.

2 XHTML Reference

2.1 XHTML-GP Markup Rules

XHTML-GP is based on XHTML-MP (which is based on XHTML) and uses the same markup rules. XHTML elements consist of a start tag (which includes the element name and element attributes), element content, and an end tag arranged as follows:

```
<element attribute="value">element content</element>
```

Not all elements have attributes or content.

The following rules apply to XHTML and XHTML-GP documents:

- XHTML documents must be well formed. Because XHTML is based on XML, documents must conform to XML syntax rules.
- XHTML elements must be properly nested.
- Tags and attributes must be lowercase.
- All XHTML elements must be closed. You can use a closing slash with any empty element such as `<br/>` or `<a id="page1"/>.`
- All attribute values must be enclosed in quotation marks.
- A DOCTYPE declaration is required. All examples in this book include this declaration.

2.2 Prologue Components

Each XHTML-GP document starts with a prolog. The prolog declares the language standards to which the document conforms and identifies the document's root element.

2.2.1 Xml declaration

Valid XHTML-GP documents start with an XML declaration, for example:

```
<?xml version="1.0" encoding="utf-8"?>
```

This XML declaration states that the document follows the syntax of XML 1.0. This is the only XML version that is supported by the Gigaset system.

It also states that the character encoding follows the utf-8 standard. The Gigaset system support the character set ISO-8859-1, also known as "Latin 1".

2.2.2 Doctype declaration

Every valid XHTML-GP document contains a `DOCTYPE` declaration between the XML declaration and the document's root element. The `DOCTYPE` declaration tells the browser which XHTML-GP document type the document conforms to and the name of the root element (for XHTML-GP, always `<html>`).

```
<!DOCTYPE html PUBLIC
 "-//OMA//DTD XHTML Mobile 1.2//EN"
 "http://www.openmobilealliance.org/tech/DTD/xhtml-
mobile12.dtd">
```

2.3 Overview

The following list of elements is used in the XHTML Gigaset Profile. Other elements are silently ignored.

Elements	
`<body>`	*yes*
`<head>`	*yes*
`<html>`	*yes*
`<p>`	*yes*
` `	*yes*
`<meta>`	*yes*
`<title>`	*yes*

Attributes	
`xmlns`	*yes*
	yes

Style Attributes	
`text-align`	*yes*
`text-decoration`	*yes*

Name Attributes	
`expires`	*yes*

2.4 Elements

2.4.1 Structure Elements

<html>

The <html> element indicates the start and end of an XHTML-MP document: It is the root element for all XHTML Family Document Types.

Contents	One <body> element and one <head> element.	
Attributes	xmlns	expected value: "http://www.w3.org/1999/xhtml" Though this attribute is needed to build a valid XHMTL document, the mechanism behind is not supported by the Gigaset system (i.e. specific namespaces are not supported)
Examples	The <html> element is shown in all examples in this document.	

<head>

The head element contains information about the current document, such as its title, that is not considered document content. The default presentation of the head is not to display it.

Contents	Must contain one `<title>` element. May contain any number of the following elements: `<meta>`.
Attributes	
Examples	The `<head>` element is shown in all examples in this document.

<title>

Every XHTML document must have a <title> element in the <head> section. The title element is used to identify the document.

Gigaset limitations:

The title element is not shown on the display.

Contents	text only
Attributes	
Examples	The <title> element is shown in most examples in this document.

<body>

The <body> element contains the elements, text, images, and other content that make up the main body of the document. The <body> element is contained in the root element (<html>).

Contents	Any number of the following elements: <p>,
Attributes	
Examples	The <body> element is shown in all examples in this document.

2.4.2 Text Elements

<p>

All text must be defined in paragraphs.

Gigaset limitations:

Up to 44 characters. Due to the use of proportional font in the Gigaset handsets, the number of displayed characters is likely < 44. No checking of text length (some text will be cut by the handset "Long Tex...").

Up to three paragraphs with different alignments are possible in one display line (additional paragraphs will overwrite the existing ones)

No linebreak will be added after <p>. You need an <br> to get into the next line! Consecutive <p> without <br> will be generated in the same line.

Contents	Text only
Attributes	`style` `text-align, text-decoration`

Examples

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC
 "-//OMA//DTD XHTML Mobile 1.2//EN"
 "http://www.openmobilealliance.org/tech/DTD/xhtml-
mobile12.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <title>Weather Forecast</title>
</head>
<body>
  <p style="text-align:center;text-
decoration:blink">
    Weather Bocholt</p>
  <br/>
  <p style="text-align:left">Tue</p>
  <p style="text-align:center">Cloudy</p>
  <p style="text-align:right">22°C</p>
</body>
</html>
```


Moving to the next line with <br/>.
 only allowed in <body> tag, nested <br> are ignored

Gigaset limitations:

 MUST be written as
 (non fatal, device will skip <br>...</br> and its content)

Contents Empty.

Attributes

Examples

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC
 "-//OMA//DTD XHTML Mobile 1.2//EN"
 "http://www.openmobilealliance.org/tech/DTD/xhtml-
mobile12.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <title>Weather Forecast</title>
</head>
<body>
  <p style="text-align:center;text-
decoration:blink">
    Weather Bocholt</p>
  <br/>
  <p style="text-align:left">Tue</p>
  <p style="text-align:center">Cloudy</p>
  <p style="text-align:right">22°C</p>
  <br/>
  <p style="text-align:left">Wed</p>
  <p style="text-align:center">Sunny</p>
  <p style="text-align:right">23°C</p>
</body>
</html>
```

2.4.3 Multimedia elements

<object>[1]

Gigaset limitations:
none

Contents Reference to image or sound file

Attributes

data	absolute URL
type	Mime-type of data (optional) Supported: image/jpeg, image/gif, image/png
width	Display width of object (optional)
height	Display height of object (optional)

Examples

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC
 "-//OMA//DTD XHTML Mobile 1.2//EN"
 "http://www.openmobilealliance.org/tech/DTD/xhtml-
mobile12.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <title>Weather Forecast</title>
</head>
<body>
  <p style="text-align:center;text-
decoration:blink">
    Weather Bocholt</p>
  <br/>
  <p style="text-align:left">Tue</p>
  <p style="text-align:center"><object
data=”http://gigaset.net/images/cloud.jpg”
type=”image/jpg” width=”32”
height=”32”></object></p>
  <p style="text-align:right">22°C</p>
</body>
</html>
```

[1] Tag reserved for future use. This tag is not supported by current Gigaset devices and will be silently ignored.

2.4.4 Metainformation

<meta>

The <meta> element contains metainformation about a document. Examples of metainformation are directions indicating how long the browser should cache the document, keywords or descriptions for search engines, or details about the creator and version of a document.

The <meta> element is contained in the <head> element; it is not displayed.

Contents Empty

Attributes

name	The meta-tag “expires” is used to suggest a time period for reload of the page to the client.
content	Defines the value for the according metainformation.

Examples

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC
 "-//OMA//DTD XHTML Mobile 1.2//EN"
 "http://www.openmobilealliance.org/tech/DTD/xhtml-
mobile12.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <meta name="expires" content="3600" />
  <title>Weather Forecast</title>
</head>
<body>
</body>
</html>
```

2.5 Attributes

2.5.1 Common Attributes

id

Values `softkey1, softkey2`
The id attribute is used to map hyperlinks to softkey 1…2

Default Value

Useful For Hyperlinks
Note: relative URLs are not supported

Example

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC
 "-//OMA//DTD XHTML Mobile 1.2//EN"
 "http://www.openmobilealliance.org/tech/DTD/xhtml-
mobile12.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <title>Weather Forecast</title>
</head>
<body>
  <a href=”http://sponsor.com” id=”softkey1”>Go to
our sponsor</a>
</body>
</html>
```

2.5.2 Style Attributes

The Gigaset RAP support only inline styles, no cascading style sheets are supported. No css-stylesheets are used; all style attributes are to be inline in the XHTML file.

Text properties

text-align

Sets the horizontal alignment of lines of text.

Values `left, right, center`

Default Value `left`

Useful For Block elements.

Example

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC
 "-//OMA//DTD XHTML Mobile 1.2//EN"
 "http://www.openmobilealliance.org/tech/DTD/xhtml-
mobile12.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <title>Weather Forecast</title>
</head>
<body>
  <p style="text-align:left">Tue</p>
  <p style="text-align:center">Cloudy</p>
  <p style="text-align:right">22°C</p>
  <br/>
</body>
</html>
```

text-decoration

Sets blinking of text.

Values `blink`

Default Value `blink`

Useful For All elements that contain text.

Example

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC
 "-//OMA//DTD XHTML Mobile 1.2//EN"
 "http://www.openmobilealliance.org/tech/DTD/xhtml-
mobile12.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <title>Weather Forecast</title>
</head>
<body>
  <p style="text-align:center;
    text-decoration:blink">
    Weather Bocholt</p>
  <br/>
</body>
</html>
```

font-weight

Sets weight of text.

Values `normal, bold`

Default Value `normal`

Useful For All elements that contain text.

Example

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC
 "-//OMA//DTD XHTML Mobile 1.2//EN"
 "http://www.openmobilealliance.org/tech/DTD/xhtml-
mobile12.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <title>Weather Forecast</title>
</head>
<body>
  <p style="text-align:center;
    font-weight:bold">
    Weather Bocholt</p>
  <br/>
</body>
</html>
```

2.5.3 Name Attributes

name

Values

`expires, imageproxy`

The meta-tag “`expires`” is used to suggest a time period for reload of the page to the client. Values: [0,15-86400]
Value = 0 means no automatic refresh.

The meta-tag “`imageproxy`” is used to supply the URL of the image conversion proxy to the client.

Default Value

Useful For

Meta tags

Example

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC
 "-//OMA//DTD XHTML Mobile 1.2//EN"
 "http://www.openmobilealliance.org/tech/DTD/xhtml-
mobile12.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <meta name="expires" content="3600" />
  <meta name="imageproxy"
content="http://gigaset.net/proxy/image.do" />
  <title>Weather Forecast</title>
</head>
<body>
</body>
</html>
```

2.6 Example

This is an example:

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC
 "-//OMA//DTD XHTML Mobile 1.2//EN"
 "http://www.openmobilealliance.org/tech/DTD/xhtml-
mobile12.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <meta name="expires" content="3600" />
  <title>Weather Forecast</title>
</head>
<body>
  <p style="text-align:center;text-decoration:blink">
    Weather Bocholt</p>
  <br/>
  <p style="text-align:left">Tue</p>
  <p style="text-align:center">Cloudy</p>
  <p style="text-align:right">22°C</p>
  <br/>
  <p style="text-align:left">Wed</p>
  <p style="text-align:center">Sunny</p>
  <p style="text-align:right">23°C</p>
  <br/>
  <p style="text-align:left">Thu</p>
  <p style="text-align:center">Cloudy</p>
  <p style="text-align:right">21°C</p>
  <br/>
  <p style="text-align:left">Fri</p>
  <p style="text-align:center">Sunny</p>
  <p style="text-align:right">24°C</p>
  <br/>
</body>
</html>
```

3 HTTP reference

3.1 Authorization

Authorization is done directly at the first request sent to the HTTP-server. The server responds with “401 Unauthorized” and sends the authentication data to the client. The request has to be repeated, extended with authentication data (see examples).

In the following requests the client can directly use these authentication data, until it has expired (after a fixed timeout, typically 1 hour). After that time HTTP-server will again respond with “401 Unauthorized” and send new authentication data to the client.

The “User-Agent” field can be used to identify different client types.

```
GET
http://www.snip.siemens.com/snipservlet.do?command=……HTTP/1.1
User-Agent: SNIP_CLIENT/1.0
Host: www.snip.siemens.com

HTTP/1.1 401 Unauthorized
WWW-Authenticate:Digest realm="snip.siemens.com",
   nonce="2356561841-9a875d65f56d5c6b45a6d5d56b45a5d4",
   qop="auth,auth-int"

GET
http://www.snip.siemens.com/snipservlet.do?command=……HTTP/1.1
User-Agent: SNIP_CLIENT/1.0
Host: www.snip.siemens.com
Authorization:Digest username="snip@snip.siemens.com",
   realm="snip.siemens.com",
   nonce="2356561841-9a875d65f56d5c6b45a6d5d56b45a5d4",
   uri="/snipservlet.do?command=……",
   qop="auth”,nc="00000001”,cnonce="78F86D5A",
   response="565a6d5455f6a45c55b6d5a45f5c5b51",
   opaque=""

HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
...
```

3.2 Image converter proxy

For conversion of jpg, gif, png images contained in XHTML-GP pages to the Gigaset internal fnt format, a proxy service is used.

This proxy is accessed in the following way:

```
GET http://gigaset.net/proxy/image.do?data="<absolute-image-
url>"
```

The output of this request is the image in fnt-format

3.2.1 Compression

Compression parameters can be added to the URL. If no compression parameters are added, the image is sent uncompressed.

- a=N: set compression mode 0 = fast, 1 = normal
  default: 1 (normal)

- d=N: Sets Dictionary size - [0, 30], default: 23 (8MB)
  The maximum value for dictionary size is 1 GB = 2^30 bytes.
  Dictionary size is calculated as DictionarySize = 2^N bytes.
  For decompressing file compressed by LZMA method with dictionary size D = 2^N you need about D bytes of memory (RAM).

- fb=N: set number of fast bytes - [5, 273], default: 128
  Usually big number gives a little bit better compression ratio and slower compression process.

- lc=N: set number of literal context bits - [0, 8], default: 3
  Sometimes lc=4 gives gain for big files.

- lp=N: set number of literal pos bits - [0, 4], default: 0
  lp switch is intended for periodical data when period is equal 2^N. For example, for 32-bit (4 bytes) periodical data you can use lp=2. Often it's better to set lc0, if you change lp switch.

- pb=N: set number of pos bits - [0, 4], default: 2
  pb switch is intended for periodical data when period is equal 2^N.

- mf=MF_ID: set Match Finder. Default: bt4.
  Algorithms from hc* group doesn't provide good compression ratio, but they often works pretty fast in combination with fast mode (-a0).

Memory requirements depend from dictionary size
(parameter "d" in table below).

MF_ID	Memory	Description
bt2	d * 9.5 + 4MB	Binary Tree with 2 bytes hashing.
bt3	d * 11.5 + 4MB	Binary Tree with 3 bytes hashing.
bt4	d * 11.5 + 4MB	Binary Tree with 4 bytes hashing.
hc4	d * 7.5 + 4MB	Hash Chain with 4 bytes hashing.

3.3 Redirection

The Gigaset system supports temporary redirection.

3.4 HTTP Methods

The Gigaset system always uses the ‘GET’ method.

3.5 Language

The language of the handset is added to the HTTP request in the following way:
`http://192.168.2.169/rap/weather.html?g_lang=2`

The application running on the webserver can then return different XHTML pages for different `g_lang` values.

List of supported languages:

0 undefined
1 US
2 German
3 English International
4 Spanish
5 Portuguese
6 Scandinavia
7 Italian
8 Greek
9 French
10 Dutch
11 Norwegian
12 Danish
13 Swedish
14 Finnish
15 Czech
16 Turkish
17 Polish
18 Canadian French
19 Mexican Spanish
20 Brasilien Portuguese
21 Numeric
22 Slovakian
23 reserved
24 reserved
25 Hungarian
26 Croatian
27 Slovenian
28 Romanian
29 Serbian
30 Bulgarian

3.6 Part number

The part number of the Gigaset device is added to the HTTP request in the following way:
`http://192.168.2.169/rap/weather.html?g_pnr=”S30852-S1713-B121-9”`

The application running on the webserver can then return different XHTML pages for different `g_pnr` values.

4 Gigaset Implementation

4.1 Handset capabilities

The Gigaset handsets provide a graphical display with 6 lines, each line is 128 pixels wide. Since the used font is a proportional font, the number of characters per line varies from 11 to 42 characters (‘m’=11 pixels to ‘I’=3 pixels)

The XHTML-GP 1.0 protocol is supported by the handsets SL37H and S67. Though the handsets have different number of display lines (the SL37H has 6 lines, the S67 has 8 lines), no distinction of the handset type is made by the protocol. For compatibility reasons, both handsets are able to handle more lines, whereas the following rules apply:

- the first lines of the XHTML-GP page are presented in the first display lines
- the last line of the XHTML-GP page is presented in the last display line.
- the last display line uses the bold font
- If the number of lines of the XHTML-GP page exceeds the number of display lines, all three alignments of the last line should be defined in the order from left to right, i.e. at least one character (e.g. ‘ ‘) for each alignment should be set.

Example:

```
<html>
...
 <body>
  <!—- the first lines go here
  ...
  <!—- this is the last line
  <p style="text-align:left"> </p>
  <p style="text-align:center">have a nice day</p>
  <p style="text-align:right"> </p>
</body>
</html>
```

S67

Bocholt
Tue. 11/24°C
partly cloudy
lWed 13/25°C
clear
Thu 15/28°C
sunny
have a nice day

SL37H

Bocholt
Tue. 11/24°C
partly cloudy
lWed 13/25°C
clear
have a nice day

4.2 Softkeys

Gigaset handsets provide up to 4 softkeys that can be used to activate hyperlinks. Those hyperlinks MUST be tagged with the attribute ‘id=”<softkey>”’ where <softkey> is the text string “softkey1” to “softkey4”

<a href=”<URL>” id=”softkey1”>SK1

4.3 Fonts (character set ISO 8859-1)

Character	Hex code	Width	Character	Hex code	Width
	0x20	5	¡	0xA1	6
!	0x21	6	¢	0xA2	6
”	0x22	5	£	0xA3	7
#	0x23	7	¤	0xA4	7
$	0x24	7	¥	0xA5	8
%	0x25	10	¦	0xA6	3
&	0x26	10	§	0xA7	7
'	0x27	5	¨	0xA8	7
(	0x28	5	©	0xA9	10
)	0x29	5	ª	0xAA	6
*	0x2A	7	«	0xAB	7
+	0x2B	7	¬	0xAC	6
,	0x2C	5		0xAD	7
-	0x2D	7	®	0xAE	10
.	0x2E	5	¯	0xAF	5
/	0x2F	7	°	0xB0	6
0	0x30	7	±	0xB1	7
1	0x31	7	²	0xB2	6
2	0x32	7	³	0xB3	6
3	0x33	7	´	0xB4	7
4	0x34	7	µ	0xB5	7
5	0x35	7	¶	0xB6	10
6	0x36	7	·	0xB7	4
7	0x37	7	¸	0xB8	4
8	0x38	7	¹	0xB9	6
9	0x39	7	º	0xBA	7
:	0x3A	5	»	0xBB	7
;	0x3B	5	¼	0xBC	8
<	0x3C	5	½	0xBD	8
=	0x3D	7	¾	0xBE	8
>	0x3E	5	¿	0xBF	7
?	0x3F	7	À	0xC0	7
@	0x40	9	Á	0xC1	7
A	0x41	7	Â	0xC2	7
B	0x42	7	Ã	0xC3	7
C	0x43	7	Ä	0xC4	7
D	0x44	7	Å	0xC5	7
E	0x45	6	Æ	0xC6	11
F	0x46	6	Ç	0xC7	7
G	0x47	7	È	0xC8	6
H	0x48	7	É	0xC9	6
I	0x49	3	Ê	0xCA	6
J	0x4A	6	Ë	0xCB	6
K	0x4B	8	Ì	0xCC	3
L	0x4C	6	Í	0xCD	3
M	0x4D	10	Î	0xCE	3
N	0x4E	8	Ï	0xCF	3
O	0x4F	7	Ð	0xD0	7
P	0x50	7	Ñ	0xD1	8

Q	0x51	7	Ò	0xD2	7
R	0x52	7	Ó	0xD3	7
S	0x53	7	Ô	0xD4	7
T	0x54	9	Õ	0xD5	7
U	0x55	7	Ö	0xD6	7
V	0x56	8	×	0xD7	8
W	0x57	10	Ø	0xD8	8
X	0x58	8	Ù	0xD9	7
Y	0x59	8	Ú	0xDA	7
Z	0x5A	7	Û	0xDB	7
[	0x5B	5	Ü	0xDC	7
\	0x5C	7	Ý	0xDD	8
]	0x5D	5	Þ	0xDE	7
^	0x5E	7	ß	0xDF	7
_	0x5F	6	à	0xE0	7
`	0x60	6	á	0xE1	7
a	0x61	7	â	0xE2	7
b	0x62	7	ã	0xE3	7
c	0x63	7	ä	0xE4	7
d	0x64	7	å	0xE5	7
e	0x65	7	æ	0xE6	12
f	0x66	6	ç	0xE7	7
g	0x67	7	è	0xE8	7
h	0x68	7	é	0xE9	7
i	0x69	4	ê	0xEA	7
j	0x6A	5	ë	0xEB	7
k	0x6B	7	ì	0xEC	4
l	0x6C	3	í	0xED	4
m	0x6D	11	î	0xEE	4
n	0x6E	7	ï	0xEF	4
o	0x6F	7	ð	0xF0	7
p	0x70	7	ñ	0xF1	7
q	0x71	7	ò	0xF2	7
r	0x72	6	ó	0xF3	7
s	0x73	7	ô	0xF4	7
t	0x74	6	õ	0xF5	7
u	0x75	7	ö	0xF6	7
v	0x76	8	÷	0xF7	7
w	0x77	10	ø	0xF8	7
x	0x78	7	ù	0xF9	7
y	0x79	7	ú	0xFA	7
z	0x7A	6	û	0xFB	7
{	0x7B	6	ü	0xFC	7
|	0x7C	4	ý	0xFD	7
}	0x7D	6	þ	0xFE	7
~	0x7E	7	ÿ	0xFF	7

5 Literature

[1] http://member.openmobilealliance.org/ftp/public_documents/bac/MAE/Permanent_documents/OMA-XHTMLMP-V1_2-20041222-D.zip

[2] http://www.w3.org/TR/xhtml2

[3] http://www1.wapforum.org/tech/terms.asp?doc=WAP-268-WTAI-20010908-a.pdf