WAP Pictogram Specification

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Continues the Technical Activities
Originated in the WAP Forum

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1. Scope

This section is informative.

Wireless Application Protocol (WAP) is a result of continuous work to define an industry wide specification for developing applications that operate over wireless communication networks. The scope for the WAP Forum is to define a set of specifications to be used by service applications. The wireless market is growing very quickly and reaching new customers and services. To enable operators and manufacturers to meet the challenges in advanced services, differentiation and fast/flexible service creation, WAP defines a set of protocols in transport, session and application layers. For additional information on the WAP architecture, refer to *"Wireless Application Protocol Architecture Specification"* [ARCH].

This specification defines the common pictogram set and its architecture. The common pictogram set is a set of pictograms that the user agents (e.g., mobile phones) may internally have their images, and content authors may use these images in the contents without increasing network traffics. On the other hand, manufactures may install images of pictograms that were appropriate for the device (e.g., size, colour, image format, etc.).

To meet the requirement of the world wide market, the common pictogram set is classified into several classes. For example, some pictograms have operational, culture and time independent semantics and intended to be used generally. The other pictograms are glossary of symbols that represent certain embodiments. Such pictograms are classified into different classes.

The bundles of images could be added to the device as a collection of pictogram in a class. The image bundles could be factory installed, network operators updated, or end user controlled. Images of pictograms could be stored into permanent or temporary storage of the device.

Some user agents that are not capable of displaying images may have alternative way to present pictograms: e.g., character only device may display alternative text instead of its image.

This specification defines a set of semantics of pictogram. However glyphs of pictograms, which represent the image the pictogram may have when they are rendered or displayed, are out of scope of this document.

2. References

2.1 Normative References

[IOPProc]   "OMA Interoperability Policy and Process". Open Mobile Alliance™. OMA-IOP-Process-v1_0. URL:http://www.openmobilealliance.org/

[RFC2119]   "Key words for use in RFCs to Indicate Requirement Levels". S. Bradner. March 1997. URL:http://www.ietf.org/rfc/rfc2119.txt

[RFC2396]   "Uniform Resource Identifiers (URI): Generic Syntax", T. Berners-Lee, et al., August 1998. URL: http://www.ietf.org/rfc/rfc2396.txt.

[UAProf]   "User Agent Profile Specification", WAP-174-UAProf, WAP Forum™, URL:http://www.openmobilealliance.org/

[WML1]   "Wireless Markup Language Specification", WAP-191-WML, WAP Forum™, URL:http://www.openmobilealliance.org/

[WML2]   "Wireless Markup Language Specification Version 2.0", WAP-238-WML, WAP Forum™, URL:http://www.openmobilealliance.org/

[XHTMLMP]   "XHTML Mobile Profile", WAP-277-XHTMLMP, WAP ForumTM, URL:http//www.openmobilealliance.org/

[HTML4]   "HTML 4.01 Specification", W3C Recommendation 24 December 1999. URL: http://www.w3.org/TR/1999/REC-html401-19991224, D.Raggett et al., December 1999.

2.2 Informative References

[WAPARCH]   "WAP Architecture", WAP-100-Arch, WAP Forum™. URL:http//www.openmobilealliance.org/

[CSS2]   "Cascading Style Sheets, level 2 CSS2 Specification", W3C Recommendation 12-May-1998, URL; http://www.w3.org/TR/REC-CSS2

[ISO10646]   "Information Technology - Universal Multiple-Octet Coded Character Set (UCS) - Part 1: Architecture and Basic Multilingual Plane", ISO/IEC 10646-1:1993.

[UNICODE]   "The Unicode Standard: Version 2.0", The Unicode Consortium, Addison-Wesley Developers Press, 1996. URL: http://www.unicode.org/

[SVG]   "Scalable Vector Graphics (SVG) 1.0 Specification", W3C Working Draft 03 December 1999, URL: http://www.w3.org/TR/SVG

[XML]   "Extensible Markup Language (XML) 1.0, W3C Recommendation 10-February-1998, REC-xml-19980210", T. Bray, et al, February 10, 1998. URL: http://www.w3.org/TR/1998/REC-xml-19980210

[WMLScript]   "WMLScript Specification", WAP-193-WMLScript, WAP Forum™. URL:http//www.openmobilealliance.org/

3. Terminology and Conventions

3.1 Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except "Scope" and "Introduction", are normative, unless they are explicitly indicated to be informative.

3.2 Definitions

This section introduces definitions that will be used throughout this document.

Author	an author is a person or program that writes or generates WML ([WML1], [WML2]), [WML], WMLScript [WMLScript] or other content.
Common Pictogram Set	a set of common pictograms defined in this document.
Core Pictogram Set	a set of pictograms that is supported by all device classes. The core pictogram set is the subset of the common pictogram set.
Content	synonym for data objects.
User	a user is a person who interacts with a user agent to view, hear or otherwise use a resource.
User Agent	a user agent is any software or device that interprets WML([WML1], [WML2]), [WML], WMLScript [WMLScript] or other content. This may include textual browsers, voice browsers, search engines, etc.
WML	The Wireless Markup Language is a hypertext markup language used to represent information for delivery to a narrowband device, e.g., a phone. Whenever WML is used this refers to both [WML1] and [WML2] unless otherwise specified.See [WML1] and [WML2] for more detail.
WMLScript	A scripting language used to program the mobile device. WMLScript [WMLScript] is an extended subset of the JavaScriptÒ scripting language. See [WMLScript] for more detail.

3.3 Abbreviations

For the purposes of this specification the following abbreviations apply.

CSS	Cascading Style Sheet [CSS2]
HTML	HyperText Markup Language
HTTP	HyperText Transfer Protocol
RFC	Request For Comments
SVG	Scalable Vector Graphic [SVG]
URI	Uniform Resource Identifier [RFC2396]
URL	Uniform Resource Locator
W3C	World Wide Web Consortium
WAP	Wireless Application Protocol
WAE	Wireless Application Environment
WBMP	Wireless BitMaP
WBXML	WAP Binary XML [WBXML]
WML	Wireless Markup Language
XML	Extensible Markup Language [XML]

DVD   Digital Versatile Disc

TV   Television

4. Introduction

This section is informative.

A pictogram is an icon-like image that is rendered within the text, and shows more intuitive information than text. A user agent renders a pictogram to fit with following and/or preceding characters to allow authors consistent layout and to improve readability of the document. This document defines the common pictogram set in semantics, but not image or glyph. The user agent may render a pictogram in the most appropriate way for the device capabilities. E.g., The user agent that support colour display may render a pictogram as a coloured image, the other user agent may render the pictogram as an animation image, and a text only user agent renders alternative text instead of the image.
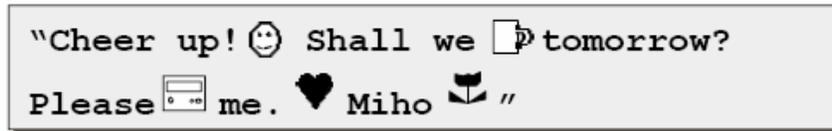

Figure 1: Example Useage of Pictogram Images

This specification provides an extensible mechanism that makes it possible to add a new pictogram to the common pictogram set in the future.

Pictograms are usually pre-installed by the device manufactures, and by using the pictogram mechanism, authors can reduce content data size that is downloaded over the network than using ordinary inline graphical images. It is also possible for pictograms to be dynamically downloaded over the network.

As pictograms have characteristics of both characters and graphical images, there are two approaches to the pictogram mechanism.

- Pictograms as Characters

    Unicode already includes a number of pictogram symbols, and it is considerable to propose common pictogram set in this specification to the Unicode consortium and ISO/IEC as extensions to the Unicode characters [UNICODE] and ISO/IEC 10646 characters [ISO10646]. Pictograms in Unicode may be used in any content where Unicode characters are legal. Such pictograms may be used not only in WML but also in WMLScript or even in the plain text. A Pictogram in Unicode encoded in UTF-8 or UTF-16 costs 2 to 4 bytes, and it is the most efficient way of reducing the content data size. However, coloured or animated pictograms are not allowed in this approach (i.e., technologies such as style sheet allows content authors to specify a colour of a character, however, it is difficult to specify multiple colours to be used in rendering a character in today's font technologies). It is also difficult to add a new pictogram on Unicode in the future; that means this mechanism provides less extensibility.

    However, several technologies such as SVG [SVG], defined in W3C, has a mechanism to use non-Unicode characters in the content. CSS2 [CSS2] also provides a mechanism to download the font data over the network. Such mechanisms may improve extensibility.

- Pictograms as Graphical Images

    In contrast, graphical image pictogram approach enables it very easy to add a new pictogram to the set; it is also possible to use rich presentation feature such as colour or animation, since a pictogram is treated as a graphical image. However, the markup syntax required to identify a graphical pictogram requires more space than that required to identify a Unicode pictogram encoded in UTF-8 or UTF-16. It is also difficult to use graphical image pictogram in the content other than markup language.

As both approaches have advantages and disadvantages, both character and image approach should coexist. However, this document version focuses on specifying graphical image pictogram mechanism. Extensible character approach, such as SVG mechanism [SVG] with CSS2 downloadable font is outside the scope of this document.

5. Pictogram Identification and Installation

5.1 Pictogram Class

This section is normative.

To meet the requirement of the world-wide market, the common pictogram set is classified into several classes.

Pictograms that have operational, culture and time independent semantics and intended to be used generally are classified in the core class. User agents MUST support pictograms in the core class.

The remaining pictograms are classified into several classes that represent reasonable sets of pictograms. In this document, such classes are called Pictogram Dictionary. Pictograms in the Pictogram Dictionary classes may depend of certain region, culture or time. Such pictograms are classified into different classes. User agents MAY support pictograms in the Pictogram Dictionary.

Pictogram sets in the following classes are defined in this document.

Category	Class Name	Description
Core	core	The Core Pictogram set that has operational semantics and culture independent.
	core/arrow	The core set of symbols indicating arrows
	core/button	The core set of symbols indicating numbered buttons
	core/action	The core set of symbols indicating operation or user action
	core/message	The core set of symbols indicating message and message related actions
	core/state	The core set of symbols indicating state such as secure/insecure.
	core/media	The core set of symbols indicating a medium such as TV or book.
	core/info	The other core set of symbols indicating information
Pictogram Dictionary	animal	The optional set of symbols showing animal's name
	appliance	The optional set of symbols for electronic appliances
	astronomy	The optional set of symbols showing sun, planets, etc.
	chineseZodiac	The optional set of symbols showing the animals used in Chinese zodiac.
	dress	The optional set of symbols for dress and accessories
	emotion	The optional set of symbols showing emotional expression
	entertainment	The optional set of symbols used in entertainment
	food	The optional set of symbols showing the name of food
	horoscope	The optional set of horoscope symbols
	human/age	The optional set of symbols showing human appearance according to age
	human/body	The optional set of symbols showing parts of body
	human/gender	The optional set of symbols showing human gender
	humanoid	The optional set of symbols representing a semantic for humanoid
	map	The optional set of common symbols for map
	misc	Other optional symbols not categorised above
	music	The optional set of music related symbols such as musical note or instrument

Category	Class Name	Description
	plant	The optional set of symbols showing plant's name
	ranking	The optional set of symbols showing ranking
	sport	The optional set of symbols showing items of sport
	time/event	The optional set of symbols showing yearly event such as Christmas
	time/schedule	The optional set of symbols related to time, schedule.
	time/season	The optional set of symbols showing the name of seasons
	tool	The optional set of symbols showing the name of tools
	vehicle	The optional set of vehicle symbols
	weapon	The optional set of symbols showing the name of weapon
	weather	The optional set of symbols for weather

Table 1: Pictogram Classes

5.2   Installation of Pictograms

This section is normative.

Device manufactures MAY install certain sets of pictograms and their images into the permanent storage of the device. At least, the core pictogram set MUST be installed by the device manufactures.

When the pictogram is identified in the content, it always has its local name and URL of its resource (e.g., graphical image data of the pictogram). If the user agent supports graphical images, it MUST download the image data from the specified URL if it does not have the graphical image of a pictogram. The downloaded image may be cached as the resource of the specified URL, but the resource SHOULD NOT be reused as the pictogram of the same local name.

This version of the pictogram specification does not define a mechanism to install pictogram images over the network.

A user agent MAY provide a means to allow end-users to install, update, or remove pictograms with a feature such as personal pictogram editor. However, such kind of mechanism is out of scope of this document. Pictograms that are installed by end users MAY override already installed pictograms that have the same local name.

5.3   Local Pictogram Naming

This section is normative.

Each pictogram is identified by its local name. The syntax of local name is restricted to the subset of URI syntax defined in [RFC2396]. Missing production rule in the following BNF depends on [RFC2396].

```
pict_URI      = abs_URI

abs_URI       = scheme ":" net_path


scheme        = "pict"

net_path      = "//" authority abs_path

abs_path      = "/" path_segments


authority     = [ server ]

server        = hostport
```

```
hostport        = host [ ":" port ]

host            = hostname | IPv4address

hostname        = *( domainlabel "." ) toplabel [ "." ]

domainlabel     = alphanum | alphanum *( alphanum | "-" ) alphanum

toplabel        = alpha | alpha *( alphanum | "-" ) alphanum

IPv4address     = 1*digit "." 1*digit "." 1*digit "." 1*digit

port            = *digit


path_segments = class_name "/" pictogram_name

class_name      = segment *( "/" segment )

segment         = *pchar

pictogram_name= *pchar

pchar           = unreserved | escaped |

                  ":" | "@" | "&" | "=" | "+" | "$" | ","
```

Manufactures or authors that attempt to add a pictogram class MUST use their own `authority` to keep uniqueness in the URI. The `authority` of "`www.wapforum.org`" is reserved for the common pictogram set.

`class_name` is the name of a pictogram class defined in section 6.1 or defined by manufactures or authors.

`pictogram_name` is the name of a pictogram in the class.

Only absolute URI MUST be used for local pictogram naming although [RFC2396] allows for more flexible relative URI. If `authority` is NULL, the default value SHALL be "www.wapforum.org".

For example, following two local names are identical:

> `pict://www.wapforum.org/core/arrow/right`

> `pict:///core/arrow/right`

Note that although the local name has URI syntax, it does not indicate the location of the pictogram, but the unique identifier of the pictogram in the hierarchical naming manner.

5.4 Alternative Presentation

This section is informative.

Some user agents that are not capable of displaying images should have alternative way to present pictograms: e.g., character only device may display alternative text instead of the graphical image.

Alternative presentation may vary on type of user agent. For example, user agent with character only display may render an alternative string, and voice browser may pronounce it.

5.5 Capability Negotiation of Pictogram

This section is normative.

A user agent MAY negotiate with origin servers or gateways about which sets of pictograms it supports. Origin servers or gateway MAY compose the content to suit the capability of the user agent; e.g., origin server or gateway MAY replace unsupported pictograms to alternative characters to reduce overall data size.

When the capability negotiation is carried out, the user agent SHOULD describe the available pictogram specifications in accordance to the [UAProf].

6. Pictogram Presentation on WAE User Agents

6.1 Pictogram in WML

This section is normative.

Pictograms MUST be represented using the img element and either the localsrc attribute if it's used in the document that conforms to [WML1] or the wml:localsrc attribute if it's used in the document that conforms to [WML2].

The following examples illustrate how to specify a pictogram in the [WML1] document.

```
<img localsrc="pict:///core/arrow/right"
                    src="http://www.pict.com/xx/rightArrow.wbmp"
                    alt="-&gt;"/>
```

The following examples illustrate how to specify a pictogram in the [WML2] document.

```
    <img wml:localsrc="pict:///core/arrow/right"
                    src="http://www.pict.com/xx/rightArrow.wbmp"
                    alt="-&gt;"/>
```

The src attribute has a URI where the alternative image of the pictogram can be downloaded from, and *alt* attribute has alternative text.

Above examples should be rendered using a symbolic picture of arrow towards a right direction. Graphical image capable user agents that conforms to this specification MUST have the image of the core pictogram set internally; therefore, pictograms in the core set SHALL be rendered as an image without network transaction. If a user agent does not support graphical images, it MUST present pictogram in the alternative way (e.g., render alternative text as "->").

```
    <img localsrc="pict://www.wapforum.org/weather/sunny"
                    src="http://www.pict.com/mypict/sun.wbmp"
                    alt="Sunny"/>

    <img wml:localsrc="pict://www.wapforum.org/weather/sunny"
                    src="http://www.pict.com/mypict/sun.wbmp"
                    alt="Sunny"/>
```

The above examples shall be rendered as an image that represents sunny weather. If a graphical image capable user agent does not have an image of the pictogram which is not in the core class, the user agent SHOULD download the image from the URI specified in the src attribute. If the user agent does not support graphical images, or unable to render the image by any reason, it SHALL render the text "Sunny" as specified in the alt attribute.

6.1.1 General Processing Model

This section is normative.

A [WML1] or [WML2] user agent that conforms to this specification MUST process the pictogram in the following manner.

1. If "pict" scheme is identified it MUST be treated as a pictogram.

2. If the authority is omitted in the local name, the user agent MUST assume that it is "www.wapforum.org".

3. If the user agent supports graphical image and does not have the image data of the pictogram, it SHOULD download the image data from the URL specified in the src attribute if it's provided.

4. If the user agent does not support graphical image, or unable to download the image by any reason, it MUST render or present the alternative text in the alt attribute in the most appropriate way to its capability.

6.2 Pictogram in XHTML

This section is normative.

Pictograms SHOULD be represented using the `object` element [HTML4] if it's used in the document that conforms to [XHTMLMP].

The following examples illustrate how to specify a pictogram in the XHTML document.

```
<object data="pict:///core/arrow/right" />
```

Above example should be rendered using a symbolic picture of arrow towards a right direction. Graphical image capable user agents that conform this specification MUST have the image of the core pictogram set internally; therefore, pictograms in the core set SHALL be rendered as an image without network transaction.

The next example shows how a content author can specify alternate pictogram renderings.

```
<object data="pict:///time/season/winter">

    <object data="pict:///weather/snow">
                        <img src="http://www.pict.com/xx/snowman.wbmp"
                        alt="snowman"/>

    </object>

</object>
```

In the above example, the author is trying to specify a pictogram icon for winter season. Since "winter" pictogram is optional, the author may want to provide alternatives for the user agent that doesn't support "winter" pictogram and thus he or she can rely on the rendering rules defined in 13.3.1 in [HTML4] where it mandates to render the content of `object` element if the user agent cannot render a resource provided in the attributes. In the above example case, the content author provides next two levels of alternative elements. The second level specifies yet another pictogram, "snow" and the third level specifies `img` element which points the external image resource, "snowman.wbmp", and finally alternative text "snowman" for non-graphical user agent. By doing this kind of nesting, a content author can specify his or her preference of which image should be chosen and also can provide appropriate ways of rendering pictogram for multple user agents that have different capabilities.

6.2.1 General Processing Model

This section is normative.
An XHTMLMP user agent that conforms to this specification MUST process the pictograms in the following manner.

1. If "pict" scheme is identified, it MUST be treated as a pictogram. If both of classid and data are identified in the same object element, data attribute has precedence.
2. If the authority is omitted in the local name using "pict" URL, the user agent MUST assume that it is www.wapforum.org.

3. If the user agent cannot render the pictogram for whatever reason, it SHOULD follow the rule to render object element specified in 13.3.1 in [HTML4].

7. Pictogram Set

This section is normative.

The following tables define classes, names, semantics, and binary tokens of the pictogram set. However *glyphs* of pictograms, which represent the graphical image the pictogram may have when they are rendered or displayed, are outside the scope of this document.

7.1 The Core Pictogram Set

Class	Subclass	Name	Description
core	arrow	up	Arrow symbol to up
		down	Arrow symbol to down
		right	Arrow symbol to right
		left	Arrow symbol to left
		upperRight	Arrow symbol to upper right
		upperLeft	Arrow symbol to upper left
		lowerRight	Arrow symbol to lower right
		lowerLeft	Arrow symbol to lower left
		fingerUp	Pointing finger, up
		fingerDown	Pointing finger, down
		fingerRight	Pointing finger, right
		fingerLeft	Pointing finger, left
	button	1	Button symbol labelled to number one
		2	Button symbol labelled to number two
		3	Button symbol labelled to number three
		4	Button symbol labelled to number four
		5	Button symbol labelled to number five
		6	Button symbol labelled to number six
		7	Button symbol labelled to number seven
		8	Button symbol labelled to number eight
		9	Button symbol labelled to number nine
		0	Button symbol labelled to number zero
	action	makePhoneCall	Off-hook sign
		find	A sign indicating "look-up"
		userAuthentication	A sign indicating "authentication request"
		password	A sign indicating "password input"
		nextItem	A sign indicating "the next item exists and/or a link to it"
		clear	A sign indicating "clean up"
		stop	"Stop" sign
		top	A link sign to the home page
		next	A link sign to the next page or card

Class	Subclass	Name	Description
		back	A link sign to the previous page or card
	message	receive	A symbol indicating an action to retrieve a message
		send	A symbol indicating an action to send a message
		message	a symbol for mail/envelope
		document	a symbol for a document
		attachment	a symbol for an attachment/paper clip
		folder	a symbol for folder
		inbox	a symbol for inbox
		outbox	a symbol for outbox
	state	secure	A sign indicating secured properly
		insecure	A sign indicating unsecured
		copyright	A copyright symbol
		trademark	A trademark symbol
		underConstruction	A sign indicating "under construction" status
		beginner	A sign indicating aimed for a beginner
	media	book	A symbol for a book
		video	A symbol for a video
		cd	A symbol for a compact disc
		dvd	A symbol for a DVD
		game	A symbol for a game
		radio	A symbol for a radio tuner
		tv	A symbol for a TV set
	info	notice	A notice sign
		charged	A sign of charged content
		freeofcharge	A sign of free-of-charge content
		new	A symbol showing brand new
		position	A sign indicating positioning information
		tollfree	A sign for toll-free call
		sharpdial	A sign for sharp-dial
		reserved	A sign for seat reservation (e.g. concert)
		speechinfo	A sign indicating spoken guidance or information exist

Table 2: Core Pictogram Set

7.2 Pictogram Dictionary

Class	Subclass	Name	Description
animal		octopus	octopus
		monkey	monkey
		pig	pig
		cat	cat

Class	Subclass	Name	Description
		dog	dog
		bear	bear
		whale	whale
		penguin	penguin
		tiger	tiger
		rabbit	rabbit
		rat	rat
		ladybird	ladybird (ladybug)
		beetle	beetle
		fish	fish
appliance		pager	a symbol of pager
		antenna	a symbol of antenna
		camera	a symbol of camera
		phone	a symbol of phone
		mobilePhone	a symbol of mobile phone
		fax	a symbol of facsimile machine
		pc	a symbol of personal computer
astronomy		sun	Sun
		moon	Moon
		earth	Earth
		star	a symbol of star
chineseZodiac		rat	a sign of the Rat in Chinese zodiac
		ox	a sign of the Ox in Chinese zodiac
		tiger	a sign of the Tiger in Chinese zodiac
		rabbit	a sign of the Rabbit in Chinese zodiac
		dragon	a sign of the Dragon in Chinese zodiac
		snake	a sign of the Snake in Chinese zodiac
		horse	a sign of the Horse in Chinese zodiac
		sheep	a sign of the Sheep in Chinese zodiac
		monkey	a sign of the Monkey in Chinese zodiac
		cock	a sign of the Cock in Chinese zodiac
		dog	a sign of the Dog in Chinese zodiac
		boar	a sign of the Boar in Chinese zodiac
dress		highHeels	a symbol of high heels
		dress	a symbol of dress, clothes
emotion		smile	a smile sign
		cry	crying sign
		sad	a sad sign
		angry	angry sign

Class	Subclass	Name	Description
		pullFace	pull faces sign
		inLove	a sign of "in love"
		shock	a sign showing shocked
		coldSweat	a sign of cold sweat
		shakenHeart	a sign showing shaken feeling
		brokenHeart	a sign of broken heart
		discourage	a sign showing discouraged feeling
		flash	a sign showing inspired feeling
		sleepy	a sleepy sign
		anxious	an anxious sign
		surprised	a sign showing surprised feeling
		tutting	a tutting sign
		happy	a sign of happy feeling
		punch	a symbol of punch
		wink	a symbol of wink
		thumbsUp	a symbol of thumbs up
		thumbsDown	a symbol of thumbs down
		kiss	a kiss symbol
		smell	a symbol of suspiciousness
		cool	a symbol of being attractive, fashionable
		hug	a symbol of hug
		trapped	a symbol for being trapped
		shine	a shining sign
entertainment		prize	a symbol of prize
		slotMachine	a symbol of slot machine
		horserace	a symbol of horse racing
		motorboatRace	a symbol of motor boat racing
		bicycleRace	a symbol of bicycle racing
		heart	a symbol of heart from cards
		diamond	a symbol of diamond from cards
		spade	a symbol of spade from cards
		clover	a symbol of clover from cards
		hitDart	a symbol shown dart hit at the centre
		crown	a symbol of crown
food		beer	a symbol of beer
		forkKnife	a symbol of fork and knife
		cocktail	a symbol of cocktail glass
		cake	a symbol of cake
		coffeeCup	a symbol of coffee cup

Class	Subclass	Name	Description
horoscope		aries	Aries / the Ram
		taurus	Taurus / the Bull
		gemini	Gemini / the Twins
		cancer	Cancer / the Crab
		leo	Leo / the Lion
		virgo	Virgo / the Virgin
		libra	Libra / the Balance
		scorpio	Scorpio / the Scorpion
		sagittarius	Sagittarius / the Archer
		capricorn	Capricorn / the Goat
		aquarius	Aquarius / the Water Bearer
		pisces	Pisces / the Fishes
		ophiuchus	Ophiuchus / the Serpens Holder
human	age	baby	baby
	body	eye	eye(s)
		ear	ear(s)
		rock	a rock symbol of "scissors-paper-rock"
		scissors	a rock symbol of "scissors-paper-rock"
		paper	a rock symbol of "scissors-paper-rock"
		foot	a symbol of foot
		shoes	shoe
		spectacles	eye glasses
		wheelchair	wheelchair
	gender	man	man
		woman	woman
humanoid		devil	devil
		skull	skull sign
		alien	alien
		ghost	ghost
		angel	angel
map		signal	a sign of traffic signal
		parking	a sign of parking place
		busStop	a sign of bus stop
		restroom	a sign of restroom
		policeStation	a sign of police station or police box
		postOffice	a sign of post office
		bank	a sign of bank
		atm	a sign of automatic teller machine
		hospital	a sign of hospital

Class	Subclass	Name	Description
		convenienceStore	a sign of convenience store
		school	a sign of school
		park	a sign of park
		hotel	a sign of hotel
		gasStation	a sign of gas station
		house	a sign of house
		cross	a sign of church or cross
		restaurant	a sign of meals/restaurant
		store	a sign of store/shopping mall
		cafe	a sign of tearoom, coffee shop
		fastfood	a sign of fast-food shop
		pub	a sign of bar, pub
		movie	a sign of cinema
		karaoke	a sign of karaoke bar
		spa	a sign of spa house
		amusementPark	a sign of amusement park
		zoo	a sign of zoo
		building	a sign of building
		ticket	a sign of ticket or ticket shop
		noSmoking	a sign of place prohibited to smoke
		smoking	a sign of place allowed to smoke
misc		giftBox	a symbol of gift box
		fire	a symbol of fire
		snowman	a symbol of snowman
		work	a sing showing "under work"
		money	a symbol showing money, cash
music		quarterNote	a quarter note sign
		G-clef	a G clef sign
		rest	a rest sign
		guitar	a symbol of guitar
plant		fourLeafClover	a four-leaf clover
		flower	a symbol of flower
ranking		trophy	a symbol of the 1st prize trophy
		gold	a symbol of gold medal, the 1st rank
		silver	a symbol of silver medal, the 2nd rank
		bronze	a symbol of bronze medal, the 3rd rank
sport		sport	a symbol indicating sport
		baseball	a symbol of baseball
		soccer	a symbol of soccer, football

Class	Subclass	Name	Description
		basketball	a symbol of basketball
		ski	a symbol of ski
		camp	s symbol of camping
		motorSport	a symbol of motor sport
		checkerFlag	a symbol of checker flag
		golf	a symbol of golf
		surfing	a symbol of surfing
		fishing	a symbol of fishing
		horseriding	a symbol of horse riding
		americanFootball	a symbol of American football
		swimming	a symbol of swimming
		scuba	a symbol of scuba diving
time	event	anniversary	a sign of anniversary
		holiday	a sign of holiday
		xmas	a sign of Christmas (X'mas) season
		birthday	a sign of birthday
		party	a sign of a party event
		newYearsEve	a sign of New Year's Eve
		newYearsDay	a sign of New Year's Day
	schedule	3oclock	a clock sign showing 3 o'clock
		calendar	a symbol of calendar
	season	spring	a sign of Spring
		summer	a sign of Summer
		autumn	a sign of Autumn
		winter	a sign of Winter
tool		hammer	a symbol of hammer
vehicle		bus	a symbol of bus
		train	a symbol of train
		expressTrain	a symbol of express train
		car	a symbol of car
		taxi	a sign of taxi
		plane	a symbol of air plane
		ship	a symbol of ship, boat
		onFoot	a symbol of "on foot"
		subway	a sign of subway, tube, underground train
		rocket	a symbol of rocket
weapon		gun	a symbol of gun, pistol
		bomb	a symbol of bomb
weather		sunny	sunny sign

Class	Subclass	Name	Description
		rainy	rainy sign
		cloudy	cloudy sign
		snow	snowy sign
		thunder	thunder
		foggy	foggy sign
		wave	wave

Table 3: Pictogram Dictionary

Appendix A.   Static Conformance Requirements   (Normative)

This section is normative.

Static Conformance Requirements defines a minimum set of features that can be implemented to ensure that WAE User Agents and WAE Servers are able to inter-operate. While both WAE User Agent behaviour and WAE server behaviour are described in this specification, not all items apply to both entities, thus giving separate tables for each entity.

 The format, contents and syntax of the tables in this section are as mandated by [IOPProc].

A.1   WAE User Agent

A.1.1   Pictogram Identification and installation

Item	Function	Reference	Status	Requirement
WPCT-CA-C-001	Manufacture installation of core pictogram set	5.2	M	
WPCT-CA-C-002	Manufacture installation of other pictogram set	5.2	O	
WPCT-CA-C-003	Local naming	5.3	M	
WPCT-CA-C-004	capability negotiation	5.5	O	UAProf:MCF

Table 4: SCR – WAE User Agent Pictogram Identification and Installation

A.1.2   Pictogram in WAE

Item	Function	Reference	Status	Requirement
WPCT-CW-C-001	Pictogram support in WAE user agent	6	M	WPCT-CW-C-002 OR WPCT-CW-C-004
WPCT-CW-C-002	Pictogram in WML	6.1	O	WPCT-CW-C-003
WPCT-CW-C-003	General Processing Model for WML User Agent	6.1.1	O	WML1:MCF AND WML1:WML-C-032 OR WML2:MCF AND WML2:WML-IMAGEMOD-C-001
WPCT-CW-C-004	Pictogram in XHTML	6.2	O	WPCT-CW-C-005
WPCT-CW-C-005	General Processing Model for XHTMLMP user agent	6.2.1	O	XHTMLMP:MCF

Table 5: SCR – WAE User Agent Pictogram Support in WAE

A.1.3   Core Pictogram Set

Item	Function	Reference	Status	Requirement
WPCT-CC-C-001	core/arrow	5.1, 7.1	M	
WPCT-CC-C-002	core/button	5.1, 7.1	M	
WPCT-CC-C-003	core/action	5.1, 7.1	M	
WPCT-CC-C-004	core/message	5.1, 7.1	M	
WPCT-CC-C-005	core/state	5.1, 7.1	M	
WPCT-CC-C-006	core/media	5.1, 7.1	M	
WPCT-CC-C-007	core/info	5.1, 7.1	M	

Table 6: SCR – WAE User Agent Pictogram Core Set

A.1.4   Pictogram Dictionary

Item	Function	Reference	Status	Requirement
WPCT-CD-C-001	animal	5.1, 7.2	O	
WPCT-CD-C-002	astronomy	5.1, 7.2	O	
WPCT-CD-C-003	chineseZodiac	5.1, 7.2	O	
WPCT-CD-C-004	dress	5.1, 7.2	O	
WPCT-CD-C-005	emotion	5.1, 7.2	O	
WPCT-CD-C-006	entertainment	5.1, 7.2	O	
WPCT-CD-C-007	equipment	5.1, 7.2	O	
WPCT-CD-C-008	food	5.1, 7.2	O	
WPCT-CD-C-009	horoscope	5.1, 7.2	O	
WPCT-CD-C-010	human/age	5.1, 7.2	O	
WPCT-CD-C-011	human/body	5.1, 7.2	O	
WPCT-CD-C-012	human/gender	5.1, 7.2	O	
WPCT-CD-C-013	humanoid	5.1, 7.2	O	
WPCT-CD-C-014	map	5.1, 7.2	O	
WPCT-CD-C-015	misc	5.1, 8.2	O	
WPCT-CD-C-016	music	5.1, 7.2	O	
WPCT-CD-C-017	plant	5.1, 7.2	O	
WPCT-CD-C-018	ranking	5.1, 7.2	O	
WPCT-CD-C-019	sport	5.1, 7.2	O	
WPCT-CD-C-020	time/event	5.1, 7.2	O	
WPCT-CD-C-021	time/schedule	5.1, 7.2	O	
WPCT-CD-C-022	time/season	5.1, 7.2	O	
WPCT-CD-C-023	tool	5.1, 7.2	O	
WPCT-CD-C-024	vehicle	5.1, 7.2	O	
WPCT-CD-C-025	weapon	5.1, 7.2	O	
WPCT-CD-C-026	weather	5.1, 7.2	O	

Table 7: SCR – WAE User Agent Pictogram Dictionary

A.2   WAE Server

A.2.1   Pictogram Architecture

Item	Function	Reference	Status	Requirement
WPCT-SA-C-001	capability negotiation	6.5	O	

Table 8: SCR – WAE Server Pictogram Architecture

Appendix B.   Implementation Example of Pictogram Images

This section is informative.

This appendix shows one example of pictogram implementation, by which the rendering effect of pictogram (e.g. image size scaling embedded in the text content) can be done as shown in Figure.1.

One of the most simple and easiest ways to achieve this effect is to implement a local image of pictogram as a part of character font.
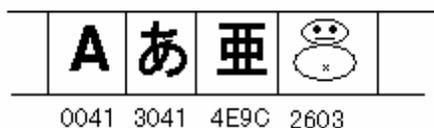
Figure 2: Font Memory Image

In [UNICODE], characters are given code points like Figure.2. In case of code value 0x2603, "SNOWMAN", typical glyph image looks as the first image from right in Figure.2. When a WML user agent detects "pict://www.wapforum.org/weather/snow" and renders it, it may use the image assigned in the code point 0x2603 from the font memory. This way allows a user agent to use the same rendering mechanism as character font, therefore the image scaling can be accomplished as a content author intends.

It might be difficult or not possible to find the same or similar definition between many of pictogram symbols defined in the chapter 7 and [UNICODE]. In such case, the use of Private User Area could be considered. Private User Area is preserved for user- or vendor-specific characters, where 6400 proprietary characters/glyphs can be pre-installed.

Appendix C.   Change History   (Informative)

C.1   Approved Version History

Reference	Date	Description
WAP-213-WAPInterPic-20010406-d (implied version 1.0)	06 Apr 2001	The final draft of this document for Proposed voting.
WAP-213_101-WAPInterPic-2001123-a (implied version 1.0.1)	23 Nov 2001	Corrections of WAP SIN addressing: * Removal of section 6.2 " Pictogram in WBXML" * Bug fixes to SCR tables
WAP-213_102-WAPInterPic.20011128-a (implied version 1.0.2)	28 Nov 2001	Correction of WAP SIN addressing alignment with WAP V2
OMA-WAP-TS-Pictogram-V1_1	20 Oct 2006	Approved by TP OMA Ref# OMA-TP-2006-0369R01-INP_Browsing_V2_1_for_Final_Approval