

WAP Specification Information Note

WAP-174_100-UAPROF

Version 21-Jun-2000

**A Wireless Application Protocol
Specification Information Note for:**

**User Agent Profile Specification
WAG-174-UAPROF
Version 10-Nov-1999**

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1 Scope

Specification Information Note (SIN) fixes technical and clerical errors in the originally published approved specification.

This Specification Information Note addresses following issues in WAP User Agent Profile Specification, WAP-174-UAPROF, Version 10-Nov-1999:

- Inclusion of Static Conformance Requirements
- Separation of references into normative and informative lists
- Clarification on the use of CCPP-Accept-* attributes, differences between CC/PP-WSP and CC/PP-HTTP, and mandate on binary encoding of profile documents
- Preferred method for handling extension framework headers wrt CC/PP Exchange Protocol
- Clarification and corrections in data types and description of vocabulary attributes
- Addition of an attribute to identify the applications supported by the client device

1.1 Included Change Requests

The following approved change requests are included in this Specification Information Note:

- UAProf-02-December-1999-0
- UAProf-10-December-1999-0
- UAProf-20-January-2000-0
- UAPROF-20000512-PUSHDC-1

1.2 Affected Sections

This Specification Information Note modifies the following specification sections:

- 2.0 References
- 5.1 Client Device
- 5.3 WAP Gateway
- 6.7 Resolving Attribute Values in the CPI
- 7.5 User Agent Profile Schema and Base Vocabulary
- 7.6 Profile Example in RDF
- 8.2 Encoding Semantics
- 8.3.1.2 Core Vocabulary
- 8.3.2.2 Core Vocabulary
- 8.3.2.3 Browser User-Agent
- 9.1.2 Using WSP to Transport CCPP Profiles
- 9.1.3 Differences Between CCPP/HTTP and CCPP/WSP
- 9.2.2 The Profile-Diff Header

- 9.3.3 Header Translation Between CC/PP-WSP and CC/PP-HTTP
- 9.4 Static Conformance Requirements
- 10 Origin Server Behaviour
- 11 Interim Proxy Support
- 11.3 Gateway Support
- A.1 Summary of User Agent Profile Schema
- A.7 Static Conformance Requirements

2 Document Status

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- PDF format at <http://www.wapforum.org/>.

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2.2 Errata

Known problems associated with this document are published at <http://www.wapforum.org/>.

2.3 Comments

Comments regarding this document can be submitted to the WAP Forum in the manner published at <http://www.wapforum.org/>.

3 Inclusion of Static Conformance Requirements

3.1 Change Classification

1 – New Feature, Major Change or Market Effecting Change	[]
2 – Bug Fixes	[]
3 – Clerical Corrections	[X]

3.2 Change Summary

Specifications starting with WAP 1.2 should include the Static Conformance Requirements. This SIN adds the UAProf SCRs to the specification as Appendix A.7, and removes an old redundant SCR from chapter 9.4.

3.3 Change

Section 9.4 of the specification is stricken and the following text is inserted at the end of the UAProf specification.

Appendix A.7: Static Conformance Requirements

1.1 Client

1.1.1 Binary encoding

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
<u>WAG-UA-CB-001</u>	<u>Profile encoding</u>	<u>8</u>	<u>O</u>

1.1.2 Protocol

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
<u>WAG-UA-CP-001</u>	<u>Profile header in WSP Connect</u>	<u>9.3.1</u>	<u>M</u>
<u>WAG-UA-CP-002</u>	<u>Behaviour on missing Profile-warning in response</u>	<u>9.3.1</u>	<u>M</u>
<u>WAG-UA-CP-003</u>	<u>Order of request and session headers</u>	<u>9.3.2</u>	<u>M</u>
<u>WAG-UA-CP-004</u>	<u>Does the client comply with the rules in [14] and [16]?</u>	<u>9.4</u>	<u>M</u>
<u>WAG-UA-CP-005</u>	<u>Use of standard WSP headers</u>	<u>5.3</u>	<u>M</u>
<u>WAG-UA-CP-006</u>	<u>Information part of the CPI</u>	<u>5.3</u>	<u>M</u>
<u>WAG-UA-CP-007</u>	<u>Additonal headers with requests</u>	<u>9.1.2</u>	<u>O</u>

1.2 Structure and encoding of header fields

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
<u>WAG-UA-CS-001</u>	<u>Does the Profile header match the production rule [1]?</u>	<u>9.2</u>	<u>M</u>
<u>WAG-UA-CS-002</u>	<u>Does the Profile-Diff header match the production rule [4]?</u>	<u>9.2.2</u>	<u>M</u>
<u>WAG-UA-CS-003</u>	<u>Does the Profile-warning header match the production rule [8]?</u>	<u>9.2.3</u>	<u>M</u>

1.3 Gateway

1.3.1 Protocol

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
<u>WAG-UA-GP-001</u>	<u>Does the gateway comply with the rules in [15]?</u>	<u>9.3.1</u>	<u>M</u>

WAG-UA-GP-002	Does the gateway comply with the rules in [17]?	9.3.2	M
WAG-UA-GP-003	Does the gateway comply with the rules in [18]?	9.3.2	M
WAG-UA-GP-004	Does the gateway comply with the rules in [19]?	9.3.1	M
WAG-UA-GP-005	Does the gateway comply with the rules in [20]?	9.3.3	M
WAG-UA-GP-006	Does the gateway comply with the rules in [21]?	9.3.3	M
WAG-UA-GP-007	Caching of Profile and Profile-Diff headers	9.1.2	O
WAG-UA-GP-008	References from headers	9.1.3	O
WAG-UA-GP-009	Transmission of multiple profiles in one header	9.1.3	O
WAG-UA-GP-010	Encoding of the Profile section in Profile-Diff headers	9.1.3	M
WAG-UA-GP-011	Encoding of the Profile in production [7]	9.1.3	M

1.3.2 Decoder behaviour

Item	Function	Reference	Status
WAG-UA-GD-001	Does the decoder consider significant the encoding means applied to a markup construct?	8.2.3	M
WAG-UA-GD-002	Does the decoder treat a tag or attribute name encoded with a single-byte token and a tag or attribute name encoded using the LITERAL global token as equivalent if the resulting strings are equivalent?	8.2.3	M

1.3.3 Header Translation

Item	Function	Reference	Status
WAG-UA-GH-001	Does the WAP gateway forward WSP requests as HTTP requests [WAE]?	9.3.3	M
WAG-UA-GH-002	Does the gateway forward all CC/PP-WSP headers as CC/PP-HTTP headers in accordance with the rules in section 9.3.3?	9.3.3	M
WAG-UA-GH-003	Does the gateway insert additional profile information into the request?	9.3.3	O
WAG-UA-GH-004	If the gateway inserts additional profile information into the request, is that information inserted at the end of the Profile as either a URL or a dynamically generated Profile-Diff header in accordance with [CC/PPex]?	9.3.3	M
WAG-UA-GH-005	Does the gateway introduce a profile (and, if necessary, Profile-Diff header) for clients whose	9.3.3	O

	WSP session has no cached Profile or Profile-Diff headers?		
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1.4 Origin server

1.4.1 Protocol

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
<u>WAG-UA-OP-001</u>	Does the origin server (that supports UAProf) respond with the Profile-warning header with the warning code set to 100 ("OK")?	<u>9.3.1</u>	<u>M</u>

1.4.2 Profile

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
<u>WAG-UA-OR-001</u>	Does the origin server application parse the complete profile before using a set of attributes?	<u>7.3</u>	<u>M</u>

1.5 Schemas

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
<u>WAG-UA-S-001</u>	Is the schema associated with a well-defined vocabulary?	<u>7.1</u>	<u>M</u>
<u>WAG-UA-S-002</u>	Does a unique URI serve as an unambiguous identifier for the vocabulary?	<u>7.1</u>	<u>M</u>
<u>WAG-UA-S-003</u>	Does the schema consist of at least one component?	<u>7.1</u>	<u>M</u>
<u>WAG-UA-S-004</u>	Does each component in said schema describe a set of attributes within one or more description blocks?	<u>7.1</u>	<u>M</u>
<u>WAG-UA-S-005</u>	Do all components in the schema have the same schema structure (layout)?	<u>7.1</u>	<u>M</u>
<u>WAG-UA-S-006</u>	Is every component in the schema an object of the type Class?	<u>7.1</u>	<u>M</u>
<u>WAG-UA-S-007</u>	Does each component contain a subordinate description block for default attributes?	<u>7.1</u>	<u>O</u>
<u>WAG-UA-S-008</u>	Are default attributes described within the Default description block?	<u>7.1</u>	<u>M</u>
<u>WAG-UA-S-009</u>	Are descriptions to override default values included in the component description, but outside	<u>7.1</u>	<u>M</u>

	the Default description block?		
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1.5.1 Attributes

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
WAG-UA-SA-001	Does each profile attribute belong to only one component in the schema?	7.3	M
WAG-UA-SA-002	Is a domain constraint (rdfs:domain) used to describe the attribute-component relationship in the schema?	7.3	M
WAG-UA-SA-003	Is each profile attribute defined using a name and value pair syntax?	7.3	M
WAG-UA-SA-004	Is every part of the RDF property description unique and unambiguous in both semantics and value?	7.3	M
WAG-UA-SA-005	Is every attribute description within an RDF description embedded inline to denote the value, or expressed as an RDF resource?	7.3	M
WAG-UA-SA-006	Are all multi value and composite attributes described as RDF resources?	7.3	M
WAG-UA-SA-007	For all cases when lists of values are associated with given attributes, are RDF containers (Bag or sequence) used?	7.3	M
WAG-UA-SA-008	Is the description of the attribute within the Default tag resolved first? Do other descriptions of the attribute override the default description? Is the ultimate value of the attribute determined by the resolution rules for that attribute? (see section 7.3 (Locked, Override, Append))	7.3	M
WAG-UA-SA-009	Does the attribute closely represent the semantics of the capability or the characteristics being represented?	7.3	M
WAG-UA-SA-010	Does the attribute follow the naming conventions defined in RDF, and the RDF schema?	7.3	M

1.5.2 Profile

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
WAG-UA-SP-001	Is the root node identified with an invariant node	7.4	M

	<u>name?</u>		
<u>WAG-UA-SP-002</u>	<u>Does the profile contain one or more attributes identified in the base vocabulary?</u>	<u>7.4</u>	<u>M</u>
<u>WAG-UA-SP-003</u>	<u>Are the component instances of the components identified in the schema?</u>	<u>7.4</u>	<u>M</u>
<u>WAG-UA-SP-004</u>	<u>Do all profile parsers parse the profile based on the component?</u>	<u>7.4</u>	<u>M</u>

1.5.3 UAProf Schema

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
<u>WAG-UA-SU-001</u>	<u>Is the schema expressed in RDF and encoded in XML?</u>	<u>7.5</u>	<u>M</u>
<u>WAG-UA-SU-002</u>	<u>Does the schema include semantic descriptions of all attributes identified in the vocabulary?</u>	<u>7.5</u>	<u>M</u>

1.5.4 Schema Extensions

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
<u>WAG-UA-SE-001</u>	<u>Does the extended attributes defer from using attribute names that are reserved from future use by the base vocabulary as listed in appendix A.5?</u>	<u>7.7</u>	<u>M</u>
<u>WAG-UA-SE-002</u>	<u>Is the new schema/vocabulary uniquely identified using a well-defined XML namespace?</u>	<u>7.7</u>	<u>M</u>
<u>WAG-UA-SE-003</u>	<u>Are the attributes (names and semantics) different in all cases in the new schema when compared to the base vocabulary.</u>	<u>7.7</u>	<u>M</u>
<u>WAG-UA-SE-004</u>	<u>Has the schema designer visualized the RDF document as an RDF graph, and verified the intuitions against common RDF tools?</u>	<u>7.7</u>	<u>M</u>
<u>WAG-UA-SE-005</u>	<u>Has the CC/PP document been expressed using the abbreviated syntax?</u>	<u>7.7</u>	<u>M</u>
<u>WAG-UA-SE-006</u>	<u>Are control characters and binary bytes being encoded in conformance with XML syntax specifications?</u>	<u>7.7</u>	<u>M</u>
<u>WAG-UA-SE-007</u>	<u>Do all components and attributes start with an upper case character?</u>	<u>7.7</u>	<u>M</u>
<u>WAG-UA-SE-008</u>	<u>Are all multiple word names described as one word, with the first letter of the second word in upper case?</u>	<u>7.7</u>	<u>M</u>
<u>WAG-UA-SE-009</u>	<u>Are all multiple (or single) word names free of any</u>	<u>7.7</u>	<u>M</u>

	<u>separator or underscore characters?</u>		
<u>WAG-UA-SE-010</u>	<u>Are all boolean values described with "Yes" or "No"?</u>	<u>7.7</u>	<u>M</u>
<u>WAG-UA-SE-011</u>	<u>Is the schema free from cyclic references (URIs)?</u>	<u>7.7</u>	<u>M</u>
<u>WAG-UA-SE-012</u>	<u>Do the components used in the standardized base vocabulary meet the needs of a majority of the current content providers?</u>	<u>7.7.1</u>	<u>M</u>
<u>WAG-UA-SE-013</u>	<u>Do the designers of new schemas add those attributes to these defined components (HardwarePlatform, SoftwarePlatform, NetworkCharacteristics, WAPCharacteristics, BrowserUA)?</u>	<u>7.7.1</u>	<u>M</u>
<u>WAG-UA-SE-014</u>	<u>Does the schema allow for the meaningful introduction of future device capabilities into the profile?</u>	<u>7.7.1</u>	<u>M</u>
<u>WAG-UA-SE-015</u>	<u>Is the attribute or attributes included in a component uniquely defined?</u>	<u>7.7.1</u>	<u>M</u>
<u>WAG-UA-SE-016</u>	<u>Does the schema for new components follow the general schema layout for the core profile components?</u>	<u>7.7.1</u>	<u>M</u>
<u>WAG-UA-SE-017</u>	<u>Does the nested description for each component incorporate a subordinate description block to identify default attributes, preferably referenced by a resource URI?</u>	<u>7.7.1</u>	<u>M</u>
<u>WAG-UA-SE-018</u>	<u>Are all overrides or modifications to the default descriptions made outside the Default subordinate block?</u>	<u>7.7.1</u>	<u>M</u>

1.5.5 UAProf new attributes

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
<u>WAG-UA-SU-001</u>	<u>Are the attributes described in the vocabulary atomic and semantically unambiguous?</u>	<u>7.7.2</u>	<u>M</u>
<u>WAG-UA-SU-002</u>	<u>Are the names used to define/represent the attributes unique within the namespace?</u>	<u>7.7.2</u>	<u>M</u>
<u>WAG-UA-SU-003</u>	<u>Has the use of complex data types, such as containers, value ranges, constraints, and units been minimized?</u>	<u>7.7.2</u>	<u>M</u>
<u>WAG-UA-SU-004</u>	<u>Are the values of all attributes expressed as strings or RDF resources?</u>	<u>7.7.2</u>	<u>M</u>
<u>WAG-UA-SU-005</u>	<u>Are all values that are complex data types expressed as RDF containers?</u>	<u>7.7.2</u>	<u>M</u>
<u>WAG-UA-SU-006</u>	<u>Is the rdf:resource construct used, where appropriate, to indicate to the RDF parser that the</u>	<u>7.7.2</u>	<u>M</u>

	value of an attribute is indeed a resource and not a literal?		
WAG-UA-SU-007	Have rules for resolving multiple descriptions of an attribute been specified as part of the semantics?	7.7.2	M
WAG-UA-SU-008	Does the rule specify a <i>locked</i>, <i>override</i>, or <i>append</i> treatment for value resolution?	7.7.2	O
WAG-UA-SU-009	If no rule has been specified as said above, is a default rule of Override assumed for the attribute?	7.7.2	M
WAG-UA-SU-010	Does the use of escape control characters and binary bytes conform to the XML syntax?	7.7.2	M

1.5.6 Additional tokens

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
WAG-UA-ST-001	Is there a component defined for each user agent or application that defines properties for use in the user agent profile?	8.1.4	M
WAG-UA-ST-002	For every component defined, is the name of that component globally unique?	8.1.4	M
WAG-UA-ST-003	For every component defined, is there a series of token table code pages containing the properties from its component?	8.1.4	M
WAG-UA-ST-004	For every such code page, is there at least two properties defined: one in the "Tag" space, and one in the "Attribute" space?	8.1.4	M
WAG-UA-ST-005	Are the attributes listed in each page?	8.1.4	M
WAG-UA-ST-006	Are any well-known values for the properties inserted into the "Attribute" page?	8.1.4	M

1.5.7 XML Namespace

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
WAG-UA-SX-001	Does the WBXML encoder convert the document's chosen prefix to the prefix defined for that namespace in table 8.1, when it encounters a namespace declaration that matches one of the allowed namespaces and its prefix does not match the defined prefix.	8.2.1	M
WAG-UA-SX-002	Does the encoder, when it encounters a namespace other than those defined here, encode all elements	8.2.1	M

	<u>from that namespace using literal tags?</u>		
<u>WAG-UA-SX-003</u>	<u>Does the encoder, when it encounters a namespace other than those defined here, encode all attribute names for elements defined in that namespace using literal names?</u>	<u>8.2.1</u>	<u>M</u>
<u>WAG-UA-SX-004</u>	<u>Does the encoder, when it encounters a namespace other than those defined here, preserve the namespace prefix in the encoding of the tags and attribute names?</u>	<u>8.2.1</u>	<u>M</u>
<u>WAG-UA-SX-005</u>	<u>Does the encoder, when it encounters a namespace other than those defined here, preserve all namespace declarations (instances of the attribute xmlns)?</u>	<u>8.2.1</u>	<u>M</u>

1.5.8 Document validation

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
<u>WAG-UA-SD-001</u>	<u>Does the process of tokenizing a Profile document verify that the document is well-formed according to [XML]?</u>	<u>8.2.2</u>	<u>M</u>
<u>WAG-UA- SD-002</u>	<u>Does the process allow encoding only of well-formed Profile documents?</u>	<u>8.2.2</u>	<u>M</u>
<u>WAG-UA- SD-003</u>	<u>Does the process raise an error when encountering documents that are not well-formed Profile documents?</u>	<u>8.2.2</u>	<u>M</u>

1.5.9 Profile Header

<u>Item</u>	<u>Function</u>	<u>Reference</u>	<u>Status</u>
<u>WAG-UA- SH-001</u>	<u>Does the syntax of the Profile header conform to the production [1]?</u>	<u>9.2.1</u>	<u>M</u>
<u>WAG-UA- SH-002</u>	<u>Does the syntax of the Profile-Diff header conform to the production of [4]?</u>	<u>9.2.2</u>	<u>M</u>
<u>WAG-UA- SH-003</u>	<u>Is the CC/PP profile specified in [7] encoded using WBXML as specified in section 8?</u>	<u>9.2.2</u>	<u>M</u>
<u>WAG-UA- SH-004</u>	<u>Does the syntax of the Profile warning header conform to the production of [8]?</u>	<u>9.2.3</u>	<u>M</u>

4 Separation of References

4.1 Change Classification

1 – New Feature, Major Change or Market Effecting Change	[]
2 – Bug Fixes	[]
3 – Clerical Corrections	[X]

4.2 Change Summary

The UAProf specification is currently ambiguous with respect to normative and informative references. This SIN corrects the reference list to make this separation. It also corrects ambiguous reference information.

4.3 Change

Section 2 of the UAProf specification is stricken and replaced with the following text:

2 References

2.1 Normative References

- [CC/PP] [Franklin Reynolds, Johan Hjelm, Spencer Dawkins, and Sandeep Singhal, "Composite Capability/Preferences Profiles: A user side framework for content negotiation," W3C Note, 27 July 1999, http://www.w3.org/TR/1998/NOTE-CCPP-19990727. \(Note that this specification refers to the 7/99 version of this specification, irrespective of the availability of future versions of that specification\).](http://www.w3.org/TR/1998/NOTE-CCPP-19990727)
- [CC/PPex] [Hidetaka Ohto and Johan Hjelm, "Composite Capability/Preference Profiles \(CC/PP\) Exchange protocol based on HTTP Extension Framework," W3C NOTE 17 June 1999, http://www.w3.org/Mobile/Group/IG/1999/06/NOTE-CCPPexchange-19990617. \(Note that this specification refers to the 6/1999 version of this specification, irrespective of the availability of future versions of that specification\).](http://www.w3.org/Mobile/Group/IG/1999/06/NOTE-CCPPexchange-19990617)
- [HTTP] [R. Fielding, et al., "Hypertext Transfer Protocol -- HTTP/1.1," RFC2616, June 1999.](#)
- [HTTPext] [H. Nielsen, P. Leach, and S. Lawrence, "An HTTP Extension Framework," RFC 2774, February 2000.](#)
- [RDF] [Lassila, "Resource Description Framework \(RDF\) Model and Syntax Specification," W3C Recommendation, February 1999, http://www.w3.org/TR/1999/PR-rdf-syntax-19990105.](http://www.w3.org/TR/1999/PR-rdf-syntax-19990105)
- [RDF-Schema] [Brickley, et al., "RDF Schema Specification," W3C Proposed Recommendation, March 1999, http://www.w3.org/TR/WD-rdf-schema.](http://www.w3.org/TR/WD-rdf-schema)
- [RFC1766] [H. Alvestrand, "Tags for the Identification of Languages," RFC 1766, March 1995.](#)
- [RFC2045] [N. Freed and N. Borenstein. "Multipurpose Internet Mail Extensions \(MIME\) Part One: Format of Internet Message Bodies," RFC 2045, November 1996.](#)
- [RFC2119] [S. Bradner, "Key words for use in RFCs to Indicate Requirement Levels," RFC 2119, March 1997.](#)
- [RFC2396] [T. Berners-Lee, R. Fielding, and L. Masinter, "Uniform Resource Identifiers \(URI\): Generic Syntax," RFC 2396, August 1998.](#)
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5 Clarification on the use of CCPP-Accept-* attributes, differences between CC/PP-WSP and CC/PP-HTTP, and mandate on binary encoding of profile documents

5.1 Change Classification

- | | |
|--|-----|
| 1 – New Feature, Major Change or Market Effecting Change | [] |
| 2 – Bug Fixes | [X] |
| 3 – Clerical Corrections | [] |

5.2 Change Summary

- The existing UAProf specification introduces ambiguity with respect to the proper relationship between the UAProf CCPP-Accept-* attributes and the standard HTTP Accept-* headers. This change resolves that ambiguity in the following way:

- The client that wants to convey accept header information **MUST** do so through standard WSP headers, such as Accept, Accept-Charset, and Accept-Language. Information contained in these headers **MUST** constitute part of the CPI.
- Though the UAProf spec describes the binary encoding of profile documents, it fails to mandate that this encoding actually be used.
- The wording in the CC/PP-WSP informative section is oblique in describing the differences between CC/PP-WSP and CC/PP-HTTP.

5.3 Change

5.1 Client Device

[...]

The client device is assumed to employ the WAP communications protocols, particularly WSP [WSP], to request content from an origin server. The CPI is transmitted and maintained using designated WSP headers in accordance with this specification (see Section 9). This information is initially conveyed when a WSP session is established with a compliant WAP protocol gateway. The client thereafter assumes that the WAP gateway caches the CPI and will apply it on all requests initiated during the lifetime of the WSP session. (The client that wants to convey Accept header information must do so through standard WSP headers, such as Accept, Accept-Charset, and Accept-Language. Information contained in these headers must constitute part of the CPI.)

5.3 WAP Gateway

[...]

The WAP gateway is responsible for translating WSP requests into appropriate HTTP 1.1 requests for delivery over an intranet or the Internet to the designated origin server. In forwarding these requests, the gateway must also forward the current CPI associated with the session and/or request. This specification requires that the gateway use the HTTP Extension Framework to convey the CPI information within HTTP headers, as discussed in Section 9.3.3. When generating the HTTP request, the gateway may augment the received CPI with additional data obtained from local databases, such as a network Home Location Register (HLR).

The WAP gateway is also responsible for translating HTTP responses into appropriate WSP responses for delivery over the wireless network to the requesting client device. In forwarding these responses, the gateway must also forward any CPI usage headers provided by the origin server and/or any intermediate HTTP proxies.

The WAP gateway may be responsible for providing the CPI information to other network elements, such as a Push Proxy Gateway, to deliver to content servers that explicitly request the profile.

6.7 Resolving Attribute Values in the CPI

An origin server or proxy that needs to determine the correct values for CPI attributes must resolve the profile. This resolution process applies a collection of default attribute values and then applies appropriate overrides to those defaults. Because different network elements may provide additional (or overriding) profile information, the resolution process must apply this additional information to determine the final attribute values.

The User Agent Profile is constructed in **three** stages:

- Resolve all indirect references by retrieving URI references contained within the profile
- Resolve each Profile and Profile-Diff document by first applying attribute values contained in the default URI references and by second applying overriding attribute values contained within the category blocks of that Profile or Profile-Diff.

- Determine the final value of the attributes by applying the resolved attribute values from each Profile and Profile-Diff in order, with the attribute values determined by the resolution rules provided in the schema. Where no resolution rules are provided for a particular attribute in the schema, values provided in profile diffs are assumed to override values provided in previous profiles or profile diffs.

9.1.2 Using WSP to Transport CCPP Profiles

The WSP protocol has some features that cannot be found in HTTP. To reduce the size of request messages, the WSP client can cache headers in the ~~server~~ gateway for the lifetime of a WSP session. The cached headers are called session headers and are sent to the ~~server~~ gateway during session establishment. The client can use the **Resume** operation of WSP to update the session headers during the session. At any time the client or the ~~server~~ gateway can terminate the session and establish a new one, with new session headers. Moreover, the client may provide additional headers with each request; these request headers are merged with the cached headers (and, possibly, other WSP headers) to generate the final CPI that is transmitted over HTTP.

WSP uses Profile and Profile-Diff headers to convey the CPI. A Profile header contains a single URL, referencing an externally accessible CPI document. The Profile-Diff header contains a WBXML-encoded CPI document. Multiple Profile and Profile-Diff headers MAY be cached by the gateway and/or included with a request.

The WAP gateway combines request headers with cached session headers to create HTTP requests [WAE]. The following list summarizes the WSP header management:

- If one or many *Profile* headers are cached in the server, the client can override all of them within the scope of a particular request by sending one or more *Profile* headers in a single request message.
- If one or many *Profile-Diff* headers are cached in the server, the client can override all of them within the scope of a particular request by sending one or more ~~other~~ *Profile-Diff* headers in a single request message. ~~The same is true for the Profile-Diff header.~~
- If one or many *Profile* headers, but no *Profile-Diff* headers, are cached in the server, the client can append one or many *Profile-Diff* headers within the scope of a particular request by including them in a request message.
- If one or many *Profile-Diff* headers, but no *Profile* headers, are cached in the server, the client can append one or many *Profile* headers within the scope of a particular request by including them in a request message.
- By using the **Resume** function, the client can update the session headers, without establishing a new session¹.

9.1.3 Differences Between CCPP/HTTP and CCPP/WSP

The following are the differences between CC/PP-HTTP and CC/PP-WSP:

- In the CC/PP-WSP *Profile-Warning* response header, the warning text is not included.
- In CC/PP-HTTP, multiple profile references are transmitted in one *Profile* header. The header may reference both external profiles (via a URL) or embedded profiles (via a URN containing an MD5 checksum of the embedded profile). Embedded profiles are associated with custom headers computed from the profile's MD5 checksum. In WSP, a *Profile* header can only transmit one profile reference, but multiple *Profile* headers can be transmitted in the same WSP header; the Profile header only references external profiles via URL. In addition, multiple Profile-Diff headers, each containing an embedded profile, may be transmitted in the same WSP header. No functionality is lost, because the WAP gateway is capable of generating the MD5 checksums for the Profile-Diff documents and constructing a complete Profile header for transmission over HTTP.

¹ This is not possible in WSP 1.0.

- In the CC/PP-WSP *Profile-Diff* header, the profile section must be encoded using WBXML as specified in Section 8. In the CC/PP-HTTP *Profile-Diff* header, the profile section must be sent as XML text.

9.2.2 The Profile-Diff Header

The syntax of the Profile-Diff header MUST conform to the production of [4]. The CC/PP-profile in production [7] MUST be encoded using WBXML as specified in Section 8.

9.3.3 Header Translation Between CC/PP-WSP and CC/PP-HTTP

The WAP gateway MUST forward WSP requests as HTTP 1.1 requests [WAE]. In forwarding the request, the gateway MUST forward all CC/PP-WSP headers (defined in Section 9.2 and resolved at the gateway according to the rules of Section 9.3.2) as CC/PP-HTTP headers (defined in [CCPPEX]) according to these rules:

- [19.] Each CC/PP-WSP Profile-Diff header field is translated into exactly one CC/PP-HTTP Profile-Diff header field. The CC/PP-HTTP Profile-Diff headers are generated dynamically as specified in [CC/PPEX]. WBXML encoding of the profile section MUST be undone, leaving the profile section as XML text.
- [20.] A single CC/PP-HTTP Profile header field is generated as specified in [CC/Ppex] by listing the values of each CC/PP-WSP *Profile* header and the values of each dynamically generated CC/PP-HTTP *Profile-Diff* header. The ordering of this list preserves the ordering of the corresponding WSP *Profile* and/or *Profile-Diff* headers in the WSP setup/Resume and WSP request messages, as appropriate.
- [22.] ~~One CC/PP-HTTP *Profile-Warning* response header is translated into exactly one CC/PP-WSP *Profile-Warning* response header. The warning text from the HTTP header is not translated. The client that wants to convey Accept header information MUST do so through standard WSP headers, such as Accept, Accept-Charset, and Accept-Language. Information contained in these headers MUST constitute part of the CPI.~~

10 Origin Server Behaviour

[...]

Upon receiving a User Agent Profile, an origin server MAY do the following:

- Parse the profile
- Validate the syntax of the profile
- Resolve attribute values by applying overriding rules and default values, applying the algorithm described in Section 6.7.
- Validate the attribute value types
- Customize content according to the information contained within the profile

11 Interim Proxy Support

[...]

Within such an adapting proxy chain, each supporting proxy will determine whether to adapt the content being returned by examining the content, the profile contained in the received request, and the profile forwarded to the content server. In particular, if a server returns a data type that was enabled as a result of a *Profile-Diff* introduced by the adapting proxy, then the proxy would be expected to adapt the content to a format that is supported by the received request. Note also that if gateways or proxies wish to add to or modify the Accept* header information, they must also add an equivalent Profile-diff segment in order to reflect the same information in the CPI.

6 Preferred method for handling extension framework headers

6.1 Change Classification

1 – New Feature, Major Change or Market Effecting Change	[]
2 – Bug Fixes	[X]
3 – Clerical Corrections	[]

6.2 Change Summary

The preferred method for handling extension framework headers is currently optional, end-to-end to ensure that the profile will be forwarded through compliant proxies.

6.3 Change

11.3 Gateway Support

The CC/PP Exchange Protocol [CC/PPex] defines several mechanisms by which profiles may be transmitted, namely

- Mandatory and hop-by-hop
- Optional and hop-by-hop
- Mandatory and end-to-end
- Optional and end-to-end

Given the relative novelty of the CC/PP mechanism, initial WAP gateway deployments should use the optional and ~~hop-by-hop~~ end-to-end forwarding mechanism. This mode ensures that the CC/PP headers will be forwarded through all existing HTTP 1.1 proxies, regardless of whether they support the HTTP Extension Framework. However, as a drawback, the use of "end-to-end" headers precludes a proxy from modifying the Profile: header included in the request. Consequently, proxies cannot override the profile (by adding a Profile-Diff, for example) without violating the rules governing the end-to-end mode. Note, however, that in spite of this recommendation, the WAP gateway should apply hop-by-hop semantics if it has a priori knowledge about the behavior and capabilities of the proxies residing in the request channel.

7 Clarification and corrections in data types and descriptions of vocabulary attributes

7.1 Change Classification

1 – New Feature, Major Change or Market Effecting Change	[]
2 – Bug Fixes	[X]
3 – Clerical Corrections	[]

7.2 Change Summary

Inconsistent vocabulary descriptions and corrections in data types are required in the UAProf specification.

7.3 Change

7.5 User Agent Profile Schema and Base Vocabulary

[...]

```
<?xml version="1.0"?>
<rdf:RDF xmlns:rdf = "http://www.w3.org/TR/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs = "http://www.w3.org/1999/PR-rdf-schema-19990303#"
  xmlns:prf="http://www.wapforum.org/UAPROF/ccppschemat2000040519991014#">
```

[...]

```
<rdf:Description ID="MaxScreenChar">
  <del>rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
  <del>rdfs:domain rdf:resource="#HardwarePlatform"/>
  <del>rdfs:comment>
    <del>Description: Size of the virtual page onto which a document is
    rendered, in units of characters. Property value is
    composed of the screen width and screen height. The
    device's standard font should be used to determine this
    property's value. This property may not apply to all
    devices.
    Type: Dimension
    Resolution: Locked
    Examples: "16x80", "16x4"
  </del>rdfs:comment>
</del>rdf:Description>
```

```
<rdf:Description ID="Model">
  <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
  <rdfs:domain rdf:resource="#HardwarePlatform"/>
  <rdfs:comment>
    Description: Model number assigned to the terminal device by the
    vendor or manufacturer.
    Type: Literal
    Resolution: Locked
    Examples: "Mustang GT", "Q30"
  </rdfs:comment>
</rdf:Description>
```

```

<rdf:Description ID="NumberOfSoftKeys">
  <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
  <rdfs:domain rdf:resource="#HardwarePlatform"/>
  <rdfs:comment>
    Description:  Number of soft keys available on the device.
    Type:        Number
    Resolution:   Locked
    Examples:     "3", "2"
  </rdfs:comment>
</rdf:Description>

<rdf:Description ID="OutputCharSet">
  <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
  <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Bag"/>
  <rdfs:domain rdf:resource="#HardwarePlatform"/>
  <rdfs:comment>
    Description:  List of character sets supported by the device for
                  output to the display. Property value is a list of
                  character sets, where each item in the list is a
                  character set name, as registered with IANA. List items are
separated by white space.
    Type:        Literal
    Resolution:   Append
    Examples:     "US-ASCII", "ISO-8859-1", "Shift_JIS"
  </rdfs:comment>
</rdf:Description>

<rdf:Description ID="PixelAspectRatio">
  <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
  <rdfs:domain rdf:resource="#HardwarePlatform"/>
  <rdfs:comment>
    Description:  Ratio of pixel width to pixel height.
    Type:        Dimension
    Resolution:   Locked
    Examples:     "1x2"
  </rdfs:comment>
</rdf:Description>

```

[...]

```

<rdf:Description ID="SoftKeysCapable">
  <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
  <rdfs:domain rdf:resource="#HardwarePlatform"/>
  <rdfs:comment>
    Description:  Indicates whether the device supports programmable soft
                  keys. A soft key is a physical key whose label and
                  function can change programmatically.
    Type:        Boolean
    Resolution:   Locked
    Examples:     "Yes", "No"
  </rdfs:comment>
</rdf:Description>

<rdf:Description ID="SoundOutputCapable">
  <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
  <rdfs:domain rdf:resource="#HardwarePlatform"/>
  <rdfs:comment>
    Description:  Indicates whether the device supports sound output
                  through an external speaker, headphone jack, or other
                  sound output mechanism.
    Type:        Boolean
    Resolution:   Locked
    Examples:     "Yes", "No"
  </rdfs:comment>
</rdf:Description>

```

```
</rdfs:comment>
</rdf:Description>
```

```
<rdf:Description ID="StandardFontProportional">
  <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
  <rdf:domain rdf:resource="#HardwarePlatform"/>
  <rdfs:comment>
    Description: Indicates whether the device's standard font is
                  proportional.
    Type:        Boolean
    Resolution:   Locked
    Examples:     "Yes", "No"
  </rdfs:comment>
</rdf:Description>
```

[...]

```
<rdf:Description ID="DownloadableSoftwareSupport">
  <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
  <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Bag"/>
  <rdf:domain rdf:resource="#SoftwarePlatform"/>
  <rdfs:comment>
    Description: List of executable content types which the device
                  supports and which it is willing to accept from the
                  network. The property value is a list of MIME types,
                  where each item in the list is a content type
                  descriptor as specified by RFC 2045. Items in the list are
separated by white space.
    Type:        Literal
    Resolution:   Locked
    Examples:     "application/x-msdos-exe"
  </rdfs:comment>
</rdf:Description>
```

[...]

```
<rdf:Description ID="FramesCapable">
  <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
  <rdf:domain rdf:resource="#BrowserUA"/>
  <rdfs:comment>
    Description: Indicates whether the browser is capable of displaying HTML
                  frames.
    Type:        Boolean
    Resolution:   Override
    Examples:     "Yes", "No"
  </rdfs:comment>
</rdf:Description>
```

[...]

```
<rdf:Description ID="TablesCapable">
  <rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
  <rdf:domain rdf:resource="#BrowserUA"/>
  <rdfs:comment>
    Description: Indicates whether the browser is capable of displaying HTML
                  tables.
    Type:        Boolean
    Resolution:   Locked
    Examples:     "Yes", "No"
  </rdfs:comment>
</rdf:Description>
```

7.6 Profile Example in RDF

[...]

```
<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:prf="http://www.wapforum.org/UAPROF/ccppschemat200004051999101420000405#">

  <rdf:Description ID="MyProfile">

    <prf:component>
      <rdf:Description ID="TerminalHardware">
        <rdf:type resource="http://www.wapforum.org/UAPROF/ccppschemat2000040519991014/#HardwarePlatform" />
        <prf:Defaults rdf:resource="http://www.nokia.com/profiles/2160" />
        <!-- override the ImageCapable property, and add VoiceInputCapable
            and Keyboard properties -->
        <prf:ImageCapable>Yes</prf:ImageCapable>
        <prf:Keyboard>Disambiguating</prf:Keyboard>
        <prf:VoiceInputCapable>Yes</prf:VoiceInputCapable>
      </rdf:Description>
    </prf:component>

    <prf:component>
      <rdf:Description ID="TerminalSoftware">
        <rdf:type resource="http://www.wapforum.org/UAPROF/ccppschemat2000040519991014/#SoftwarePlatform" />
        <prf:Defaults rdf:resource="http://www.symbian.com/profiles/pda/epoc" />
        <!--Override VideoInputEncoder property and add JVMVersion property -->
        <prf:JVMVersion>
          <rdf:Bag>
            <rdf:_1>SunJRE1.2</rdf:_1>
            <rdf:_2>MSJVM1.0</rdf:_2>
          </rdf:Bag>
        </prf:JVMVersion>
        <prf:VideoInputEncoder>
          <rdf:Bag>
            <rdf:_1>Mpeg-1</rdf:_1>
            <rdf:_2>Mpeg-2</rdf:_2>
            <rdf:_3>Mpeg-4</rdf:_3>
          </rdf:Bag>
        </prf:VideoInputEncoder>
      </rdf:Description>
    </prf:component>

    <prf:component>
      <rdf:Description ID="UABrowserForPDA">
        <rdf:type resource="http://www.wapforum.org/UAPROF/ccppschemat2000040519991014/#BrowserUA" />
        <prf:Defaults rdf:resource="http://www.netscape.com/Navigator/4.5/PDA" />
        <!-- Add property regarding XHTML version and XHTML modules -->
        <prf:XHTMLVersion>1.0</prf:XHTMLVersion>
        <prf:XhtmlModules>
          <rdf:Bag>
            <rdf:_1>XHTML1-tables</rdf:_1>
            <rdf:_2>XHTML1-frames</rdf:_2>
          </rdf:Bag>
        </prf:XhtmlModules>
      </rdf:Description>
    </prf:component>
  </rdf:Description>
</rdf:RDF>
```

```

    </rdf:Description>
  </prf:component>

  <prf:component>
    <rdf:Description ID="SBCNetworkChar">
      <rdf:type resource="http://www.wapforum.org/UAPROF/ccppschem-
2000040519991014/#NetworkCharacteristics" />
      <prf:Defaults rdf:resource="http://www.sbcwireless.com/texas/profiles/sms-
service"/>
      <!-- no overrides. -->
    </rdf:Description>
  </prf:component>

  <prf:component>
    <rdf:Description ID="WapCharacteristics">
      <rdf:type resource="http://www.wapforum.org/UAPROF/ccppschem-
2000040519991014/#WAPCharacteristics" />
      <prf:Defaults rdf:resource="http://www.phone.com/PDA/WAP1.1" />
      <!--override WmlVersion property; no addition of
        new property descriptions -->
      <prf:WmlVersion>
        <rdf:Bag>
          <rdf:li>1.0</rdf:li>
        </rdf:Bag>
      </prf:WmlVersion>
    </rdf:Description>
  </prf:component>

</rdf:Description>
</rdf:RDF>

```

Hardware Platform: Defaults at <http://www.nokia.com/profiles/2160>

```

<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:prf="http://www.wapforum.org/UAPROF/ccppschem-2000040519991014#">
  <!--hardware vendor site: Default description of properties -->
  <rdf:Description>
    <prf:Vendor>Nokia</prf:Vendor>
    <prf:Model>2160</prf:Model>
    <prf:CPU>PPC650</prf:CPU>
    <prf:TextInputCapable>Yes</prf:TextInputCapable>
    <prf:ImageCapable>No</prf:ImageCapable>
    <prf:SoftKeysCapableNumberOfSoftKeys>Yes2 </prf:SoftKeysCapableNumberOfSoftKeys
>
    <prf:SoundOutputCapable>Yes</prf:SoundOutputCapable>
    <prf:PointingResolution>Pixel</prf:PointingResolution>
    <prf:ColorCapable>No</prf:ColorCapable>
    <prf:ScreenSize>600x400</prf:ScreenSize>
    <prf:ScreenSizeChar>12x4</prf:ScreenSizeChar>
    <prf:MaxScreenChar>48x32</prf:MaxScreenChar>
    <prf:InputCharSet>
      <rdf:Bag>
        <rdf:li>US-ASCII</rdf:li>
      </rdf:Bag>
    </prf:InputCharSet>
    <prf:BitsPerPixel>8</prf:BitsPerPixel>
    <prf:OutputCharSet>
      <rdf:Bag>
        <rdf:li>US-ASCII</rdf:li>

```

```

        <rdf:li>Shift_JIS</rdf:li>
    </rdf:Bag>
</prf:OutputCharSet>
</rdf:Description>
</rdf:RDF>

```

SoftwarePlatform Default properties at <http://www.symbian.com/profiles/pda/epoc>

```

<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:prf="http://www.wapforum.org/UAPROF/ccppschem-2000040519991014#">
  <!-- software vendor site: Default description of software properties -->
  <rdf:Description>
    <prf:OSVendor>Psion</prf:OSVendor>
    <prf:OSName>Epoc</prf:OSName>
    <prf:OSVersion>2.2</prf:OSVersion>
    <prf:AcceptDownloadableSoftware>No</prf:AcceptDownloadableSoftware>
    <prf:RecipientAgent>UABrowserForPDA</prf:RecipientAgent>
    <prf:Mexeclassmark>1</prf:Mexeclassmark>
    <prf:Mexespec>7.02</prf:Mexespec>
    <prf:SoftwareNumber>1</prf:SoftwareNumber>
    <prf:AudioInputEncoder>
      <rdf:Bag>
        <rdf:li>G.711</rdf:li>
        <rdf:li>G.931</rdf:li>
      </rdf:Bag>
    </prf:AudioInputEncoder>
    <prf:DownloadableSoftwareSupport>
      <rdf:Bag>
        <rdf:li>application/x-msdos-exe</rdf:li>
      </rdf:Bag>
    </prf:DownloadableSoftwareSupport>
    <prf:VideoInputEncoder>
      <rdf:Bag>
        <rdf:li>Mpeg-1</rdf:li>
        <rdf:li>Mpeg-2</rdf:li>
      </rdf:Bag>
    </prf:VideoInputEncoder>
  </rdf:Description>
</rdf:RDF>

```

Browser User Agent Default Properties at <http://www.netscape.com/Navigator/4.5/PDA>

```

<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:prf="http://www.wapforum.org/UAPROF/ccppschem-2000040519991014#">
  <!-- browser vendor site: Default description of properties -->
  <rdf:Description>
    <prf:BrowserName>Mozilla</prf:BrowserName>
    <prf:BrowserVersion>4.5</prf:BrowserVersion>
    <prf:HtmlVersion>4.0</prf:HtmlVersion>
    <prf:JavaScriptVersion>1.2</prf:JavaScriptVersion>
    <prf:FramesCapable>Yes</prf:FramesCapable>
    <prf:PreferenceForFrames>Yes</prf:PreferenceForFrames>
    <prf:TablesCapable>No</prf:TablesCapable>
    <prf:DownloadableBrowserApps>
      <rdf:Bag>
        <rdf:li>application/java-applet</rdf:li>
      </rdf:Bag>
    </prf:DownloadableBrowserApps>
    <prf:CcppAccept>

```

```

    <rdf:Bag>
      <rdf:li>text/plain</rdf:li>
      <rdf:li>text/x-wml</rdf:li>
    </rdf:Bag>
  </prf:CcppAccept>
  <prf:CcppAccept-Language>
    <rdf:Seq>
      <rdf:li>en</rdf:li>
      <rdf:li>fr</rdf:li>
    </rdf:Seq>
  </prf:CcppAccept-Language>
  <prf:CcppAccept-Encoding>
    <rdf:Bag>
      <rdf:li>base64</rdf:li>
      <rdf:li>quoted-printable</rdf:li>
    </rdf:Bag>
  </prf:CcppAccept-Encoding>
  <prf:CcppAccept-Charset>
    <rdf:Bag>
      <rdf:li>US-ASCII </rdf:li>
      <rdf:li>ISO-8859-1</rdf:li>
    </rdf:Bag>
  </prf:CcppAccept-Charset>
</rdf:Description>
</rdf:RDF>

```

Network characteristics located at Carrier web site: <http://www.sbcwireless.com/texas/profiles/sms-service>

```

<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:prf="http://www.wapforum.org/UAPROF/ccppschem-2000040519991014#">
  <!-- carrier site: Default description of Network related properties
    for SMS subscribers -->
  <rdf:Description>
    <prf:CurrentBearerService>SMS</prf:CurrentBearerService>
    <prf:SecuritySupport>PPTP</prf:SecuritySupport>
    <prf:SupportedBearers>
      <rdf:Bag>
        <rdf:li>SMS</rdf:li>
        <rdf:li>CDPD</rdf:li>
      </rdf:Bag>
    </prf:SupportedBearers>
  </rdf:Description>
</rdf:RDF>

```

WAP Default properties at <http://www.phone.com/PDA/WAP1.1>

```

<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:prf="http://www.wapforum.org/UAPROF/ccppschem-2000040519991014#">
  <!--WAP Browser vendor site: Default description of WAP properties -->
  <rdf:Description>
    <prf:WapVersion>1.1</prf:WapVersion>
    <prf:WmlDeckSize>1400</prf:WmlDeckSize>
    <prf:WapDeviceClass>A</prf:WapDeviceClass>
    <prf:WapPushMsgSize>1400 octets</prf:WapPushMsgSize>
    <prf:WapPushMsgPriority>all</prf:WapPushMsgPriority>
    <prf:WtaVersion>1.0</prf:WtaVersion>
    <prf:WmlScriptVersion>1.1</prf:WmlScriptVersion>
    <prf:WmlScriptLibraries>
      <rdf:Bag>

```

```
        <rdf:li>Float</rdf:li>
        <rdf:li>Dialogs</rdf:li>
        <rdf:li>URL</rdf:li>
    </rdf:Bag>
</prf:WmlscriptLibraries>
<prf:WtaiLibraries>
    <rdf:Bag>
        <rdf:li>WTAVoiceCall</rdf:li>
        <rdf:li>WTAIS136</rdf:li>
    </rdf:Bag>
</prf:WtaiLibraries>
<prf:WmlVersion>
    <rdf:Bag>
        <rdf:li>1.0</rdf:li>
        <rdf:li>1.1</rdf:li>
    </rdf:Bag>
</prf:WmlVersion>
</rdf:Description>
</rdf:RDF>
```

8.3.1.2 Core Vocabulary

The following tokens represent tags in code page one (1). All numbers are in hexadecimal.

<u>Tag Name</u>	<u>Token</u>
rdf:Description	6
rdf:Alt	7
rdf:Bag	8
rdf:Seq	9
rdf:li	A
rdf:type	B
prf:component	C
prf:Defaults	D
prf:BitsPerPixel	E
prf:ColorCapable	F
prf:CPU	10
prf:ImageCapable	11
prf:InputCharSet	12
prf:Keyboard	13
prf:MaxScreenChar	14
prf:Model	15
prf:OutputCharSet	16
prf:PointingResolution	17
prf:ScreenSize	18
prf:ScreenSizeChar	19
prf:SoftKeysCapable <u>prf:SoftKeysCapableNumberOfSoftKeys</u>	1A
prf:SoundOutputCapable	1B
prf:TextInputCapable	1C
prf:Vendor	1D
prf:VoiceInputCapable	1E
prf:AcceptDownloadableSoftware	1F

<u>Tag Name</u>	<u>Token</u>
prf:AudioInputEncoder	20
prf:DownloadableSoftwareSupport	21
prf:JVMVersion	23
prf:Mexeclassmark	24
prf:Mexespec	25
prf:OSName	26
prf:OSVendor	27
prf:OSVersion	28
prf:RecipientAppAgent	29
prf:SoftwareNumber	2A
prf:VideoInputEncoder	2B
prf:CurrentBearerService	2C
prf:SecuritySupport	2D
prf:SupportedBearers	2E
prf:WapDeviceClass	2F
prf:WapPushMsgPriority	30
prf:WapPushMsgSize	31
prf:WapVersion	32
prf:WmlDeckSize	33
prf:WmlScriptLibraries	34
prf:WmlScriptVersion	35
prf:WmlVersion	36
prf:WtailLibraries	37
prf:WtaVersion	38
<u>prf:PixelAspectRatio</u>	<u>39</u>
<u>prf:StandardFontProportional</u>	<u>40</u>

Table 8.3: Tag Tokens, Code Page 1

8.3.2.2 Core Vocabulary

The following tokens represent the start of an attribute in code page one (1). All numbers are in hexadecimal.

<u>Attribute Name</u>	<u>Attribute Value Prefix</u>	<u>Token</u>
rdf:resource		5
rdf:resource	http://www.wapforum.org/UAPROF/ccppschema-2000040519991014#Hardware	6

<u>Attribute Name</u>	<u>Attribute Value Prefix</u>	<u>Token</u>
	ePlatform	
rdf:resource	http://www.wapforum.org/UAPROF/ccppschema-2000040519991014#Software	7

<u>Attribute Name</u>	<u>Attribute Value Prefix</u>	<u>Token</u>
	ePlatform	
rdf:resource	http://www.wapforum.org/UAPROF/ccppschema-2000040519991014#NetworkCharacteristics	8
rdf:resource	http://www.wapforum.org/UAPROF/ccppschema-2000040519991014#WAPCharacteristics	9
rdf:resource	http://www.wapforum.org/UAPROF/ccppschema-2000040519991014#BrowserUA	A
prf:BitsPerPixel		10
prf:ColorCapable	Yes	11
prf:ColorCapable	No	12
prf:CPU		13
prf:ImageCapable	Yes	14
prf:ImageCapable	No	15
prf:InputCharSet		16
prf:Keyboard		17
prf:MaxScreenChar		18
prf:Model		19
prf:OutputCharSet		1A
prf:PointingResolution		1B
prf:ScreenSize		1C
prf:ScreenSizeChar		1D
prf: NumberOfSoftKeysSoftKeysCapable	Yes	1E
Prf:SoftKeysCapable	No	1F
prf:SoundOutputCapable	Yes	20
prf:SoundOutputCapable	No	21
prf:TextInputCapable	Yes	22

<u>Attribute Name</u>	<u>Attribute Value Prefix</u>	<u>Token</u>
e		
prf:TextInputCapable	No	23
prf:Vendor		24
prf:VoiceInputCapable	Yes	25
prf:VoiceInputCapable	No	26
prf:PixelAspectRatio		27
prf:StandardFontProportional	Yes	28
prf:StandardFontProportional	No	29
prf:AcceptDownloadableSoftware	Yes	30
prf:AcceptDownloadableSoftware	No	31
prf:AudioInputEncoder		32
prf:DownloadableSoftwareSupport		33
prf:JVMVersion		37
prf:Mexeclassmark		38
prf:Mexespec		39
prf:OSName		3A
prf:OSVendor		3B
prf:OSVersion		3C
prf:RecipientAppAgent		3D
prf:SoftwareNumber		3E
prf:VideoInputEncoder		3F
prf:CurrentBearerService		50
prf:SecuritySupport		51
prf:SupportedBearers		52
prf:WapDeviceClass		60
prf:WapPushMsgPriority		61
prf:WapPushMsgSize		62
prf:WapVersion		63

<u>Attribute Name</u>	<u>Attribute Value Prefix</u>	<u>Token</u>
prf:WmlDeckSize		64
prf:WmlScriptLibraries		65
prf:WmlScriptVersion		66

<u>Attribute Name</u>	<u>Attribute Value Prefix</u>	<u>Token</u>
prf:WmlVersion		67
prf:WtaiLibraries		68
prf:WtaVersion		69

Table 8.6: Attribute Start Tokens, Code Page 1

8.3.2.3 Browser User-Agent

The following tokens represent the start of an attribute in code page two (2). All numbers are in hexadecimal.

<u>Attribute Name</u>	<u>Attribute Value Prefix</u>	<u>Token</u>
prf:CcppAccept		5
prf:CcppAccept-Charset		6
prf:CcppAccept-Encoding		7
prf:CcppAccept-Language		8
prf:DownloadableBrowserApps		9
prf:FramesCapable	Yes	A
prf:FramesCapable	No	B
prf:HtmlVersion	3.2	C
prf:HtmlVersion	4.0	D
prf:JavaScriptVersion		12
prf:PreferenceForFrames	Yes	13
prf:PreferenceForFrames	No	14
prf:TablesCapable	Yes	15
prf:TablesCapable	No	16
prf:XhtmlVersion		17
prf:XhtmlModules		18
<u>prf:BrowserName</u>		<u>19</u>
<u>prf:BrowserVersion</u>		<u>1A</u>

Table 8.7: Attribute Start Tokens, Code Page 2

A.1 Summary of User Agent Profile Schema

The table below summarizes the components and attributes defined within the WAP User Agent Profile schema (see Section 7.5). This section is informative.

<u>Attribute</u>	<u>Description</u>	<u>Resolution Rule</u>	<u>Type</u>	<u>Sample Values</u>
Component: HardwarePlatform				
BitsPerPixel	The number of bits of color or grayscale information per pixel	Override	Number	"2", "8"
ColorCapable	whether the device display supports color	Override	Boolean	"Yes", "No"

CPU	Name and model number of device CPU	Locked	Literal	"Pentium III", "PowerPC 750"
ImageCapable	Whether the device supports the display of images	Locked	Boolean	"Yes", "No"
InputCharSet	List of character sets supported by the device for text entry	Locked	Literal (bag)	"US-ASCII", "ISO-8859-1", "Shift_JIS"
Keyboard	Type of keyboard supported by the device	Locked	Literal	"Disambiguating", "Qwerty", "PhoneKeypad"
MaxScreenChar	Size of the virtual page onto which a document is rendered, in units of characters	Locked	Dimension	"16x80", "48x32"
Model	Model number assigned to the terminal device by the vendor or manufacturer	Locked	Literal	"Mustang GT", "Q30"
<u>NumberOfSoftKeys</u>	<u>Number of soft keys available on the device.</u>	<u>Locked</u>	<u>Number</u>	<u>"3", "2"</u>
OutputCharSet	List of character sets supported by the device for output to the display	Append	Literal (bag)	"US-ASCII", "ISO-8859-1", "Shift_JIS"
<u>PixelAspectRatio</u>	<u>Ratio of pixel width to pixel height</u>	<u>Locked</u>	<u>Dimension</u>	<u>"1x2"</u>
PointingResolution	Type of resolution of the pointing accessory supported by the device	Locked	Literal	"Character", "Line", "Pixel"
ScreenSize	The size of the device's screen in units of pixels	Locked	Dimension	"160x160", "640x480"
ScreenSizeChar	Size of the device's screen in units of characters	Locked	Dimension	"12x4", "16x8"
SoftKeysCapable	Indicates whether the device supports programmable soft keys	Locked	Boolean	"Yes", "No"
SoundOutputCapable	Indicates whether the device supports sound output	Locked	Boolean	"Yes", "No"
<u>StandardFontProportional</u>	<u>Indicates whether the device's standard font is proportional</u>	<u>Locked</u>	<u>Boolean</u>	<u>"Yes", "No"</u>
TextInputCapable	Indicates whether the device supports alpha-numeric text entry	Locked	Boolean	"Yes", "No"
Vendor	Name of the vendor manufacturing the terminal device	Locked	Literal	"Ford", "Lexus"
VoiceInputCapable	Indicates whether the device supports any form of voice input, including speech recognition	Locked	Boolean	"Yes", "No"

Component: SoftwarePlatform				
AcceptDownloadableSoftware	Indicates the user's preference on whether to accept downloadable software	Locked	Boolean	"Yes", "No"
AudioInputEncoder	List of audio input encoders supported by the device	Append	Literal (bag)	"G.711", "G.931"
DownloadableSoftwareSupport	List of executable content types which the device supports and which it is willing to accept from the network	Locked	Literal (bag)	"application/x-msdos-exe"
JVMVersion	List of the Java virtual machines installed on the device	Append	Literal (bag)	"SunJRE1.2", "MSJVM1.0"
Mexeclassmark	ETSI MExE classmark	Locked	Number	"1", "2"
Mexespec	Class mark specialization	Locked	Literal	"7.02"
OSName	Name of the device's operating system	Locked	Literal	"Mac OS", "Windows NT"
OSVendor	Vendor of the device's operating system	Locked	Literal	"Apple", "Microsoft"
OSVersion	Version of the device's operating system	Locked	Literal	"6.0", "4.5"
RecipientAppAgent	User agent associated with the current request	Locked	Literal	"SpeedyMail"
SoftwareNumber	Version of the device-specific software (firmware) to which the device's low-level software conforms	Locked	Literal	"2"
VideoInputEncoder	List of video input encoders supported by the device	Append	Literal (bag)	"MPEG-1", "MPEG-2", "H.261"
Component: NetworkCharacteristics				
CurrentBearerService	The bearer on which the current session was opened	Locked	Literal	"OneWaySMS", "GUTS", "TwoWayPacket"
SecuritySupport	Type of security or encryption mechanism supported	Locked	Literal	"PPTP"
SupportedBearers	List of bearers supported by the device	Locked	Literal (bag)	"GPRS", "GUTS", "TwowaySMS", "CSD", "USSD"
Component: BrowserUA				
BrowserName	Name of the browser user agent associated with the	Locked	Literal	"Mozilla", "MSIE"

	current request			
BrowserVersion	Version of the browser	Locked	Literal	"1.0"
CcspAccept	List of content types the device supports	Append	Literal (bag)	"text/html", "text/plain", "text/html", "image/gif"
CcspAccept-Charset	List of character sets the device supports	Append	Literal (bag)	"US-ASCII", "ISO-8859-1", "Shift_JIS"
CcspAccept-Encoding	List of transfer encodings the device supports	Append	Literal (bag)	"base64", "quoted-printable"
CcspAccept-Language	List of preferred document languages	Append	Literal (sequence)	"zh-CN", "en", "fr"
DownloadableBrowseApps	List of executable content types which the browser supports and which it is willing to accept from the network	Append	Literal (bag)	"application/ava-applet" "application/javascript"
FramesCapable	Indicates whether the browser is capable of displaying HTML frames	Override	Boolean	"Yes", "No"
HtmlVersion	Version of HyperText Markup Language (HTML) supported by the browser	Locked	Literal	"2.0", "3.2", "4.0"
JavaScriptVersion	Version of the JavaScript language supported by the browser	Locked	Literal	"1.4"
PreferenceForFrames	Indicates the user's preference for receiving HTML content that contains frames	Locked	Boolean	"Yes", "No"
TablesCapable	Indicates whether the browser is capable of displaying HTML tables	Locked	Boolean	"Yes", "No"
XhtmlVersion	Version of XHTML supported by the browser	Locked	Literal	"1.0"
XhtmlModules	List of XHTML modules supported by the browser	Append	Literal	"XHTML1-struct", "XHTML1-blkstruct", "XHTML1-frames"
Component: WapCharacteristics				
WapDeviceClass	Classification of the device based on capabilities as identified in the WAP 1.1 specifications	Locked	Literal	"A"
WapPushMsgPriority	User's preference on the priority of incoming push messages	Locked	Literal	"critical", "low", "none", "all"

WapPushMsgSize	Maximum size of a push message that the device can handle	Locked	Number	"1024", "1400"
WapVersion	Version of WAP supported	Locked	Literal	"1.1", "1.2", "2.0"
WmlDeckSize	Maximum size of a WML deck that can be downloaded to the device	Locked	Number	"4096"
WmlScriptLibraries	List of mandatory and optional libraries supported in the device's WMLScript VM	Locked	Literal (bag)	"Lang", "Float", "String", "URL", "WMLBrowser", "Dialogs"
WmlScriptVersion	List of WMLScript version numbers supported by the device	Append	Literal (bag)	"1.1", "1.2"
WmlVersion	List of WML language version numbers supported by the device	Append	Literal (bag)	"1.1", "1.0"
WtaiLibraries	List of WTAI network common and network specific libraries supported by the device that are URI accessible	Locked	Literal (bag)	"WTAVoiceCall", "WTANetText", "WTAPhoneBook", "WTACallLog", "WTAMisc", "WTAGSM", "WTAIS136", "WTAPDC"
WtaVersion	Version of WTA user agent	Locked	Literal	"1.1"

8 Addition of an attribute to identify applications supported by the client device

8.1 Change Classification

1 – Correction	[]
2 – Addition of Feature	[X]
3 – Functional modification of Feature	[]
4-Editorial Modification	[]

8.2 Change Summary

Addition of an attribute to identify the applications supported by the client device. The identifiers for these applications are registered with WINA and used by the Push framework to address the application for push delivery on the client..

8.3 Change

7.5 User Agent Profile Schema and Base Vocabulary

[...]

<rdf:Description ID="WtaVersion">

```

<rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
<rdfs:domain rdf:resource="#WapCharacteristics"/>
<rdfs:comment>
Description: Version of WTA user agent.
Type: Literal
Resolution: Locked
Examples: "1.1"
</rdfs:comment>
</rdf:Description>

```

```

<rdf:Description ID="WapSupportedApplications">
<rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Property"/>
<rdf:type rdf:resource="http://www.w3.org/TR/PR-rdf-schema#Bag"/>
<rdfs:domain rdf:resource="#WapCharacteristics"/>
<rdfs:comment>
Description: List of applications supported by the WAP device that are accessible using
the push application addressing framework. Each value is a URI and represents an
application identifier which may be registered with WINA.
Type: Literal
Resolution: Locked
Examples: "urn:x-wap-application:push.sia", "urn:x-wap-application:wml.ua",
"urn:x-wap-application:wta.ua"
</rdfs:comment>
</rdf:Description>
</rdf:RDF>

```

7.6 Profile Example in RDF

[...]

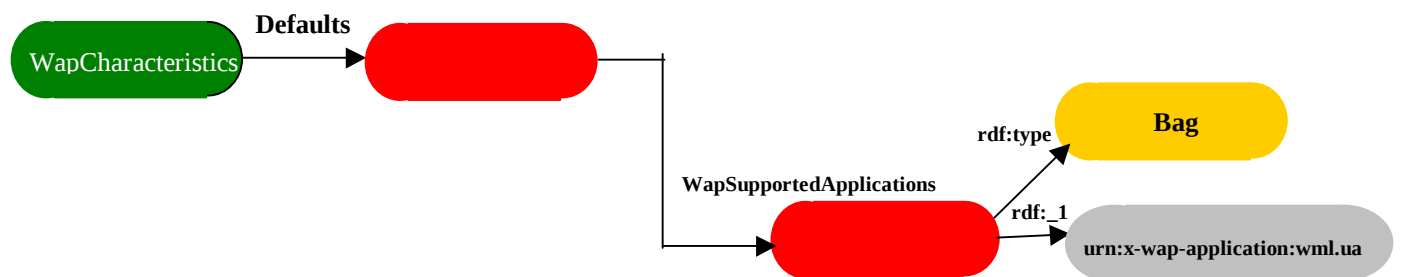


Figure 7.3: Sub-graph for WAP Characteristics

[...]

WAP Default properties at <http://www.phone.com/PDA/WAP1.1>

```

<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"

```

```

xmlns:prf="http://www.wapforum.org/UAPROF/ccppschema-2000040519991014#">
<!--WAP Browser vendor site: Default description of WAP properties -->
  <prf:WapVersion>1.1</prf:WapVersion><rdf:Description>
    <prf:WmlDeckSize>1400</prf:WmlDeckSize>
    <prf:WapDeviceClass>A</prf:WapDeviceClass>
    <prf:WapPushMsgSize>1400 octets</prf:WapPushMsgSize>
    <prf:WapPushMsgPriority>all</prf:WapPushMsgPriority>
    <prf:WtaVersion>1.0</prf:WtaVersion>
    <prf:WmlScriptVersion>1.1</prf:WmlScriptVersion>
    <prf:WmlscriptLibraries>
      <rdf:Bag>
        <rdf:li>Float</rdf:li>
        <rdf:li>Dialogs</rdf:li>
        <rdf:li>URL</rdf:li>
      </rdf:Bag>
    </prf:WmlscriptLibraries>
    <prf:WtailLibraries>
      <rdf:Bag>
        <rdf:li>WTAVoiceCall</rdf:li>
        <rdf:li>WTAIS136</rdf:li>
      </rdf:Bag>
    </prf:WtailLibraries>
    <prf:WmlVersion>
      <rdf:Bag>
        <rdf:li>1.0</rdf:li>
        <rdf:li>1.1</rdf:li>
      </rdf:Bag>
    </prf:WmlVersion>
    <prf:WapSupportedApplications>
      <rdf:Bag>
        <rdf:li> urn:x-wap-application:wml.ua </rdf:li>
      </rdf:Bag>
    </prf:WapSupportedApplications>
  </rdf:Description>
</rdf:RDF>

```

8.2 Encoding Semantics

[...]

Tag Name	Token
Prf:InputCharSet	12
Prf:Keyboard	13
Prf:MaxScreenChar	14
Prf:Model	15
Prf:OutputCharSet	16
Prf:PointingResolution	17
Prf:ScreenSize	18
Prf:ScreenSizeChar	19
Prf:NumberOfSoftKeys	1A

Tag Name	Token
prf:OSName	26
prf:OSVendor	27
prf:OSVersion	28
prf:RecipientAppAgent	29
prf:SoftwareNumber	2A
prf:VideoInputEncoder	2B
prf:CurrentBearerService	2C
prf:SecuritySupport	2D
prf:SupportedBearers	2E

Prf:SoundOutputCapable	1B	prf:WapDeviceClass	2F
Prf:TextInputCapable	1C	prf:WapPushMsgPriority	30
Prf:Vendor	1D	prf:WapPushMsgSize	31
Prf:VoiceInputCapable	1E	prf:WapVersion	32
Prf:AcceptDownloadableSoftware	1F	prf:WmlDeckSize	33
Prf:AudioInputEncoder	20	prf:WmlScriptLibraries	34
Prf:DownloadableSoftwareSupport	21	prf:WmlScriptVersion	35
Prf:JVMVersion	23	prf:WmlVersion	36
Prf:Mexeclassmark	24	prf:WmlLibraries	37
Prf:Mexespec	25	prf:WtaVersion	38
		prf:PixelAspectRatio	39
		prf:StandardFontProportional	40
		<u>prf:WapSupportedApplications</u>	<u>41</u>

Table 8.3: Tag Tokens, Code Page 1

8.3.2.2 Core Vocabulary

[...]

Attribute Name	Attribute Value Prefix	Token
<u>Prf:WapSupportedApplications</u>		70

Table 8.6: Attribute Start Tokens, Code Page 1

A.1 Summary of User Agent Profile Schema

[...]

<u>Attribute</u>	<u>Description</u>	<u>Resolution Rule</u>	<u>Type</u>	<u>Sample Values</u>
Component : WapCharacteristics				
WtaVersion	Version of WTA User Agent	Locked	Literal	"1.1"
<u>WapSupportedApplications</u>	<u>List of application supported by the WAP device that are accessible using the push application addressing framework. Each value is a URI and represents an application identifier which may be registered with WINA.</u>	<u>Locked</u>	<u>Literal</u>	<u>"urn:x-wap-application:wml.ua"</u>

[...]