WAP General Formats Document

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Wireless Application Protocol
General Formats Document

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1. Scope

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 providing new 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*" [WAP].

This document defines a number of common formats that are used throughout the WAP specifications. Defining these formats in one document means that their use will be consistent throughout the specification, and simplifies the updating of formats.

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3. References

3.1 Normative references

[EBNF] W3C, “REC-xml-19980210: Extensible Mark-up Language (xml) 1.0”, February 10, 1998

[GSM02.90] ETSI European Digital Cellular Telecommunication Systems (phase 2): Unstructured Supplementary Service Data (USSD) - stage 1 (GSM 02.90)

[GSM03.03] "Digital cellular telecommunications system (Phase 2+); Numbering, addressing and identification", (GSM 03.03 version 7.3.0 Release 1998)

[ITU-T Q.23] “ITU-T Recommendation Q.23: Technical Features of Push-Button Telephone Sets”, Copyright ITU 1988, 1993

[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, R. Fielding, L. Masinter, et al., August 1998. URL: http://www.ietf.org/rfc/rfc2396.txt

3.2 Informative references

[ITUE164] “The International Public Telecommunication Numbering Plan”, ITU-T Recommendation E.164, May 1997

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4. Definitions and Abbreviations

All non-trivial abbreviations and definitions used in this document are listed in the following sections. The definition section includes description of general concepts that may be fully defined in other documents. The purpose of this section is to advise the reader on the terminology used in the document.

4.1 Definitions

The following are terms and conventions used throughout this specification.

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 by [RFC2119].

4.2 Abbreviations

For the purposes of this specification, the following abbreviations apply.

EBNF	Extended Backus-Naur Form
DTMF	Dual Tone Multi-Frequency
WAP	Wireless Application Protocol

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5. Introduction

This document provides definitions of various formats that are used repeatedly throughout the WAP specifications. Specifying all these formats in one place makes the specifications clearer, more consistent and simplifies updating these formats.

To date, the only formats specified within this document are telephone numbers, DTMF sequences, and address strings (all specified in section 6.1).

In the future other formats may be added.

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6. Formats definition

This chapter contains the actual definitions of the various general formats.

6.1 Syntax Definitions

This section defines a general format for telephone numbers, DTMF-sequences, dial strings, and address strings. The format is given using EBNF [EBNF]. EBNF reserves the hyphen character and does not capitalize non-terminal variables by convention. These rules are followed in the syntax definitions below. Outside of this specification, however, one may refer to variables using capital letters and with hyphens instead of underscores unambiguously, as these devices are not used to distinguish between variables in the definitions.

```
address_string     ::=  ( phone_number | dtmf_sequence | pause )* |
                        <GPRS_APN> | ss_string

phone_number       ::=  international_phone_number | national_phone_number

international_phone_number ::= global_international_phone_number |
                        local_international_phone_number

global_international_phone_number ::=
                        global_international_extension
                        national_phone_number

global_international_extension ::= "+" country_code

country_code       ::=  <one element of the country code list>

local_international_phone_number ::=
                        local_international_extension national_phone_number

local_international_extension ::= DIGIT+ country_code

DIGIT              ::=  "0" | "1" | "2" | "3" | "4" |
                        "5" | "6" | "7" | "8" | "9"

national_phone_number ::= DIGIT+

dtmf_sequence      ::=  dtmf_digit+

dtmf_digit         ::=  DIGIT | "*" | "#" | "A" | "B" | "C" | "D"

pause              ::=  one_second_pause

one_second_pause   ::=  ","

ss_string          ::=  service_code supplementary_information

service_code       ::=  start sc

start              ::=  START_DIGIT? | START_DIGIT START_DIGIT |
                        START_DIGIT START_DIGIT START_DIGIT

START_DIGIT        ::=  "*" | "#"

sc                 ::=  DIGIT DIGIT | DIGIT DIGIT DIGIT

supplementary_information ::= "#" | si_list "#"

si_list            ::=  si | si si | si si si

si                 ::=  "*" | "*" si_element
```

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```
si_element          ::=  <directory number> | <basic service group> |
                         <no reply condition timer> | <uus required option>
                         | <password>

dialstring          ::=  pause* ( phone_number | dtmf_sequence )
                         ( pause | phone_number | dtmf_sequence )*

tone_sequence       ::=  ( pause | dtmf_sequence )*
```

Notes:

1. The definition of GPRS_APN can be found in [GSM03.03].
2. In the definition of “country_code”: “one element of the country code list” is left undefined in this document.
3. In the definition of “si_element”: “directory number”, “basic service group”, “no reply condition timer”, “uus required option”, and “password” are left undefined in this document.
4. DTMF digits and characters in a “dtmf_sequence” correspond to the digits and characters along with their associated frequency pairs as defined in [ITU-T Q.23].

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Appendix A Specification-track Document History

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August, 2000	WAP-188_100
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