Language Manual

HQ Greek

Language Manual – HQ Greek

This document was produced by Acapela Group. We welcome and consider all comments and suggestions. Please send them to:

Acapela Group
Box 1328
SE - 171 26 Solna
Sweden
Tel. +46 (0) 8 799 86 00
Fax. +46 (0) 8 799 86 01

Acapela Group
33, Boulevard Dolez
7000 Mons
Belgium
Tel. +32 (0)65 37 42 75
Fax. +32 (0)65 37 42 76

Acapela Group
Immeuble Les Erables
Rue du Lac
BP 98153
31681 Labège Cedex
Tel. +33 (0)5 62 24 71 00
Fax. +33 (0)5 62 24 71 01

http://www.acapela-group.com
Published 17 March 2011

List of Contents

List of Tables

Chapter 1. General

This document discusses certain aspects of text-to-speech processing for the Greek text-to-speech system, in particular the different types of input characters and text that are allowed.

This version of the document corresponds to the High Quality (HQ) voice Dimitris.

Please note that the *User's Guide*, mentioned several times in the manual, is called *Help* in some applications.

Note: For efficiency reasons, the processing described in this document has a different behaviour in some Acapela Group products. Those products are:

- Acapela TTS for Windows Mobile
- Acapela TTS for Linux Embedded
- Acapela TTS for Symbian

For these products, the default processing of numbers, phone numbers, dates and times has been simplified for the low memory footprint (LF) voice formats. Developers have the possibility to change the default behaviour from simplified to normal preprocessing by setting corresponding parameters in the configuration file of the voice. Please see the documentation of these products for more information.
In the following chapters, each simplification will be described by the indication *[not SP]* following the description of the standard behaviour. The SP in the indication stands for *Simplified Processing*.

Chapter 2. Letters in orthographic text

Characters from A-Ω and α-ω may constitute a word. Other characters from A-Z and a-z are also considered as letters. Words containing these Latin characters are pronounced as English words by default.

Characters outside of these ranges (i.e. numbers, punctuation characters and other non-alphanumeric characters) are not considered as letters.

Chapter 3. Punctuation characters

Punctuation marks appearing in a text affect both the rhythm and the intonation of a sentence. The following punctuation characters are permitted in the normal input text string:

, : “ ” «» . ? ; ! ( ) { } [ ]

3.1. Comma, colon and “*ano teleia*”

Comma ‘,’, colon ‘*:*’ and *ano teleia* ‘·’ cause a brief pause to occur in a sentence, accompanied by a small rising intonation pattern just prior to the character.

3.2. Quotation marks

Quotes ‘ “ “ ’ and ‘«»‘ appearing around a single word or a group of words cause a brief pause before and after the quoted text.

3.3. Full stop

A full stop ‘.’ is a sentence terminal punctuation mark which causes a falling end-of-sentence intonation pattern and is accompanied by a somewhat longer pause. A full stop may also be used as a decimal marker in a number (see chapter *Number processing*) and in abbreviations (see chapter *Abbreviations*).

3.4. Question mark

A question mark ‘*?*’ or ‘;’ ends a sentence and causes a question intonation, first rising and then falling.

3.5. Exclamation mark

The exclamation mark ‘!’ behaves in a similar manner to the full stop, causing a falling intonation pattern followed by a pause.

3.6. Parentheses, brackets and braces

Parentheses ‘()’, brackets ‘[]’, and braces ‘{}’ appearing around a single word or a group of words cause a brief pause before and after the bracketed text

.

Chapter 4. Other non alphanumeric characters

4.1. Non-punctuation characters

The characters listed below are processed as non-letter, non-punctuation characters. Some are pronounced at all times and others are only pronounced in certain contexts, which are described in the following sections of this chapter.

Table 4.1. Non-punctuation characters

Symbol	Reading
/	(see below)
\	ανάποδη κάθετος
+	συν
$	δολάριο
€	ευρώ
<	μικρότερο από
>	μεγαλύτερο από
%	τοις εκατό
^	σιρκονφλέξ
|	κάθετος
~	περισπωμένη
@	παπάκι
=	ίσον
-	(see below)
*	(see below)

4.2. Symbols whose pronunciation varies depending on the context

4.2.1. Hyphen

A hyphen '-' is pronounced *πλην* in two cases:

1. if followed by a digit and no other digit is found in front of the hyphen, i.e. as in the pattern -X but not in X-Y or X -Z where X, Y, and Z are numbers.
2. if followed by a digit and an equals sign, '=', i.e. as in the pattern X-Y=Z. Spaces are allowed between digits, hyphen and equals sign.

If there is no equals sign '=', as in X-Y or X -Z, the hyphen is pronounced "παύλα".

In certain date formats, in between days or years, the hyphen is pronounced "έως (τις, το)" (depending on the context). In other cases the hyphen is not pronounced.

Expression	Reading
-3	πλην τρία
44-3	σαράντα τέσσερα παύλα τρία
44-3=41	σαράντα τέσσερα πλην τρία ίσον σαράντα ένα
1998-2004	χίλια εννιακόσια ενενήντα οκτώ έως το δύο χιλιάδες τέσσερα
10-12 Απριλίου	δέκα έως δώδεκα Απριλίου

10/04/98 - 12/04/98	από τις δέκα Απριλίου του χίλια εννιακόσια ενενήντα οκτώ έως τις δώδεκα Απριλίου του χίλια εννιακόσια ενενήντα οκτώ [*not SP*]
παιδί-θαύμα	παιδί θαύμα
γυναίκα-δηλητήριο	γυναίκα δηλητήριο

4.2.2. Asterisk

Asterisk '*' is only pronounced *επί* if it is part of a mathematical expression containing an equals sign ("="). The expression may contain spaces. In other cases it is pronounced *αστερίσκος*.

Expression	**Reading**
2*3	δύο αστερίσκος τρία
2*3=6	δύο επί τρία ίσον έξι
*bc	αστερίσκος b c

4.2.3. Slash

The slash sign "/" is read δια if the input matches the pattern X/Y=Z. If the pattern is X/Y, the expression is read as a fraction. In certain date formats, where "/" is the delimiter between parts of the date, it is not pronounced. In other cases it is read κάθετος.

Expression	**Reading**
6/2=3	έξι δια δύο ίσον τρία
2/3	δύο τρίτα
10/02/2000	δέκα Φεβρουαρίου του δύο χιλιάδες
http://acapela-group.com	h t t p άνω κάτω τελεία κάθετος κάθετος acapela παύλα group τελεία com
cb/bc	c b κάθετος b c

Chapter 5. Number Processing

Note:

The number processing described in this chapter doesn't apply to all the Acapela Group products. For efficiency reasons the processing of numbers, phone numbers, dates and time has been simplified in the Acapela Mobility products.

Strings of digits that are sent to the text-to-speech converter are processed in several different ways, depending on the format of the string of digits and the immediately surrounding punctuation or non-numeric characters. To familiarize the user with the various types of formatted and non-formatted strings of digits that are recognized by the system, a brief description of the basic number processing is provided below, along with examples.

Number processing is subdivided into the following categories:

Full number pronunciation

Leading zero

Decimal numbers

Currency amounts

Ordinal numbers

Arithmetical operators

Mixed digits and letters

Time of day

Dates

Phone numbers

5.1. Full number pronunciation

Full number pronunciation is given for the whole number part of the digit string.

Example	
2425	full number
2.425	full number
2 425	full number
24,25	24 is a full number, 25 is the decimal part

Numbers denoting thousands, millions and billions (numbers larger than 999) may be grouped using space or full stop (not comma). In order to achieve the right pronunciation the grouping must be done correctly.

The rules for grouping of numbers are the following:

- Numbers are grouped in groups of three starting at the end.
- The first group in a number may consist of one, two, or three digits.
- If a group, other than the first, does not contain exactly three digits, the sequence of digits is not interpreted as a full number.

- The highest number read is *999999999999* (twelve digits). Numbers higher than this are read as separate digits.

Number	Reading
2580	δύο χιλιάδες πεντακόσια ογδόντα
2 580	“
2.580	“
25800	εικοσιπέντε χιλιάδες οκτακόσια
25 800	“
25.800	“
2580350	δύο εκατομμύρια πεντακόσιες ογδόντα χιλιάδες τριακόσια πενήντα
2 580 350	“
2.580.350	“
1000000000	ένα δισεκατομμύριο
234 567 890 123	ιακόσια τριάντα τέσσερα δισεκατομμύρια πεντακόσια εξήντα επτά εκατομμύρια οκτακόσιες ενενήντα χιλιάδες εκατόν είκοσι τρία
1234567890123	ένα δύο τρία τέσσερα πέντε έξι επτά οκτώ εννέα μηδέν ένα δύο τρία

5.2. Leading zero

Numbers that begin with *0* (zero) are read as a whole number, with a zero preceding it.

Number	Reading
09253	μηδέν εννέα χιλιάδες διακόσια πενήντα τρία
020	μηδέν είκοσι

5.3. Decimal numbers

Comma is used when writing decimal numbers. However, the system also manages decimals written with full stop, as long as the format cannot be interpreted as a full number. I.e., a number containing a full stop followed by exactly three digits is not read as a decimal number but as a full number, following the rules in the section *Full number pronunciation*.

The full number part of the decimal number (the part before comma or full stop) is read according to the rules in the section *Full number pronunciation.* The decimal part (the part after comma or full stop) is also read as a full number.

Number	Reading
2,50	δύο κόμμα πενήντα
2.50	δύο κόμμα πενήντα
3,141	τρία κόμμα εκατόν σαράντα ένα
3,1415	τρία κόμμα χίλια τετρακόσια δεκαπέντε
1251,04	χίλια διακόσια πενήντα ένα κόμμα μηδέν τέσσερα
1.251,04	χίλια διακόσια πενήντα ένα κόμμα μηδέν τέσσερα

5.4. Currency amounts

The following principles are followed for currency amounts:

- Numbers with zero or two decimal places preceded or followed by the currency markers *$, €, £,* are read as currency amounts.
- *[not SP]* Numbers with zero or two decimal places preceded or followed by the currency abbreviations *USD, EUR, GBP, CHF, NOK, SEK, CYP*
- Accepted decimal markers are comma ‘,’ and full stop ‘.’.
- The decimal part (consisting of two digits) in currency amounts is read as *και xx σεντ, και xx πένες* or *και* xx όρε.
- If the decimal part is *00* it will not be read.

Example	**Reading**
£ 20	είκοσι λίρες Αγγλίας
$15.00	δεκαπέντε δολάρια
15.00 $	δεκαπέντε δολάρια
15,00 EUR	δεκαπέντε ευρώ *[not SP]*
15,50 CYP	δεκαπέντε κυπριακές λίρες και πενήντα σεντ *[not SP]*
€ 200.50	διακόσια ευρώ και πενήντα σεντ
1.000.000 GBP	ένα εκατομμύριο λίρες Αγγλίας *[not SP]*

There is also the possibility of writing large amounts as follows:

€ 1 εκατομμύριο	ένα εκατομμύριο ευρώ

5.5. Ordinal numbers *[not SP]*

Numbers are read as ordinals in the following case:

- A number is followed by one of the following endings: ο, ος, ον, οι, ου, ους, ων, η, ης, ην, ες, α, ό, ός, όν, ού, ούς, οί, ών, ή, ής, ήν, ές, ά.

Expression	**Reading**
3ος	τρίτος
3ων	τρίτον
3α	τρίτα
3όν	τρίτον
3ές	τρίτες

Compound adjectives with a number in the first part are also expanded:

20χρονη	εικοσάχρονη

5.6. Arithmetical operators

Numbers together with arithmetical operators are read according to the examples below.

Expression	**Reading**
-12	πλην δώδεκα
+24	συν είκοσι τέσσερα
14-2	δεκατέσσερα παύλα δύο
14-2=12	δεκατέσσερα πλην δύο ίσον δώδεκα

2+3	δύο συν τρία
2+3=5	δύο συν τρία ίσον πέντε
2*3	δύο αστερίσκος τρία
2*3=6	δύο επί τρία ίσον έξι
2/3	δύο τρίτα
6/3=2	έξι δια τρία ίσον δύο
25%	είκοσι πέντε τοις εκατό
3.4%	τρία κόμμα τέσσερα τοις εκατό
3,4%	τρία κόμμα τέσσερα τοις εκατό

5.7. Mixed digits and letters

If a letter appears within a sequence of digits, the groups of digits will be read as numbers according to the rules above. The letter marks the boundary between the numbers. The letter will also be read.

Expression	**Reading**
77B84D3	εβδομήντα επτά Β ογδόντα τέσσερα D τρία
0092B87-B	μηδέν μηδέν ενενήντα δύο Β ογδόντα επτά Β
0092Γ87-Γ	μηδέν μηδέν ενενήντα δύο γάμμα ογδόντα επτά
γάμμα	

5.8. Time of day

The colon and full stop are used to separate hours, minutes and seconds. If the full stop is used, the words *η ώρα* must be present after the time format for it to be recognized as such.

Possible patterns are:

a) hh:mm (or h:mm)

b) hh:mm:ss (or h:mm:ss)

c) hh.mm η ώρα *[not SP]*

h = hour, m = minute, s = second.

In patterns a and b:

The word και will be inserted between the hours and minutes, the word λεπτά will be inserted after the mm-part.

If there are seconds, the word και will be inserted before the ss-part and the word δευτερόλεπτα will be inserted after it.

In pattern c: *[not SP]*

The word και will be inserted between the hours and minutes, the words η ώρα will be inserted after the mm-part.

Expression	**Reading**
9:30	εννέα και τριάντα λεπτά
9:30:20	εννέα και τριάντα λεπτά και είκοσι δευτερόλεπτα
9:00	εννέα και μηδέν λεπτά
9.30 η ώρα	εννέα και τριάντα η ώρα *[not SP]*

5.9. Dates

The valid formats for dates are:

1. dd.mm.yyyy and dd/mm/yyyy
2. dd.mm.yy and dd/mm/yy

yyyy is a four-digit number, *yy* is a two-digit number, mm is a month number between 1 and 12, and *dd* is a day number between 1 and 31. Full stop and slash may be used as delimiters. In all formats, one or two digits may be used in the *mm* and *dd*-part. Zeros may be used in front of numbers below 10.

Examples of valid formats and their readings:

Type 1:				
10.02.2003	or	10.2.2003	δέκα Φεβρουαρίου του δύο χιλιάδες τρία	
10/02/2003	or	10/2/2003	"	
Type 2:				
10.02.03	or	10.2.03	δέκα Φεβρουαρίου του δύο χιλιάδες τρία	*[not SP]*
10/02/03	or	10/2/03	"	

Ranges of years and dates are also supported. *[not SP]*

Expression	**Reading**
1998-1999	χίλια εννιακόσια ενενήντα οκτώ έως το χίλια εννιακόσια ενενήντα εννέα
1939-45	χίλια εννιακόσια τριάντα εννέα έως το σαράντα πέντε
7-8.02.2007	επτά έως οκτώ Φεβρουαρίου δύο χιλιάδες επτά
7-8/02/2007	επτά έως οκτώ Φεβρουαρίου δύο χιλιάδες επτά
10/04/98 - 12/04/98	από τις δέκα Απριλίου του χίλια εννιακόσια ενενήντα οκτώ έως τις δώδεκα Απριλίου του χίλια εννιακόσια ενενήντα οκτώ

Other possible formats include:

Expression	**Reading**
Τρίτη, 10 Απριλίου 1998	τρίτη δέκα Απριλίου χίλια εννιακόσια ενενήντα οκτώ
Τρίτη 10 του Απριλίου 1998	τρίτη δέκα του Απριλίου χίλια εννιακόσια ενενήντα οκτώ
Τρίτη 10 Απριλίου	τρίτη δέκα Απριλίου
Τρίτη, 10 του Απριλίου	τρίτη δέκα του Απριλίου
10 Απριλίου 1998	δέκα Απριλίου χίλια εννιακόσια ενενήντα οκτώ
10 του Απριλίου 1998	δέκα του Απριλίου χίλια εννιακόσια ενενήντα οκτώ
σεπτ. 1998	Σεπτεμβρίου χίλια εννιακόσια ενενήντα οκτώ
10-12 Απριλίου	δέκα έως δώδεκα Απριλίου *[not SP]*
10-12 Απριλίου 1998	δέκα έως δώδεκα Απριλίου χίλια εννιακόσια ενενήντα οκτώ *[not SP]*
10-12 του Απριλίου	δέκα έως δώδεκα του Απριλίου *[not SP]*
10-12 του Απριλίου 1998	δέκα έως δώδεκα του Απριλίου χίλια εννιακόσια ενενήντα οκτώ *[not SP]*

[not SP] Day and month abbreviations are only expanded when appearing in correct date contexts.

Valid abbreviations for months: Ιαν., Φεβρ., Μάρτ. or Μαρτ., Απρ., Ιούν. or Ιουν. , Ιούλ. or Ιουλ., Αύγ. or Αυγ., Σεπτ., Οκτ., Νοέμ. or Νοεμ., Δεκ.

Valid abbreviations for days: Δευ., Δευτ., Τρ., Τετ., Πέμ., Παρ., Σάβ., Κυρ.

5.10. Phone numbers *[not SP]*

In this section the patterns of digits that are recognized as phone numbers are described. In the pronunciation of phone numbers, each group of digits is read out with a pause between the groups.

The digit strings will be read as follows:
- Groups of 1, 2 or 3 digits are read out as regular numbers.
- Groups of 4 digits are split into two groups of 2.
- Groups of 5 digits are split into two groups of 2 and a group of 1.
- Groups of 6 digits or more are spelled out.

5.10.1. Ordinary phone numbers

Sequences of digits in the following formats are treated as phone numbers. The following sequences can be separated by a space, full stop or hyphen:

Format

- xxx xx xx xxx
- xxxx xx xx xx
- xxx x xx xx xx
- xxxxx xx xxx
- xxxx x xx xxx
- xxx xxxx

The abbreviations *τηλ.*. (τηλέφωνο), *σταθ.* (σταθερό) and *κιν.* (κινητό) are expanded if they occur in front of a phone number. The words *τηλέφωνο*, *σταθερό*, *κινητό*, *φαξ* and *αριθμός τηλεφώνου* can also be found in front of a phone number.

Expression	**Reading**
φαξ 123 4567	φαξ 123 45 67
Κινητό 123 45 67 981	κινητό 123 45 67 981
Τηλ. 12345 56 789	τηλέφωνο 12 34 5 56 789

The following formats are only recognized as phone numbers if one of the above words or abbreviations, or an international prefix, or both, appear in front of the number:

Format

- xxxxxxxxxx
- xxx
- xxxx
- xxxxx
- xxxxxxx

5.10.2. International phone numbers

All the preceding formats can be recognised if preceded by an international prefix:

Format	**Example**
+x	+1 1234 5 68 974
+xx	+12 1234 5 68 974
+xxx	+123 1234 5 68 974
00x	001 1234 5 68 974
00xx	0012 1234 5 68 974
00xxx	00123 1234 5 68 974

Chapter 6. How to change the pronunciation

Words that are not pronounced correctly by the text-to-speech converter can be entered in the user lexicon (see *User's guide*). In this lexicon, the user enters a phonetic transcription of the word (see chapter *Greek Phonetic Text*). Phonetic transcriptions can also be entered directly in the text, using a PRN-tag (see *User's guide*).

Chapter 7. Greek Phonetic Text

The Greek text-to-speech system uses symbols based on the SAMPA phonetic alphabet (*Speech Assessment Methods Phonetic Alphabet*). The symbols are written with a space between each phoneme.

Only the symbols listed here may be used in phonetic transcriptions. Symbols not listed here are not valid in phonetic transcriptions and will be ignored if included in the user lexicon or in a PRN tag.

7.1. Consonants

Table 7.1. Symbols for the Greek consonants

Symbol	Word	Phonetic text	Comment
p	Που	p u	
b	Μπάμπη	b a1 m b i	
t	Τρόμπα	t r o1 m b a	
d	Ντροπή	d r o p i1	
k	Κοντά	k o n d a1	
g	Γκόρντον	g o1 r d o n	
c	Και	c e	Palatalized consonant
gj	Γκέιτς	gj e1 ts	Palatalized consonant
f	Φαξ	f a ks	
v	Βουνά	v u n a1	
s	Σου	s u	
z	Ζωική	z o i c i1	
D	Δικά	D i k a1	
T	Θενά	T e n a1	
C	Χίλια	C i1 L a	Palatalized consonant
x	Χωρίς	x o r i1 s	
G	Γαρ	G a r	
j	Για	j a	Palatalized consonant
r	Ρόδου	r o1 D u	
l	Λοιπόν	l i p o1 n	
L	Λιονταρίσιος	L o n d a r i1 s i o s	Palatalized consonant
n	Νάσια	n a1 s C a	
m	Μία	m i1 a	
J	μια	m J a	Palatalized consonant
N	έλεγχος	e1 l e N x o s	
M	σύμφωνα	s i1 M f o n a	
ts	τσιγκλάει	ts i g l aI1	
dz	τζεογκράφικ	dz e o g r a1 f i k	
ps	ψαριανος	ps a r j a n o1 s	
ks	ξανά	ks a n a1	
S	chic	S i k	English phoneme
Z	immersion	i m e1 r Z o n	English phoneme
tS	cheese	tS i1 z	English phoneme
dZ	genova	dZ e1 n o v a	English phoneme
w	wait	w eI1 t	English phoneme

7.2. Vowels

Table 7.2. Symbols for the Greek vowels

Symbol	Word	Phonetic text	Comment
a	αυτός	a f t o1 s	
e	ενός	e n o1 s	
i	η	i1 t a	
o	ως	o s	
u	ουκ	u k	
aI	eye	aI1	
OI	boy	b OI1	
aU	out	aU1 t	
eI	angel	eI1 n dZ e l	
IU	uses	IU1 z e z	English phoneme
oU	owner	oU1 n e r	English phoneme

7.3. Lexical stress

A lexical stress is used to indicate the level of prominence (or emphasis) of a syllable in a word. In words with more than one syllable, one of the syllables is more prominent than the others. This is referred to as word stress, or lexical stress. Words of one syllable also have word stress when spoken in isolation, although many may lose the stress in certain contexts. For the correct pronunciation of a word, it is important to include stress marks when writing phonetic transcriptions.

Greek words have primary stress mostly on the syllables containing a vowel with a diacritic.

In phonetic transcriptions, primary stress is indicated by the symbol 1 attached to the stressed vowel.

7.4. Word boundary effects

7.4.1. Word boundary reduction

There are several cases in which a word loses its final consonant:

- when a word ends in /s/ and the next word begins with /s/, /z/, /S/
- when a word ends in /n/ and the next word begins with /n/
- when a word ends in /k/ and the next word begins with /k/
- when a word ends in /b/ and the next word begins with /b/

Example:

ψαριανός / ps a r j a n o1 s / σωτήρια / s o t i1 r i a /
ψαριανός σωτήρια / ps a r j a n o1 s o t i1 r i a /

7.4.2. Word boundary voicing

Word boundary voicing occurs when a word ends with /s/ and the next word begins with a voiced consonant. In that case the /s/ becomes voiced (/z/).

Example:

ψαριανός / ps a r j a n o1 s / γκέητς / gj eI1 ts /
ψαριανός γκέητς / ps a r j a n o1 z gj eI1 ts /

7.5. Pause

An underscore ‘_’ in a phonetic transcription generates a small pause.

Chapter 8. Abbreviations

In the current version of the Greek text-to-speech system, the abbreviations in the table below are recognized in all contexts. These abbreviations are mostly case-insensitive (except for those indicated below by '*'). The presence or absence of a full stop after the abbreviation should be observed.

As previously mentioned, there are also abbreviations for the days of the week and the months (see chapter *Dates*).

Table 8. Abbreviations

Abbreviation	Reading
δ.	δευτερόλεπτα
ε.υ.τ.ε.ρ.	
τ.ρ.	τρέμματα
κ.τ.	εκτάρια
π.μ.	προ μεσημβρίας
μ.μ.	μετά μεσημβρίαν
ν.μ.	ναυτικά μίλια
ν.α.υ.τ.μ.	ναυτικά μίλια
χλμ.	χιλιόμετρα την ώρα

μ
/
ω

αιώνας
ι
.

κκόμβοι
ό
μ
.

κκιλοβατώρες
W
h
*

Μμεγαβατώρες
W
h
*

kχιλιόμετρα την ώρα
m
/
h

μμίλια την ώρα
/
h

κκύριος (κιλά if preceded by a number)
.

κκύριος κύριος
.
κ
.

κκυρία
α

κκύριος
ο
ς

ΔΔιεθνές Νομισματικό Ταμείο
N
T
*

δδισεκατομμύρια
ι
σ
.

ΕΕυρωπαϊκή Ένωση
.
Ε
.

αριθμόν
ρ
ι
θ
.

ββλέπε
λ
.

δδραχμές
ρ
χ
.

κκαι άλλοι
.

α
.
/
κ
.
ά
.

κκαι τα λοιπά
.
λ
.
π
.

κκαι λοιπά
.
λ
π
.

κκαι λοιπά
λ
π

κκαι ου το καθεξής
.
ο
.
κ
.

κκαι τα λοιπά
.
τ
.
λ
.

κκαι τα όμοια
.
τ
.
ό
.

ππρο Χριστού
.
Χ
.
*

dντόκτορ
r

ωφυπουργού
φ
/
γ
ο
υ

ὃδιευθύντρια
ν
τ
ρ
ι
α

The abbreviations for measurements *m, g*, *s, A, W, κ., τ.*, and *λ* are only expanded when appearing after a number.

Examples	**Readings**	
25 m	είκοσι πέντε μέτρα	
2 g	δύο γραμμάρια *[not SP]*	
1 s	ένα δευτερόλεπτο	
60 W	εξήντα βατ	
10 κ.	δέκα κιλά	*[not SP]*
1 τ.	ένας τόνος	*[not SP]*
5 λ	πέντε λίτρα	*[not SP]*

The following abbreviations are also recognized, and vary according to the number preceding them:

Expression	**Reading**
τ.μ	τετραγωνικό/ά μέτρο/α
κυβ.μ	κυβικό/ά μέτρο/α
κ.μ.	κυβικό/ά μέτρο/α
χιλ.	χιλιοστό/ά
τ.χιλ.	τετραγωνικό/ά χιλιοστό/ά
κυβ.χιλ.	κυβικό/ά χιλιοστό/ά
κ.χιλ.	κυβικό/ά χιλιοστό/ά
εκ.	εκατοστό/ά
τ.εκ.	τετραγωνικό/ά εκατοστό/ά
κυβ.εκ.	κυβικό/ά εκατοστό/ά
κ.εκ.	κυβικό/ά εκατοστό/ά
χλμ.	χιλιόμετρο/α
χμ.	χιλιόμετρο/α
τ.χλμ.	τετραγωνικό/ά χιλιόμετρο/α
τ.χμ.	τετραγωνικό/ά χιλιόμετρο/α
λιτ.	λίτρο/α
χγρ.	κιλό/ά
γρ.	γραμμάριο/α
kg	κιλό/ά
m²	τετραγωνικό/ά μέτρο/α
m³	κυβικό/ά μέτρο/α
cm	εκατοστό/ά
cm²	τετραγωνικό/ά εκατοστό/ά
cm³	κυβικό/ά εκατοστό/ά
mm	χιλιοστό/ά
mm²	τετραγωνικό/ά χιλιοστό/ά
mm³	κυβικό/ά χιλιοστό/ά
km	χιλιόμετρο/α
km²	τετραγωνικό/ά χιλιόμετρο/α
°C	βαθμός/οί Κελσίου
°K	βαθμός/οί Κέλβιν

Chapter 9. Web-addresses and email

Web-addresses and email-addresses are read as follows:

- *www* is read as three *w* following each other.
- Full stops (“.”) are read as *τελεία*, hyphens (“-”) as *παύλα*, underscore (“_”) as *κάτω παύλα*, slash (*“/”*) as *κάθετος*.
- Country codes (e.g. *gr*, *us*, *fr*) are spelled out letter by letter.
- The @ is read *παπάκι*.
- Words/strings (including *org*, *com*, and *edu*) are pronounced according to the normal rules of pronunciation in the system and in accordance with the lexicon.

String	**Reading**
www.acapela-group.com	w w w τελεία Acapela παύλα group τελεία com
http://www.acapela-group.com	h t t p άνω κάτω τελεία κάθετος κάθετος w w w τελεία Acapela παύλα group τελεία com
dimitris@yahoo.gr	dimitris παπάκι yahoo τελεία g r
dimitris_kotsi@yahoo.gr	dimitris κάτω παύλα kotsi παπάκι yahoo τελεία g r