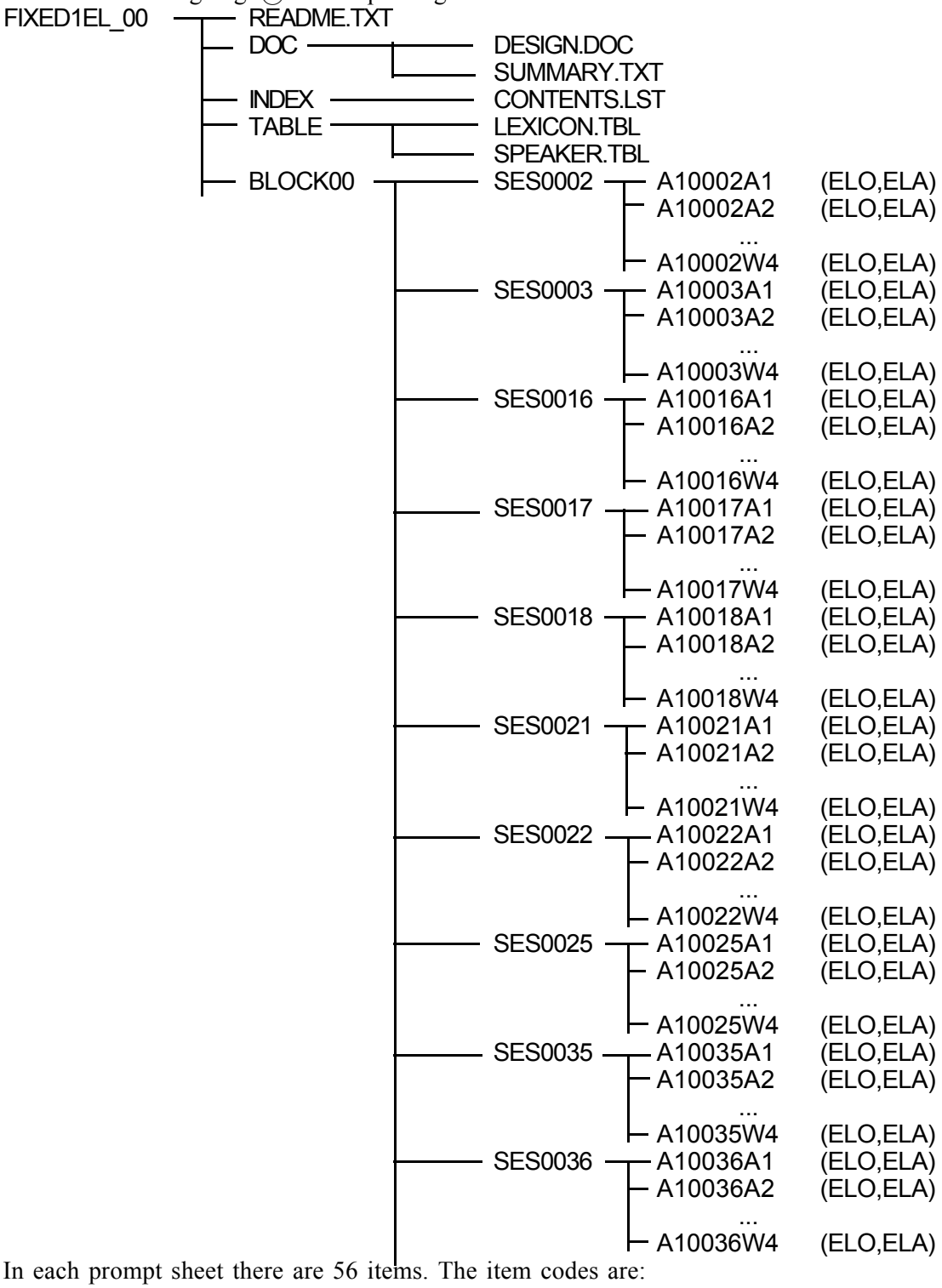
Contact persons : Irene Chatzi, Knowledge S.A.
echatzi@patra.hol.gr
echatzi@knowledge.forthnet.gr

Kallirroi Georgila, Wire Communications Lab., University of Patras
rgeorgil@wcl.ee.upatras.gr



In each prompt sheet there are 56 items. The item codes are:

A1-A3	common application words
B1	sequence of isolated digits
C1	prompt sheet number

C2	telephone number
C3	credit card number
C4	PIN code
D1	spontaneous date e.g. birthday
D2	prompted date
D3	relative and general date expression
E1	application word phrase
I1	isolated digit
L1-L3	spelled words
M1	money amount
N1	natural number smaller than 999999
O1	spontaneous name
O2	city of birth
O3	most frequent city name
O5	most frequent company/agency name
O7	forename & surname
Q1	yes/no question (expected yes)
Q2	yes/no question (expected no)
S1-S9	phonetically rich sentences
T1	time of day
T2	time phrase
W1-W4	phonetically rich words

The previous item codes have been specified in SD1.3.3. However, since they were not enough, the following additional item codes had to be used:

F1	yes/no question
F2	yes/no question (expected yes)
J1-J5	words broken into syllables
K1	natural number greater than 999999
K2	decimal number
K3	age
P1	male/female
P2	telephone model
P3	environment of call
P4	city of call
P5	profession
P6	fuzzy yes/no question that could have either yes/no or something else as an answer

The correspondence between the question numbers of every sheet and the item codes is:

1 - P1
2 - K3
3 - P4
4 - P2
5 - P3
6 - P5
7 - F1
8 - Q1
9 - D1
10 - O2
11 - Q2
12 - T1
29 - C3
30 - J2
31 - S3
32 - L2
33 - S4
34 - D3
35 - J3
36 - T2
37 - O3
38 - O5
39 - S5
40 - E1

13 - P6
14 - O1
15 - L1
16 - F2
17 - C1
18 - S1
19 - I1
20 - C2
21 - J1
22 - S2
23 - D2
24 - M1
25 - B1
26 - A1
27 - C4
28 - O7
41 - J4
42 - W1
43 - L3
44 - S6
45 - N1
46 - A2
47 - S7
48 - W2
49 - K1
50 - W3
51 - K2
52 - S8
53 - W4
54 - A3
55 - J5
56 - S9

A sheet example follows:

Áñéèìüò Åñùôçìáôïëïãßïõ: 1004

Êáë_ óáò ìYñá. Åõ÷áñéóôïyìå _ïëy _ïõ ôçëåöùí_óáôå óôï óyóôçìá ç÷ïãñÜöçóçò ïìéëßáò ôïõ _áíå_éóôçìßïõ _áôñ_í.

áñáêáë á_áíô_óôå ìå öõóéêü ôñü_ï óôéò åñùô_óåéò, _Üíôá ìåôÜ ôï ÷áñáêôçñéóôéêü _÷ï. Óå _åñß_ôùóç _ïõ èá á_áíô_óåôå ëáíèáóìYía óå êÜ_ïéá åñ_ôçóç, ìç èïñõâçèåßôå, óõíå÷ßóôå êáíïíéêÜ óôéò õ_üëïé_åò.

1. Åßóôå Üíäñáò _ ãõíáßêá;
2. _ïéá åßíáé ç çëéêßá óáò;
3. Á_ü _ïéá _üëç ôçëåöùíåßôå;
4. Ôé åßäïò ôçëåö_íïõ ÷ñçóéìï_ïéåßôå;
5. Á_ü _ïéïí ÷_ñï ìáò _áßñíåôå ôçëYöùíï; (_.÷. ó_ßôé, ãñáöåßï, _åñß_ôåñï,...)
6. Ôé äïõëåéÜ êÜíåôå;
7. Êá_íßæåôå ÍÁÉ _ ÏxÉ;

8. Åßíáé ç õ_çêïüôçôÜ óáò Åëëçíéê_ ÍÁÉ _ ÏxÉ;
9. _åßôå ôçí çìåñïìçíßá ãYííçó_ò óáò.
10. Óå _ïéá _üëç, ÷ùñéü _ _åñéï÷_ æ_óáôå ôá _áéäéêÜ óáò ÷ñüíéá;
11. Åßóôå Üíù ôùí ïãäüíôá åô_í, ÍÁÉ _ ÏxÉ;
12. Ôé _ñá åßíáé ô_ñá;
13. Èá _çãáßíáôå _ïôY ìüíïò/ìüíç óáò äéáêï_Yò;
14. _åßôå ìáò ôï üíïìÜ óáò;
15. _åßôå ìáò ôá ãñÜìáôá ôïõ áëöÜâçôïõ _ïõ _åñéëáìâÜíïíôáé óôï ìéêñü óáò üíïìá ìå ôç óåéñÜ.
16. Åßíáé ïé ìYñåò ôçò åâäïìÜáò å_ôÜ ÍÁÉ _ ÏxÉ;

Ô_ñá, _áñáêáë_ äéáâÜóôå ôéò á_áíô_óåéò, ìå ôá Yíôïíá ãñÜììáôá óôç äåîéÜ óô_ëç, áöïy áêïyóåôå _ñ_ôá ôçí åñ_ôçóç:

Åñ_ôçóç Á_Üíôçóç

17. ÄéáâÜóôå ôá øçößá:	**1,0,0,0,3,2**
18. ÄéáâÜóôå ôçí _ñüôáóç:	**Ôçí _ñùôáãùíßóôñéá ôçí ãíùñßóáôå.**
19. ÄéáâÜóôå ôï øçößï:	**3**
20. ÄéáâÜóôå ôïí áñéèìü ôçëåö_íïõ:	**01 92 498 98**
21. Óõëëáâßóôå ôç ëYîç:	**Êá-ôå-õèåß-áí**
22. ÄéáâÜóôå ôçí _ñüôáóç:	**Ôçí åß÷á óõíáíô_óåé ìéá- äõï öïñYò.**
23. ÄéáâÜóôå ôçí çìåñïìçíßá:	**ÄåõôYñá, 1 ÃåíÜñç 2014**
24. ÄéáâÜóôå ôï ÷ñçìáôéêü _ïóü:	**42 äñ÷.**

25. ÄéáâÜóôå ôá øçößá:	**8705926341**

26. ÄéáâÜóôå ôç ëYÎç:	**ÊÁÔÁËÏÃÏÓ**
27. ÄéáâÜóôå ôïí êùäéêü áñéèìü:	**000100**
28. ÄéáâÜóôå ôï ïíîìáôå__íôìï:	**ÁãÜôóáò Áããåëïò**
29. ÄéáâÜóôå ôïí áñéèìü _éóôùôéê_ò êÜñôáò:	**0500 8824 0710 2777**
30. Óõëëáâßóôå ôç ëYÎç:	**Å-ñãá-óß-áò**
31. ÄéáâÜóôå ôçí _ñüôáóç:	**ÁëëÜ ôüôå _ôáí áêüìá ìéá ÷áæïyëá.**
32. ÄéáâÜóôå ôá ãñÜìáôá óôç ëYÎç:	**á ê ç _ æ õ ü**
33. ÄéáâÜóôå ôçí _ñüôáóç:	**Èá _ñY_åé íá åãêñéèåß á_ü ôï êïéíïâïyëéï, üôáí ôï íîìió÷Yäéï ãéá ôçí éäéùôéêï_ïßçóç ôïõ ïñãáíéóìïy èá Yëèåé óôç Âïõë_ ôçí åñ÷üìåíç åâäîìÜää.**
34. ÄéáâÜóôå ôç öñÜóç:	**Ôçí Ôñßôç ç óõíÜíôçóç å_éêåíôñ_íåé ôï åíäéáöYñïí ôçò óôç Âüñåéá Ç_åéñï.**
35. Óõëëáâßóôå ôç ëYÎç:	**êá-æá-ìß-áò**
36. ÄéáâÜóôå ôçí _ñá:	**ìßá êáé ôYôáñôï**
37. ÄéáâÜóôå ôï üíîìá ôçò _üëçò:	**'Áâáò**
38. ÄéáâÜóôå ôï üíîìá ôçò åôáéñåßáò:	**Áããåë_ò Æïñì_Üò ÏÅ**
39. ÄéáâÜóôå ôçí _ñüôáóç:	**Õ__ñîå ìéá ãõíáßêá _ïõ ôçí åñùôåõô_êáôå ôñåëÜ.**
40. ÄéáâÜóôå ôçí _ñüôáóç:	**Èá åêôßèåíôáé ùò ôï ôYëïò ôïõ ì_íá.**
41. Óõëëáâßóôå ôç ëYÎç:	**ôá-ìß-áò**
42. ÄéáâÜóôå ôç ëYÎç:	**ÊÁËËÉÈÅÁ**

43. ÄéáâÜóôå ôá ãñÜììáôá óôç ëYîç:	**í ä õ _ â å ø ÷**
44. ÄéáâÜóôå ôçí _ñüôáóç:	**Ï ìïíáäéêüò Yñùôáò ôçò æù_ò ìïõ õ__ñîå ç ãõíáßêá ìïõ.**
45. ÄéáâÜóôå ôïí áñéèìü:	**29.420**
46. ÄéáâÜóôå ôç ëYîç:	**ËÉÓÔÁ**
47. ÄéáâÜóôå ôçí _ñüôáóç:	**ÃõñßæáìåôïÁíáôïëéêÜ ôçò ÅäYì ôïõ ÊáæÜí!**
48. ÄéáâÜóôå ôç ëYîç:	**_ùëåßôáé**
49. ÄéáâÜóôå ôïí áñéèìü:	**2.342.829**
50. ÄéáâÜóôå ôç ëYîç:	**äéáìYñéóìá**
51. ÄéáâÜóôå ôïí áñéèìü:	**775,43**
52. ÄéáâÜóôå ôçí _ñüôáóç:	**Âñéóêüôáí ó' Yíá äé_ëáíü óôïyíôéï.**
53. ÄéáâÜóôå ôç ëYîç:	**üñïöïò**
54. ÄéáâÜóôå ôç ëYîç:	**_ÑÏÇÃÏÕÌÅÍÏ**
55. Óõëëáâßóôå ôç ëYîç:	**ì_á-ñïy-ôé**

56. ÄéáâÜóôå ôçí _ñüôáóç:	**Ãyñéæå ôï "Îyëï âã_êå á_' ôïí _áñÜäåéóï" ìå ôçí ÂïõãéïõêëÜêç.**

10000 prompt sheets have been designed so that there will finally be 5000 recordings if half of the sheets are used. These prompt sheets have been designed according to the specifications mentioned in the relevant deliverables:

2 isolated digit items
1 single isolated digit: each speaker utters one of the ten digits

1 sequence of 10 isolated digits in one utterance: each speaker reads 10 digits, each one once. Consequently, 10000 such sequences are needed out of the 10 ! possible ones that exist

4 digit/number strings
1 prompt sheet number: each prompt sheet has a unique sheet number. The first 5 digits are ascending numbers starting from 10000 and the last one is the check digit. This number enables the correspondence between what the speaker was expected to say and what finally said
1 telephone number: these numbers are different in each sheet and cover various formats that exist in Greece
1 credit card number: 150 different credit card numbers have been used
1 6-digit PIN code: 150 different PIN codes have been used

3 natural numbers
1 number smaller than 999999
1 number greater than 999999
1 decimal number

1 money amount
There have been used money amounts that their right part is “drachmae” (50%) and “dr” (50%).

4 yes/no questions
2 predominant yes questions
1 predominant no question
1 question where there is an equal probability of a yes or no answer
These questions are the same in all sheets. The utterances of the speaker are spontaneous.

1 fuzzy yes/no question
The speaker can answer yes, no or something else such as “I don’t know”, “perhaps”, etc. This question exists in every sheet and the answer is spontaneous.

3 dates
1 date of birth (spontaneous)
1 prompted date phrase in word, not digital form: these dates are chosen in a way that we cover all day names (Monday, Tuesday, …), all day numbers (1-31), all month names (January, February, …), all month numbers (1-12), different year formats (1997 or 97) and so that the years vary mostly from 1990 to 2020
1 relative and general date expression: 250 different sentences have been used

2 times
1 time of day (spontaneous)
1 prompt phrase in analogue, not digital form

3 application keywords/keyphrases
30 different words have been used. Each speaker reads 3 such different words.

1 word spotting phrase using embedded application words
There are 5 sentences for every word. Consequently, 150 different sentences have been used.

5 directory assistance names
1 city of birth/growing up (spontaneous)
1 most frequent cities: 500 different city names have been used
1 most frequent companies/agencies: 500 different names have been used
1 proper name (forename and surname): 150 different names have been used

1 proper name (own name): spontaneous

3 spellings
1 spelling of proper name (e.g. own forename): spontaneous
2 real/artificial to maximize letter coverage
The words that have been used are stressed, in capital letters or in small letters. It is ensured that all the letters of the Greek alphabet are uttered with a percentage corresponding to the Greek letters' percentage of appearance in the Greek language. Each speaker must read all the letters. Artificial words are used due to the fact that spelling is not used often in Greek.

4 phonetically rich words
7500 different words have been selected from texts so that there are at least 1000 repetitions per phoneme. No word is repeated more than 5 times.

9 phonetically rich sentences
The sentences have been selected from texts so that they contain 5-10 words, include names, abbreviations and foreign words without being confusing. No sentence should be uttered more than 10 times, so we need 9000 different sentences for 10000 prompt sheets. It is ensured that each speaker utters every phoneme at least twice unless it is rare.

5 words broken into syllables
In the Greek language spelling is not used very often, while the procedure of breaking a word into syllables is widely used. That is the reason 5 words that have been broken into syllables are incorporated into each sheet.

The rest of the prompts are questions that aim at getting information about the speaker and the recording such as the age, the sex and the profession of the speaker, the telephone model, the city of call and the environment of call.

The recordings were made through ISDN using the a-law format, 8kHz, 8-bit. Every label file contains information about the recording date, recording time, recording place, region of call, calling environment and telephone model.

These ten calls were all made from Patras. However, the speakers have spent their childhood not only in Patras but in other regions as well. In Greece there are 4 different dialects:

1. Standard (urban) Modern Greek (81%)
(Athens (Attica), South Euboea, Thessalonike, the Peloponnese, Kythera, Ionian Islands)

2. Northern and Semi-Northern Greek (10%)
(from the northern shore of the Corinthian Gulf up to the northern Greek frontiers, Lefkas, Sterea Hellas, Hepeiros, Thessay, Macedonia, Thrace, North Sporades, Thasos, Lemnos, Lesbos, Samos, Tinos)

3. Cretan Modern Greek (6%)
(Crete)

4. Aegean Modern Greek (3%)
(the Dodecanese, the Cyclades, South Sporades, Chios)

Out of the 10 speakers, 8 speak Standard (urban) Modern Greek (the regions where they were brought up are Patras, Athens, Kalamata and Astros), 1 speaks Northern and Semi-Northern Greek (she was brought up in Igoumenitsa) and another 1 speaks Cretan Modern Greek (he has spent his childhood in Chania).

Nine speakers are between 16-30 in age and another one belongs to the age interval 31-45.

Three speakers are male and seven are female.

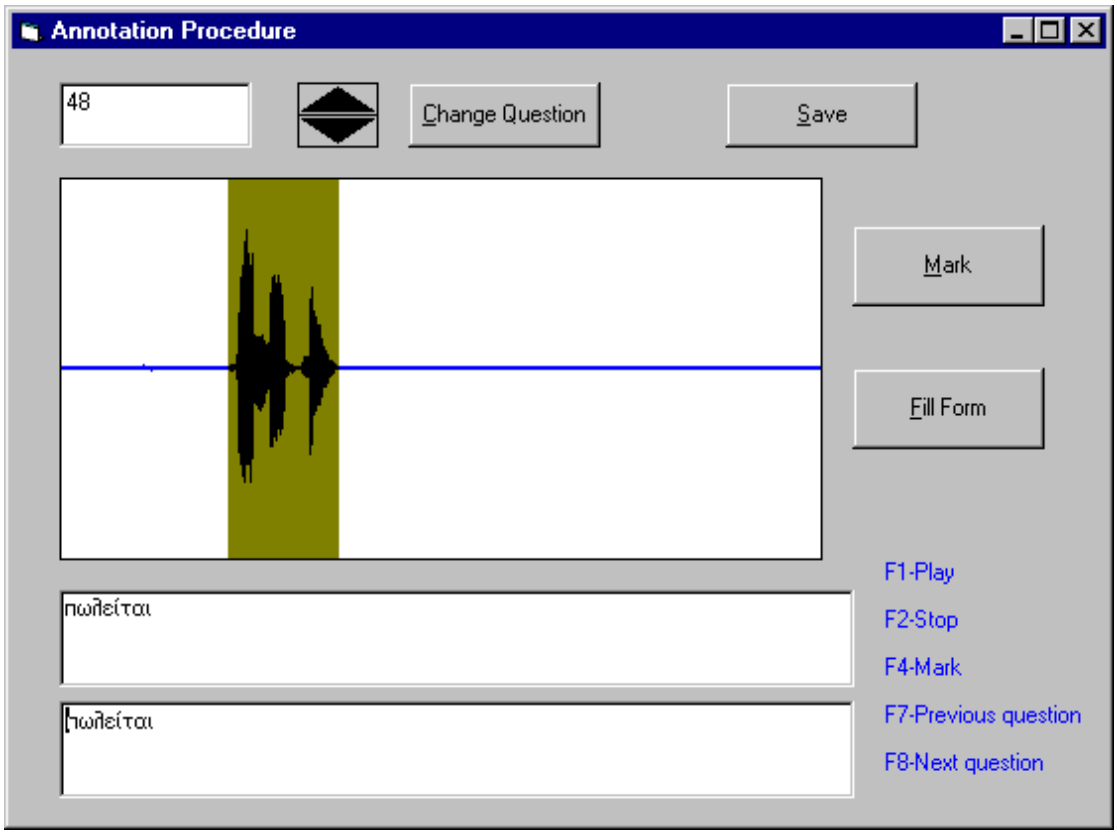


Figure 1

A program was written to make the annotation procedure easy and efficient. The user selects the speaker whose recording he wants to process. In the seventeenth question the speaker must utter 6 digits. The first 5 digits show the sheet number and the last one is the check digit. In this way it is ensured that the correspondence between the recordings and the sheet number indicated by the first 5 digits is valid.

The user of the program listens to the 56 a-law files of the chosen speaker. The program shows what the speaker was supposed to say, so the user listens to the file and writes down what the speaker says by using all the criteria that were specified in deliverable 1.3.3. The signal is displayed on the screen and the user can mark the part of it that corresponds to what the speaker said (Figure 1).

After the user has listened to all the files he fills a form with information about the region of call, the environment of call, the sex of the speaker, the type of telephone used, the area where the speaker has spent his/her childhood, the age of the speaker and the assessment of the recording (Figure 2). Then all the annotation files for the specific speaker are created. In this way, we make sure that all the files have the same information about the region of call, environment of call and the rest of the mnemonics that are common for all the files. Tests that have been made and the annotation procedure for the ten speakers show that the whole process is very efficient and user-friendly.

Asterisks denote mispronunciations, double asterisks denote not understandable parts and tildes indicate recording truncations.

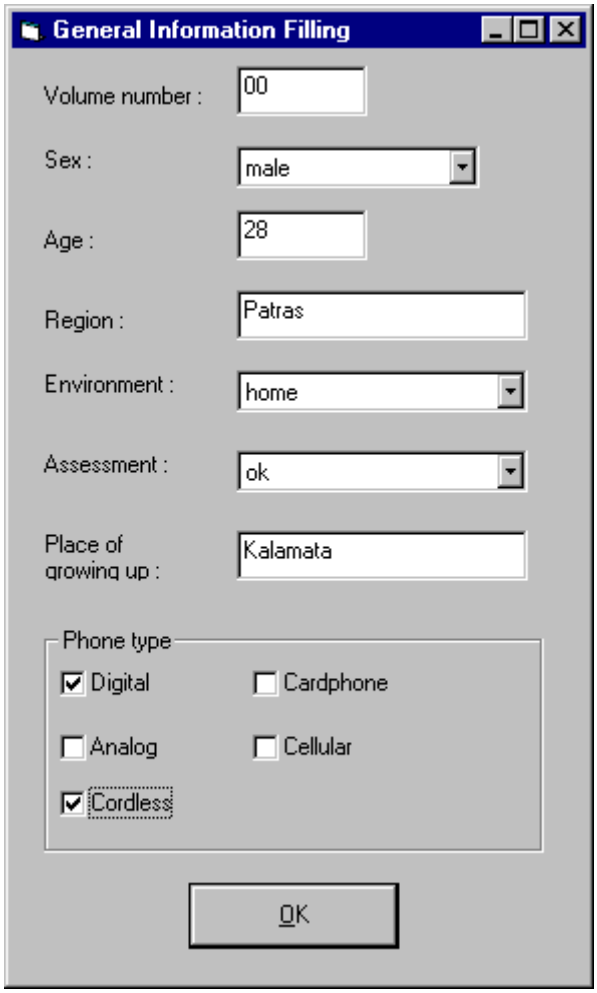


Figure 2

The phonetic alphabet that has been used is:

a	áí_êåé	an`iKi		D	äYìá		D`ema
`a	Üíåìïò	`anemos		z	æù_		zo`i
e	åä_	eD`o		dz	ôæÜìé		dz`ami
`e	Yíáò	`enas		T	èYìá		T`ema
i	çìYñá	im`era		k	êáëüò		kal`os
`i	ßóùò	`isos		K	êáéñüò		Ker`os
o	ïóì_	ozm`I		l	ëßãï		l`iGo
`o	üôáí	`otan		L	ëé_ìá		L`oma
u	ïõñÜ	ur`a		m	ìéóü		mis`o
`u	ïyôå	`ute		mj	ìõáëü		mjal`o
v	âë_ôï	vl`ito		b	ì_áßíù		b`eno
G	ãùíßá	Gon`ia		n	íüôïò		n`otos
j	ãYëéï	j`eLo		nj	íéÜôá		nj`ata
NG	Yããñáöï	`eNGrafo		d	íôyíù		d`ino
Nj	åããåí_ò	eNjen`is		p	_çëüò	pil`os	
g	ãêñåìüò	grem`os		r	ñ_ìá		r`ima
gj	ãêYìé	gj`emi		s	ó_ìá		s`oma
Ng	áãê_íáò	aNg`onas		ts	ôóü÷á	ts`oXa	
Ngj	Üãååëïò	`aNgjelos		t	ô_ñá		t`ora
NX	Üã÷ïò	`aNXos		f	ößëïò		f`ilos

NC	Üã÷ç	`aNCi	X	÷Üñç	X`ari
Nks	_ëÜóôéãî	pl`astiNks	C	÷Yñé	C`eri